MANNING THE TVA: WHITE MASCULINITIES AND ENGINEERING AT THE TENNESSEE VALLEY AUTHORITY, 1933-1953

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MANNING THE TVA: WHITE MASCULINITIES AND ENGINEERING AT THE TENNESSEE VALLEY AUTHORITY, 1933-1953
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For J. W. Shackelford (1915-2005),

grandfather, disabled chemical engineer, quiet leader.

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LIST OF ABBREVIATIONS

AIChE	American Institute of Chemical Engineers
ECPD	Engineers Council for Professional Development
FNRL	Fixed Nitrogen Research Laboratory
NDAC	National Defense Advisory Committee
OSRD	Office of Scientific Research and Development
STEM	Science, Technology, Engineering, and Mathematics
STS	Science, Technology, and Society
TIIC	Technical Industrial Intelligence Committee
TAD	Tributary Area Development
TVA	Tennessee Valley Authority
UCO	University of Colorado
UMO	University of Missouri
UTK	University of Tennessee at Knoxville (formerly University of Tennessee)
USDA	United States Department of Agriculture
WWI	World War I
WWII	World War II

SUMMARY

This dissertation seeks to address the use of gender and race in constructing U.S. engineering identity. It analyzes individual and institutional identities at the Tennessee Valley Authority (TVA) between 1933 and 1953 through a model of multiple white masculinities. Predominantly drawing on oral histories, autobiographical text, and correspondence by and involving TVA engineers and administrators, it shows how these men combined and exhibited various white masculinities to communicate what they believed 'a TVA engineer is'—and, by implication, what such an engineer 'isn't.'

The first part of the dissertation identifies patterns in the institution. It organizes these patterns into four archetypes: white-collar masculinity, physical masculinity, frontier masculinity, and military masculinity. The second part of the dissertation applies the same organization to one individual: Harry A. Curtis, who worked as TVA's chief chemical engineer, engineering consultant, and director.

The dissertation finds that TVA engineers between 1933 and 1953 performed multiple white masculinities that resembled larger contemporary trends. These actors valued certain white masculinities more than others. For example, they lauded and performed traits of white-collar and frontier masculinities more often than those distinctive to military masculinity. They were notably consistent across time.

Further, TVA performances of multiple white masculinities functioned as a hybridized hegemonic bloc, which appropriated traits of various masculinities to maintain hegemony. Such hybridization obscured the strong association of engineering identity with

masculinity and whiteness while strengthening boundaries around it. Because the multiple masculinities were associated with varied and often contradictory traits, actors selectively focused on lauded traits that specific 'insiders' successfully performed and those that specific 'outsiders' failed to perform. In doing so, they judged the same traits positively or negatively depending on the subject, showing the powerful flexibility of hybridization.

CHAPTER 1. INTRODUCTION

1.1 "Technically Vamvoozled Angels"

The dinner in honor of Dr. Harry A. Curtis began at 7:30 p.m. on Saturday, March 21, 1957, the first day of the weekend-long Valley-Wide Meeting of Union-Management Cooperative Conferences. It took place in the auditorium of the Gatlinburg, TN, Civic Center, a modern structure reminiscent of the mountains between which it nestled. Guests settled into the folding chairs that crowded between long tables bedecked with white tablecloths, tall tapered candles, and vine-strewn centerpieces. The podium rested onstage atop another long white tablecloth, its own plant-and-candle display composing "T V A" in giant letters. [1]

Speaker after speaker sang the praises of Curtis, the TVA's first Chief Chemical Engineer who moved into consulting for the Agency before returning to sit on its Board of Directors. For this occasion, just months before Curtis' retirement, some had traveled hundreds of miles to laud him for his distinctions "as a scientist, as an administrator, as a philosopher" especially those from his 24-year relationship with the TVA. "To try to sum up Dr. Curtis and what he has done in a few words, is an impossible task," opined a longtime protégé.[2] "But beyond that," said a former colleague, "I would suggest that there

[1] "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[2] Ray Copson, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

has been a triumph of personality…It is a quality of personality that one should have experienced in order to understand."[3]

Indeed, it was Curtis' strong personality that each speaker primarily addressed, "to express our warm affection towards a man whose irascibility and fractious remarks have been the pride--and frequently the despair--of everyone who has known him."[4] Anecdotes depicted a witty, cigar-smoking man with a practical bent and a willingness to "battle" for what he thought best.[5] Robert Sessions, a former TVA attorney, read selections of letters penned by those who couldn't attend. One wrote to Curtis of "My admiration for you as a big man in every way that counts."[6] Another emphasized, in addition to Curtis' scientific and engineering expertise, that he was "a man who possessed the needed know-how from the world of manufacturing enterprise, but who was free from the common emotional biases against the government's undertaking novel jobs..."[7] Nearly all of these letters praised or joked about his sharp tongue. "It is not at all unusual or infrequent for Dr. Curtis to be a gibralter-like [sic] center of gravity when good sense, deep convictions and sheer guts are the required ingredients of public service," Clapp wrote, "That he combines these attributes with the penchant for calling a spade by its right name, and a flair…for dispelling stuffiness like an intellectual gadfly - makes him a man of strong yeast in any enterprise."[8]

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[3] Robert Sessions, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[4] Sessions.
[5] Sessions; Copson, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[6] Atmand Abrams to Dr. Harry Curtis, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323, University of Tennessee Libraries, Knoxville, Special Collections.
[7] John P. Ferris to Mr. Lloyd L. Huntington, March 17, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[8] Gordon R. Clapp to Mr. L. L. Huntington, March 5, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

"[O]ne of the highlights" of the occasion, Travis Hignett later recalled, "was the reading of a number of letters that Dr. Curtis had written to different people…if he thought someone was not doing his job right, he didn't hesitate to tell him so and in strong words."[9] This applied to Curtis' hierarchical superiors at least as much as to his subordinates, as the memos and letters dating back to the 1930s attested. These communications also involved a fair amount of verbal irony, wordplay, and general silliness.[10]

Among them, Sessions homed in on an October 5, 1936 memo from Curtis to Gordon Clapp (Director of Personnel at the time). In it, Curtis jokingly sought to establish "a new religious order" named "'Technically Vamvoozled Angels,'" and he sought "someone who might be selected as God" of this religion. Curtis continued,

> I shall first list the qualifications for the ordinary Angel members, from which you will see that the God who undertakes to direct the activities of the ordinary Angels must himself be a fairly able individual.
>
> Qualifications for Ordinary Angels
>
> (a) Well-informed as to work or the specialized knowledge in the particular field.
>
> (b) Able to grasp situations, draw correct conclusions, and keep proper sense of proportion.
>
> (c) Able to profit by experience.
>
> (d) Enterprising, entertaining, resourceful, and progressive.
>
> (e) Productive of desired results.

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[9] Travis P. Hignett, interview by Mark Winter, April 13, 1983, 2, Box 5, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[10] "Dinner Meeting in Honor of Dr. H. A. Curtis."

(f) Careful and accurate.

(g) Reasonably expeditious in completing tasks of known difficulty or in producing a given quantity of work.

(h) Neat and orderly in work.

(i) Industrious.

(j) Cooperative.

(k) Successful in winning confidence and respect; and

(l) Dependable.[11]

Sessions then moved to establish the religion Curtis had laid out in 1936. He requested that the audience, through applause, "confer upon our good friend and long-time colleague, Dr. Harry A. Curtis, the status, the title, the position of Charter Member of the Order of Ordinary Angels, Senior Grade." The list, its intended use, and Curtis' nomination to the religion were all in a spirit of levity, and one could easily agree that all the traits on the list would be desirable in anyone. That said, Chief Chemical Engineer Curtis made it part of a "Technical" religion because—however light-heartedly—he desired these traits in his technical employees.

Significantly, each of the attributes correlates to a specific masculine archetype, and elements of the list appear again and again as qualities that Curtis and other 'TVA men' valued in an engineer. In the introductory chapter to *Manliness & Civilization,* Gail Bederman contextualizes the significance of the 1910 heavyweight championship fight

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[11] Harry A. Curtis to Gordon Clapp, October 5, 1936; qtd. in Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis;" underlining and formatting in Sessions' presentation transcription.

between the Black Jack Johnson and the white Jim Jeffries, explaining, "Logically, there was no reason to see a heavyweight fighter's claim to bodily strength as a claim to public power. Yet the metronymic process of turn-of-the-century manhood constructed bodily strength and social authority as identical."[12] In a similar vein, there was no logical connection between a man's qualities as, say, "entertaining," or "progressive" and his ability to produce quality work, and yet these were among the traits that Curtis found important enough to elevate men to technical Angels.

Sessions ran out of time before he could finish his introductory speech. An addendum includes the remarks he had to omit: a reflection on the memos and letters Curtis had penned and thoughts on "the real point of this man." Sessions discussed Curtis' sense of agency; his dedication to "larger ideas" and the institutions that reflect them; and his feeling of partnership with everyone above or below him, believing them "all agents in a common cause." Sessions ended this speech with a simple statement: "Here, then, is a man."[13]

This dissertation aims to contribute to our understanding of white masculinities in U.S. engineering through a case study of the TVA from 1933 to 1953. By showing the varied and protean ways in which engineers and administrators in a single institution invoked discourses of white masculinity to describe its engineering community, I hope to shed light on the varied and protean white masculinities with which one must grapple in

[12] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995), 8.
[13] Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."

order to reform, support, or simply understand the field. Before addressing my specific approach, however, some information on the TVA and the U.S. engineering community is in order.

1.2 About the TVA

The Tennessee Valley Authority (TVA) was founded in 1933 as a government corporation with a broad mission to improve the Tennessee Valley region economically, socially, and physically. It initially sought to do so through a wide range of means. This included power production, but also improvements in flood control, transportation, soil conservation, forestry, local employment and education, and agricultural production. In its first several years, the TVA focused on building anew: constructing dams, battling private power companies to establish markets, and creating a unique rate structure for power consumption. The TVA also built a workforce, recruiting a diverse array of experts and workers to a completely novel project and institution, and it increasingly bureaucratized as it expanded.[14] Motivated to establish independence from the federal government and to win the favor and cooperation of local institutions and populations, the TVA began to focus on regionalism at this time, publicizing a model of "grassroots democracy" that would significantly influence policy.[15] It did so in the context of the Great Depression, an era in

[14] Thomas K McCraw, *TVA and the Power Fight, 1933–1939* (Philadelphia: JB Lippincott, 1971); Erwin C Hargrove and Paul Keith Conkin, eds., *TVA: Fifty Years of Grass-Roots Bureaucracy* (Urbana and Chicago: University of Chicago Press, 1983).
[15] Philip Selznick, *TVA and the Grass Roots: A Study of Politics and Organization* (Berkeley: Univ of California Press, 1949); Nancy L. Grant, *TVA and Black Americans: Planning for the Status Quo* (Philadelphia: Temple University Press, 1990).

which federal oversight and aid significantly expanded despite a general discomfort with such developments, especially in the South.[16]

By 1939, the Agency had won the favor of most Americans and Tennessee Valley populations, and its design and construction crews were experienced and efficient. The overall mission of the TVA shifted emphatically toward national defense with the start of World War II (WWII). Its focus on power production drastically overshadowed its other programs as it multiplied its generation capacity (primarily for the nuclear facilities at Oak Ridge) and diversified from hydroelectric generation into steam and internal combustion plants. Other programs were oriented towards defense and occasionally reduced, contributing to an overall shift in the skill sets demanded and employed at the TVA. Other wartime factors affected TVA employment: a sense of great urgency in new construction, significant materials shortages, diminishing manpower due to military demands, and the entry of many women into the labor force.[17] In the same period, a growing chorus of opposition to racial discrimination by the TVA and the 1941 passage of Executive Order 8802 had moderate success in dismantling barriers to Black employment at the agency.[18]

After the second World War, the TVA faced greatly increasing energy demands, partly resulting from the post-War affluence of residential and business customers, and partly the continued demand of Oak Ridge and the ensuing Cold War.[19] The previously dramatic build-up of TVA generating capacity, however, slowed, and maintenance of

[16] McCraw, *TVA and the Power Fight, 1933–1939*; Hargrove and Conkin, *TVA: Fifty Years*.
[17] Hargrove and Conkin, *TVA: Fifty Years*.
[18] Grant, *TVA and Black Americans*.
[19] Hargrove and Conkin, *TVA: Fifty Years*; McCraw, *TVA and the Power Fight, 1933–1939*.

previously constructed plants assumed increasing importance.[20] The TVA increasingly bureaucratized, and it slowly moved towards privatization through renewed battles with private utilities and a changing relationship with the federal government, although the onset of the Korean War momentarily slowed this shift.[21]

1952 saw a sweeping Republican electoral victory at the national level, and appropriations for new TVA power plants halted in 1953. This significantly changed the Agency, ushering its progress toward being "just another power company," and provides a natural end to the time period analyzed in this dissertation.[22]

The TVA is a particularly good site of study for this dissertation. Its scale, longevity, and hybrid public-private organizational structure allow one a comprehensive look at several major fields of engineering. It employed large numbers of engineers in numerous disciplines, levels, and contexts, in several locations and multiple states in the Southeast.[23] Further, the TVA has strongly influenced the southeastern U.S. and innovation in the American power sector historically, and it continues to significantly affect the region.[24]

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[20] Wilmon H. Droze, "The TVA, 1945-80: The Power Company," in *TVA: Fifty Years of Grass-Roots Bureaucracy*, ed. Erwin C Hargrove and Paul Keith Conkin (Urbana and Chicago: University of Chicago Press, 1983), 66–85.
[21] Hargrove and Conkin, *TVA: Fifty Years*.
[22] Droze, "TVA, 1945-80," 78; Hargrove and Conkin, *TVA: Fifty Years*.
[23] "Employees of TVA as a Whole July-Dec 1948," October 29, 1948, Box 420, folder 20; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Hargrove and Conkin, *TVA: Fifty Years*.
[24] Hargrove and Conkin, *TVA: Fifty Years*; "TVA at a Glance" (Tennessee Valley Authority), accessed July 13, 2018, https://www.tva.gov/file_source/TVA/Site%20Content/About%20TVA/2017_TVA_at_a_Glance_FINAL.pdf; "About TVA" (Tennessee Valley Authority), accessed July 12, 2018, https://www.tva.gov/About-TVA.

1.3 About Engineering Diversity

The U.S. community of trained and practicing engineers is tenaciously white and male. Women made up 13.3% of full-time engineers between 2012 and 2016. In 2011, women earned only 17% of bachelor's degrees awarded in engineering in the U.S., despite earning roughly 57% of U.S. bachelor's degrees overall. Underrepresented racial minorities (Black Americans, Native Americans, and non-white Hispanics) earned just 12% of U.S. bachelor's degrees in engineering in 2011, and they made up just 12.7% of working engineers from 2012 to 2016, despite being roughly 30% of the U.S. population. It was reported that, in 2011, African Americans earned a scant 4% of U.S. engineering bachelor's degrees and were 5.1% of full-time engineers despite being 12% of the population.[25]

A thoroughly white and masculine engineering profession presents a number of problems. Multiple scholars in Science, Technology, and Society (STS) have showed that technology is socially constructed, and that the identities of those involved in its construction are significant to its design and real-world impacts.[26] This can negatively affect people as end users, whether certain features of an artifact serve as a means of

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[25] Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020), 7–8 citing "National Center for Education Statistics, "Degrees Conferred by Sex and Race," https://nces.ed.gov/fastfacts/display.asp?id=72; Philip Cohen, "More Women Are Doctors and Lawyers Than Ever—but Progress Is Stalling," The Atlantic, December 11, 2012, http://www.theatlantic.com/sexes/archive/2012/12/more-women-are-doctors-and-lawyers-than-ever-but-progress-is-stalling/266115/; National Action Council for Minorities in Engineering, 2013 NACME Data Book: A Comprehensive Analysis of the "New" American Dilemma (White Plains, NY: NACME, 2013), 1, 4; National Action Council for Minorities in Engineering, 2011 NACME Data Book: A Comprehensive Analysis of the "New" American Dilemma (White Plains, NY: NACME, 2011), 2, 5, 7, http://www.nacme.org/research-publications; United States Census Bureau, "STEM Occupations by Sex, Race, and Hispanic Origin: 2012–2016 ACS 5-Year," https://www.census.gov/data/tables/time-series/demo/industry-occupation/stem.html.].

[26] Wiebe E. Bijker, Thomas Parke Hughes, and T. J. Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, Anniversary ed. (Cambridge, Mass: MIT Press, 2012); Louis L. Bucciarelli, *Designing Engineers*, Inside Technology (Cambridge, Mass: MIT Press, 1994); Judy Wajcman, *Feminism Confronts Technology* (Pennsylvania State University Press, 1991); Langdon Winner, "Do Artifacts Have Politics?," *Daedelus* 109, no. 1 (Winter 1980): 121–36.

establishing patterns of power or authority, or whether the needs of users are simply neglected or overlooked by designers with limited perspective.[27] Cutting portions of the population out of the design process also affects their agency as creators or simply independent agents.[28]

Studies have shown that simply attempting to add more women and minorities has not been an effective tactic. The way in which technical skills are embedded in our current culture of masculinity reinforces relationships between white men and influences how technology is discussed and taught, significantly encouraging the exclusion of other groups.[29] Despite the debatable utility of certain professional standards, they continue to limit the populations that can achieve the rank of engineer (or technical expert) to this day.[30] Once they reach such ranks, it can be difficult to rise through them. When leaders in business and politics have specifically recruited women to technical fields—for example, during war—women remained low in hierarchy and were the first to be fired.[31] As neoliberal ideology has influenced the American political economy in recent years and loosened some bureaucratic professional standards, the strong association between technical skills and white masculinity have had at least as important and detrimental impacts on other populations. One study shows that despite--or, to some degree, because of--the growing informality of 21st-century tech companies, women with comparable skills

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[27] Winner, "Do Artifacts Have Politics?"
[28] Wajcman, *Feminism Confronts Technology*, iix.
[29] Amy E. Slaton, *Race, Rigor, and Selectivity in U. S. Engineering: The History of an Occupational Color Line* (Cambridge, MA: Harvard University Press, 2010); Amy Sue Bix, *Girls Coming to Tech!: A History of American Engineering Education for Women*, Engineering Studies (Cambridge, MA: The MIT Press, 2013); Wajcman, *Feminism Confronts Technology*.
[30] Slaton, *Race, Rigor, and Selectivity in U. S. Engineering*.
[31] Laura M. Puaca, *Searching for Scientific Womanpower: Technocratic Feminism and the Politics of National Security, 1940-1980*, Gender and American Culture (University of North Carolina Press, 2014).

to men continue to be shunted into 'hybrid' jobs with lower pay because they are assumed to have certain requisite 'soft skills' that their male counterparts lack.[32]

Effectively diversifying engineering requires a better understanding of the profession's relationship with white masculinities. Scholars have long argued that masculinity must be studied to understand gendered power dynamics and that whiteness must be studied to understand racial power dynamics.[33] As race and class are highly gendered, and vice versa, scholars argue that these categories must be studied together.[34]

1.4 Course of Action

1.4.1 Theory Used

This dissertation draws on and is organized around a theory of multiple masculinities that incorporates race as a major part of each masculinity's identification and boundary-setting. In large part due to the overwhelming whiteness of TVA's professional class during the

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[32] Judith Glover and Yvonne Guerrier, "Women in Hybrid Roles in IT Employment: A Return to'Nimble Fingers'?," *Journal of Technology Management & Innovation* 5, no. 1 (2010): 85–94.

[33] Michael Kimmel, "Human Beings: An Engendered Species," in *The Gendered Society* (New York: Oxford University Press, 2015), 1–17; Nina Lerman, Ruth Oldenziel, and Arwen Mohun, "The Shoulders We Stand On and the View from Here: Historiography and Directions for Research," *Technology and Culture* 38, no. 1 (1997): 9–30; Alan Petersen, "Research on Men and Masculinities Some Implications of Recent Theory for Future Work," *Men and Masculinities* 6, no. 1 (2003): 54–69; David R. Roediger, *The Wages of Whiteness: Race and the Making of the American Working Class* (New York: Verso, 1991) citing Cyril Brigg, W. E. B. Du Bois, Toni Morrison, Hazel Carby, Bell Hooks, Coco Fusco.

[34] Bederman, *Manliness and Civilization*; Glenda Elizabeth Gilmore, *Gender and Jim Crow: Women and the Politics of White Supremacy in North Carolina, 1896-1920* (UNC Press, 1996); Hazel V. Carby, "On the Threshold of the Women's Era: Lynching, Empire and Sexuality in Black Feminist Theory," in *'Race', Writing and Difference*, ed. Henry Lewis Gates (Chicago: University of Chicago Press, 1986), 301–16; Elizabeth Higginbotham, "African-American Women's History and the Metalanguage of Race," in *Feminism and History*, ed. Joan W. Scott, Oxford Readings in Feminism (Oxford University Press, 1996), 183–208; E. Higginbotham, *Too Much to Ask: Black Women in the Era of Integration*, Gender and American Culture (University of North Carolina Press, 2001); Sarah Haley, *No Mercy Here: Gender, Punishment, and the Making of Jim Crow Modernity*, Justice, Power, and Politics (University of North Carolina Press, 2016).

time period under consideration,[35] all but one of the men analyzed were white and in the ethnic majority, and each masculinity discussed in this dissertation is a white masculinity.[36] The theory used includes nonwhite masculinities; however, discussion of them is beyond the scope of the current study.

R. W. Connell's theory of hegemonic masculinities is part of a large and well-established school of thought that gender and race are socially constructed and context dependent.[37] Masculinity here is defined as a dynamic configuration or pattern of practice,[38] and it can be analyzed as both an artifact (descriptively) as well as a process or a tool used to signify power differentials (causally).[39] Although there is a physical reality to the bodies involved in this process, gendering "link[s] both anatomy and identity to particular arrangements of authority and power" despite a lack of intrinsic relationship, as Gail Bederman explains.[40] "Combined, these processes produce a set of truths about who an individual is and what he or she can do, based upon his or her body," she writes. Further, "Individuals have no choice but to act upon these meanings—to accept or reject them, adopt or adapt them—in order to be able to live their lives in human society."[41]

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[35] Grant, *TVA and Black Americans*.
[36] Analysis of J. Max Bond, the one Black professional at TVA, serves to illuminate a white masculinity.
[37] R.W. Connell, *Masculinities*, 2nd ed. (Berkeley and Los Angeles, CA: Polity Press, 2005); R. W. Connell and James W. Messerschmidt, "Hegemonic Masculinity: Rethinking the Concept," *Gender & Society* 19, no. 6 (2005): 829–59; Joan W. Scott, "Gender: A Useful Category of Historical Analysis," *The American Historical Review* 91, no. 5 (1986): 1053–75; Joan W. Scott, *Gender and the Politics of History*, Gender and Culture (Columbia University Press, 1988); John Tosh, "What Should Historians Do with Masculinity? Reflections on Nineteenth-Century Britain," *History Workshop*, no. 38 (1994): 179–202; Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity*, Thinking Gender (Routledge, 1990); Petersen, "Research on Men and Masculinities Some Implications of Recent Theory for Future Work"; Bederman, *Manliness and Civilization*; Higginbotham, "African-American Women's History and the Metalanguage of Race"; Roediger, *The Wages of Whiteness*; Miller, *Engineering Manhood*.
[38] Connell and Messerschmidt, "Hegemonic Masculinity," 832, 843; Bederman, *Manliness and Civilization*.
[39] Scott, "Gender: A Useful Category of Historical Analysis."
[40] Bederman, *Manliness and Civilization*, 8.
[41] Bederman, 7.

Connell's theory claims that multiple masculinities interact in any given context, and it considers the dynamics between the different masculinities to present the idea of hegemonic masculinity, the masculine ideal in any given context that legitimizes the subordination of women, even as it subordinates and benefits various marginalized and complicit masculinities.[42] In response to criticisms and uses of the original theory, Connell and James Messerschmidt have more recently complicated the theory to allow for hegemonic masculinities that vary with more immediate context, and from very local to national levels, with certain "cousin resemblance" between them.[43] Connell and Messerschmidt maintain the existence of complicit and marginalized masculinities, including nonwhite masculinities; however, my analysis will not make use of these masculinities. Connell and Messerschmidt write, "A degree of overlap or blurring between hegemonic and complicit masculinities is extremely likely if hegemony is effective."[44] Like most scholars, I assume that no real person fully performs hegemonic masculinity; by extension, I believe it's *all* 'overlap or blurring.' People coded 'male' benefit to some degree from the 'masculine dividend' (the 'benefit' mentioned in Connell's original theory), so all men technically perform complicit masculinity. What's interesting is not *that* all men perform complicit masculinity, but *how* they do so—that is, how they interact with different hegemonic masculinities.

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[42] R. Connell, *Gender and Power: Society, the Person, and Sexual Politics* (Stanford University Press, 1987); Connell, *Masculinities*.
[43] Connell and Messerschmidt, "Hegemonic Masculinity"; Demetrakis Z Demetriou, "Connell's Concept of Hegemonic Masculinity: A Critique," *Theory and Society* 30, no. 3 (2001): 337–61.
[44] Connell and Messerschmidt, "Hegemonic Masculinity," 839.

Scholars have used this more nuanced theory to inspect masculinity in areas outside engineering, from mixed martial arts to crime.[45] Much closer to engineering, Stephen Meyer argues in *Manhood on the Line* that crises in industrialization and masculinity pushed automotive workers to redefine and reinforce their masculinity by pulling in elements of both rough masculinity and respectable masculinity.[46] Tony Coles, remaining on the theoretical level, combines Connell's theory of hegemonic masculinity with Bourdieu's theories on habitus, fields, and capital to model how men support and subvert multiple 'dominant' masculinities at the individual and group levels, allowing for the unconscious performance of masculinity.[47]

This dissertation also frequently references identity. Although used in the singular throughout, it is assumed that a person's 'identity' (or an institution's, for that matter) is composed of multiple intersecting identities. Drawing on psychologist Stephanie Shields' work on intersectionality, identities "serve as organizing features of social relations" and "mutually constitute, reinforce, and naturalize one another." Any given identity is a practice, rather than something we receive.[48]

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[45] Akihiko Hirose and Kay Kei-ho Pih, "Men Who Strike and Men Who Submit: Hegemonic and Marginalized Masculinities in Mixed Martial Arts," *Men and Masculinities* 13, no. 2 (2010): 190–209; James Messerschmidt, "Varieties of 'Real Men,'" in *Men's Lives*, ed. Michael Kimmel and Michael Messner, 7th ed. (Pearson Education, Inc., 2007), 3–20.
[46] Stephen Meyer, *Manhood on the Line: Working-Class Masculinities in the American Heartland*, The Working Class in American History (University of Illinois Press, 2016).
[47] Tony Coles, "Negotiating the Field of Masculinity The Production and Reproduction of Multiple Dominant Masculinities," *Men and Masculinities* 12, no. 1 (2009): 30–44.
[48] Stephanie A. Shields, "Gender: An Intersectional Perspective," *Sex Roles* 59, no. 5–6 (September 2008): 302; This definition is also used in Miller, *Engineering Manhood*.

1.4.2 My Contribution

Predominantly using oral histories, autobiographical text, and correspondence, this dissertation focuses on engineering identity at the very local level, showing how engineers and administrators with whom they worked combined and exhibited multiple different masculinities, in the process communicating 'what a TVA engineer is'—and, by implication, what such an engineer 'isn't.' Although it makes note of general trends in TVA engineering masculinities, the dissertation does not aim to define a specific hegemonic masculinity accepted and practiced within the institution. Rather, it shows that, while such combinations of masculinities trend a certain way, individuals can express certain traits in different ways or not at all.

Multiple masculinities were present in TVA engineering culture between 1933 and 1953. This dissertation organizes their expression into four masculinities. I based these typologies on previous scholarship but distinguish them from masculinities that scholars have previously identified and labeled. Because masculinities are so fluid, it is common and helpful to identify and label specific masculine archetypes to study within a certain historical context as I have done.[49]

At the same time, I emphasize that these typologies are not monolithic identities but are always crosscut by others. As Connell and Messerschmidt write, "ambiguity in

[49] Connell, *Masculinities*; Michael S. Kimmel, *Manhood in America: A Cultural History*, 3rd ed (New York: Oxford University Press, 2012); E. Anthony Rotundo, *American Manhood: Transformations in Masculinity from the Revolution to the Modern Era* (New York, NY: BasicBooks, 1993); Bederman, *Manliness and Civilization*; Lisa M Frehill, "The Gendered Construction of the Engineering Profession in the United States, 1893–1920," *Men and Masculinities* 6, no. 4 (2004): 383–403; Hirose and Pih, "Men Who Strike and Men Who Submit"; Connell and Messerschmidt, "Hegemonic Masculinity."

gender processes may be important to recognize as a mechanism of hegemony."[50] A man performing traits of multiple masculinities claims them all, in a 'both-and' situation rather than an 'either-or.' The typologies, however, are important, since "these models do, in various ways, express widespread ideals, fantasies, and desires…" as Connell and Messerschmidt write, "Furthermore, they articulate loosely with the practical constitution of masculinities as ways of living in everyday local circumstances."[51]

This dissertation contributes to socio-political historiography of the TVA.[52] Many historiographical works discuss the TVA at the institutional level. This overlaps with studies that examine TVA leaders and consider their leadership styles and ideals.[53] Significant work has criticized the TVA for historical harm to Black and poor populations.[54] There has, however, been little analysis of gender at the TVA, and my work helps fill this gap.

My research also contributes to gender historiography, particularly within the History of Technology and Science, Technology, and Society (STS). Historians within and outside the History of Technology have studied gendered impacts of changes in the workplace from the late 1800s onward. This includes a conscious differentiation between

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[50] Connell and Messerschmidt, "Hegemonic Masculinity," 838.
[51] Connell and Messerschmidt, 838.
[52] For relevant studies in other fields, see: Herman C. Pritchett, *The Tennessee Valley Authority: A Study in Public Administration* (Chapel Hill, NC: University of North Carolina Press, 1943); Walter L Creese, *TVA's Public Planning: The Vision, the Reality* (Knoxville: Univ. of Tennessee Press, 1990); Richard A Colignon, *Power Plays: Critical Events in the Institutionalization of the Tennessee Valley Authority* (SUNY Press, 1997).
[53] Thomas K McCraw, *Morgan vs. Lilienthal: The Feud within the TVA* (Loyola University Press, 1970); McCraw, *TVA and the Power Fight, 1933–1939*; Hargrove and Conkin, *TVA: Fifty Years*; Erwin C Hargrove, *Prisoners of Myth: The Leadership of the Tennessee Valley Authority, 1933-1990* (Princeton University Press, 1994).
[54] Grant, *TVA and Black Americans*; Michael J McDonald and John Muldowny, *TVA and the Dispossessed: The Resettlement of Population in the Norris Dam Area* (Knoxville: Univ. of Tennessee Press, 1981).

genders, including masculinities, to build prestige for one's line of work.[55] While some historians of gender and technology have focused on women and engineering,[56] a growing number have inspected engineering masculinity around the turn of the twentieth century. Each (described below) utilizes Connell's theory of masculinities in the process.

In "The Gendered Construction of the Engineering Profession in the United States, 1893-1920," Lisa Frehill examines historical documents that address all engineering fields as a bloc to show several ways in which engineering advocates at the time constructed their profession as masculine by identifying it with the hegemonic masculinity of the day.[57] Ruth Oldenziel shows in *Making Technology Masculine* that elite white male engineers in the U.S. around the turn of the twentieth century used a variety of tactics to tie their work (and technology broadly) to the hegemonic masculinity of the time, and thus to exclude women and other men from the profession. Rather than remaining on the level of engineering as a singular profession, Oldenziel shows more nuance and fracturing within it, distinguishing between fields and levels in the corporate hierarchy.[58]

Connell and Messerschmidt expanded the theory to allow for multiple hegemonic masculinities in 2005, after Frehill's and Oldenziel's publications, but before Julia Kirk Blackwelder's *Electric City: General Electric in Schenectady.* In this work, Blackwelder

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[55] Angel Kwolek-Folland, *Engendering Business: Men and Women in the Corporate Office, 1870-1930* (Baltimore and London: Johns Hopkins University Press, 1994); Walter A Friedman, *Birth of a Salesman: The Transformation of Selling in America* (Cambridge, Mass: Harvard University Press, 2004); Alice Kessler-Harris, *Gendering Labor History*, The Working Class in American History (University of Illinois Press, 2007); Meyer, *Manhood on the Line: Working-Class Masculinities in the American Heartland*.
[56] Bix, *Girls Coming to Tech!: A History of American Engineering Education for Women*; Betty Reynolds and Jill Tietjen, *Setting the Record Straight: The History and Evolution of Women's Professional Achievement in Engineering* (Denver, CO: White Apple Press, 2001); Margaret E. Layne, *Women in Engineering: Pioneers and Trailblazers* (New York: American Society of Civil Engineers, 2009).
[57] Frehill, "Gendered Construction."
[58] Ruth Oldenziel, *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999).

shows that, from 1892 to 1950, the company actively promoted an engineering-centered corporate culture that restricted top technical ranks to men who were considered white and labeled women's jobs differently to maintain a gendered hierarchy. Employee experiences off the job indicate that GE pushed for manliness in all realms; however, there were class differences as well as differences between prescription and reality. Blackwelder's book highlights the idea that engineers' employers were complicit in this limiting professionalization, and it theorizes that the masculinity of the large corporation differed from masculinities analyzed in other arenas. Her book recognizes varieties in hegemonic masculinities, but it does not make this its focus.[59]

This dissertation also contributes to scholarship in STS on race and technology. Such work has analyzed Black participation in technological design and use, and it has considered why so little has been written in this area.[60] Several studies have shown that barriers to participation have been structural as well as cultural.[61] These scholars use critical race theory, which views race as a social construction that interacts with other social constructions like gender or class, or even as a totalizing "metalanguage" that influences all other social constructions and can lead one to overlook power dynamics within racial groups.[62] Scholarship in this area has highlighted the protean nature of whiteness, which

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[59] Julia Kirk Blackwelder, *Electric City: General Electric in Schenectady*, Kenneth E. Montague Series in Oil and Business History (College Station: Texas A&M University Press, 2014).
[60] Rayvon Fouché, *Black Inventors in the Age of Segregation: Granville T. Woods, Lewis H. Latimer & Shelby J. Davidson* (Baltimore: The Johns Hopkins University Press, 2003); Bruce Sinclair, ed., *Technology and the African-American Experience: Needs and Opportunities for Study* (Cambridge, MA: The MIT Press, 2004); Ron Eglash, "Broken Metaphor: The Master-Slave Analogy in Technical Literature," *Technology and Culture* 48, no. 2 (2007): 360–69.
[61] Sinclair, *Technology and the African-American Experience: Needs and Opportunities for Study*; Venus Green, *Race on the Line: Gender, Labor, and Technology in the Bell System, 1880–1980* (Durham, NC: Duke University Press, 2001); Slaton, *Race, Rigor, and Selectivity in U. S. Engineering*.
[62] Higginbotham, "African-American Women's History and the Metalanguage of Race"; Carby, "On the Threshold of the Women's Era: Lynching, Empire and Sexuality in Black Feminist Theory"; Roediger, *The Wages of Whiteness*; Stephanie McCurry, *Masters of Small Worlds: Yeoman Households, Gender*

has appropriated the universal *and* has made use of particularity to maintain hegemony.[63] My work contributes to this scholarship by inspecting white masculinities as dynamic social constructions in order to analyze structural and cultural barriers that limited Black participation in the TVA's technological workforce.

This work also contributes to southern studies, scholarship that has grappled with gendered and racial power in a complex system dominated by both whiteness and masculinity. Scholarship in this area has also emphasized the importance of place, geographically and culturally.[64] Just as little work has included the South in engineering historiography, however, little has analyzed engineering culture in southern historiography.[65]

1.4.3 Overview of the Following Chapters

The dissertation is organized into two parts. "Part I: The Agency" looks at the 1933-1953 TVA overall and the identities of several engineering and administrative employees within it. "Part II: Harry A. Curtis" analyzes one exemplary TVA engineer during this time period. To orient the reader, the first two chapters are devoted to the historical development and

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Relations, and the Political Culture of the Antebellum South Carolina Low Country (Oxford University Press, 1997); Peter Kolchin, "Whiteness Studies: The New History of Race in America," *The Journal of American History* 89, no. 1 (2002): 154–73; Michelle Brattain, *The Politics of Whiteness: Race, Workers, and Culture in the Modern South* (Athens, Ga.: Univ. of Georgia Press, 2004); Martin Summers, *Manliness and Its Discontents: The Black Middle Class and the Transformation of Masculinity, 1900-1930*, Gender & American Culture (University of North Carolina Press, 2004).

[63] Robyn Wiegman, "Whiteness Studies and the Paradox of Particularity," *Boundary 2* 26, no. 3 (1999): 115–50.

[64] Jacquelyn Dowd Hall, *Revolt against Chivalry: Jessie Daniel Ames and the Women's Campaign against Lynching* (Columbia University Press, 1993); Carby, "On the Threshold of the Women's Era: Lynching, Empire and Sexuality in Black Feminist Theory"; Gilmore, *Gender and Jim Crow: Women and the Politics of White Supremacy in North Carolina, 1896-1920*; Toby L Ditz, "The New Men's History and the Peculiar Absence of Gendered Power: Some Remedies from Early American Gender History," *Gender & History* 16, no. 1 (2004): 1–35.

[65] Miller, *Engineering Manhood*.

expressions of each of the four masculinities used in analysis. Chapter 1 discusses white-collar masculinity as a pure archetype. Chapter 2 discusses physical masculinity as a second, generally opposing archetype. It also describes frontier masculinity and military masculinity, each of which can be understood as a unique hybrid of white-collar and physical masculinities.

Chapters 3 through 5, the remaining chapters in Part I, are dedicated to the ways in which TVA employees performed traits of each masculinity. Chapter 3, "White-Collar Masculinity at TVA," shows strong identification with several traits of white-collar masculinity. It also discusses the important role of systemic sexism and racism in allowing TVA employees to exhibit white-collar masculine traits. Chapter 4, "Physical Masculinity at TVA," shows enthusiastic association with some traits of physical masculinity but its frequent taming by white-collar masculine values. Chapter 5, "The TVA and 'Men of the Border': Frontier and Military Masculinities," shows that TVA employees and their common institutional "mythology"[66] highly adhered to frontier masculinity, while military masculinity never gained much traction.

"Part II: Harry A. Curtis" predominantly uses an autobiographical manuscript and correspondence to analyze this TVA engineer, consultant, and Board member in light of the four masculinities described and used in Part I. An introductory section provides a brief biography of the man before Chapter 6, "Curtis and White-Collar Masculinity," proceeds chronologically through his life to chart performances of white-collar masculinity. Chapter 7, "Curtis and Physical Masculinity," returns to his childhood and proceeds chronologically

[66] Hargrove, *Prisoners of Myth*.

with an eye on the same man's performances of physical masculinity. Chapter 8, "Curtis' Masculinities in Action: Hybrid Masculinities & Examples" gives the same treatment using frontier masculinity, and then military masculinity, and finally provides three small case studies in which Curtis drew on multiple masculinities simultaneously.

I organized the dissertation this way in large part due to the nature of its primary sources. The oral histories on which Chapters 3-5 mainly rely were all performed between 1981 and 1983, providing perspectives at one narrow sliver of time. Interviewees generally discussed their recollections of eras, or of their TVA careers as a whole; when they mentioned historic events, specific memories were fuzzy and occasionally inaccurate. The autobiographical manuscript of Harry A. Curtis was likewise written at certain points in time, looking back on his life and his career, and it exhibits the same advantages and disadvantages of personal memory that the oral histories do.

I also organized the dissertation in this way, rather than chronologically, because my findings showed surprising consistency in identities across time. The 'personal memory from one point in time' element could make one suspect that this is merely the *appearance* of consistency; however, there is support for the claim of true consistency. In *TVA and Black Americans*, Nancy Grant convincingly shows that TVA employment, culture, and policy remained remarkably static from 1933 well through the 1950s.[67] Erwin Hargrove's *Prisoners of Myth* also generally supports this.[68] Interviewees frequently emphasized

[67] Grant, *TVA and Black Americans*.
[68] Hargrove, *Prisoners of Myth*.

tenacious elements of TVA institutional identity and practice, and many of these correlated to long-expressed and celebrated masculine traits.

Finally, I feel that this format is particularly conducive to my ultimate goal, that of "describing absences" of those who were not believed to sufficiently perform these masculinities. As Amy Slaton writes in the introduction to *Race, Rigor, and Selectivity in U. S. Engineering*, when one takes on such a job, "This means that there are not always prominent individuals or seminal events that might neatly delimit the narrative. Instead, the focus is often on actions not taken and on social and cultural developments that failed to come about."[69] My hope is that, instead of providing another historical narrative of the TVA, I can increase our understanding of its identity as an exemplary engineering-centered institution and those identities within it.

[69] Slaton, *Race, Rigor, and Selectivity in U. S. Engineering*, 205.

PART I

CHAPTER 2. THEORY: WHITE-COLLAR MASCULINITY

This chapter describes 'white-collar masculinity' as I use it to assess actors in this dissertation. I create something slightly novel in claiming it as a 20th-century archetype, or an idealized white masculinity upon whose traits real, hybridized masculinities drew in their construction. However, the collection of traits whose performance embody white-collar masculinity resemble collections ascribed to masculinities that scholars have previously identified or modeled, and they likely appear familiar in the imagination of the reader. I provide a brief overview of these similar masculinities and describe prominent traits of white-collar masculinity. I then provide some context for the TVA's relationship with this masculinity by briefly describing the relationship that had developed between U.S. engineering and white-collar masculinity by 1933.

2.1 About White-Collar Masculinity

2.1.1 Terminology

The masculine archetype labeled "white-collar masculinity" in this work could easily go by a variety of names, including 'upper class,' 'bourgeois,' or 'professional' masculinity. It's rooted in and similar to several other masculinities that others have identified and labeled. Sometimes these masculinities have simply been identified as *the* 'American hegemonic masculinity,' being so closely identified with straight, white, middle- to upper-class, native-born men from the northern U.S., since—as Kimmel claims—this has often

been the masculinity against which other groups were defined (that is, "as everything 'straight white men' were not").[70]

Specific names have been used for masculinities that contributed to and closely resemble white-collar masculinity. R. W. Connell discusses the "gentry masculinity" of 18th century North Atlantic world, whose hegemonic status waned with the waning power of the landowning elite and the rise of the bourgeoisie.[71] E. Anthony Rotundo names the hegemonic masculinity of colonial New England "communal manhood," since it prioritized "public usefulness" over economic success and family status in the community over one's individual achievements.[72] Gail Bederman and others identify "manliness" as the hegemonic or ideal masculinity of the Victorian era. This was not far from 'communal manhood' in its emphasis on patriarchal magnanimity, but it also incorporated individual qualities of sexual self-restraint and a powerful will.[73]

The archetype of 'white-collar masculinity' that I discuss here is most strongly rooted in and most similar to Victorian 'manliness.' In fact, the two terms are interchangeable if one is only discussing masculinities *as a collection of traits*. I coin a new term for white-collar masculinity because it is different in *how it functions*: 'Manliness' is believed to have functioned as *the* overarching hegemonic masculinity for Western culture in the Victorian

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[70] Michael S. Kimmel, *Manhood in America: A Cultural History*, 3rd ed (New York: Oxford University Press, 2012), 4; R.W. Connell, *Masculinities*, 2nd ed. (Berkeley and Los Angeles, CA: Polity Press, 2005); E. Anthony Rotundo, *American Manhood: Transformations in Masculinity from the Revolution to the Modern Era* (New York, NY: BasicBooks, 1993), ix–x, 7; J.A. Mangan and J. Walvin, *Manliness and Morality: Middle-Class Masculinity in Britain and America, 1800-1940* (Manchester University Press, 1987); Ruth Oldenziel, *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999); E.J. Gorn, *The Manly Art: Bare-Knuckle Prize Fighting in America* (Cornell University Press, 1986).
[71] Connell, *Masculinities*.
[72] Rotundo, *American Manhood*; Kimmel, *Manhood in America*.
[73] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995); Mangan and Walvin, *Manliness and Morality*.

era. If one successfully performed 'manliness' in that era, it is claimed, he would undoubtedly be perceived as the quintessential man.[74]

By 1930, 'white-collar masculinity'—that very similar collection of traits—was one archetype *contributing to* a hegemonic masculinity in a given context. Although American corporations promoted this collection of 'manly' traits in the workplace well into the 20th century,[75] an American performing *only* 'white-collar masculinity' at this point would almost certainly not be considered the ultimate/hegemonic 'man.'[76] Each hegemonic masculinity in this time and place (in midcentury America, and more specifically in the 1933-1953 TVA) could be described as some hybrid of two archetypes--white-collar masculinity and physical masculinity--plus a physical-cultural context (such as the Western frontier). As a result, 'manliness' and 'white-collar masculinity' are different in how they operate. Because of the similarity of their associated traits, however, I will reference descriptions of 'manliness' frequently when discussing the traits of white-collar masculinity.

A few such hybridizations are worth noting here. Michael Kimmel and Rotundo both describe the development of 'self-made manhood' over the course of the 19th century, as American hegemonic masculinity shifted away from Victorian 'manliness' in response to changes in the political economy. Rather than emphasizing one's place in his community,

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[74] 'Manliness' was explicitly a set of qualities to which one aspired. Bederman contrasts this with 'masculinity,' a set of natural or inherent characteristics that all men were believed to display by default. Bederman, *Manliness and Civilization*, 18.
[75] Angel Kwolek-Folland, *Engendering Business: Men and Women in the Corporate Office, 1870-1930* (Baltimore and London: Johns Hopkins University Press, 1994).
[76] Bederman, *Manliness and Civilization*, especially p. 19; Rotundo, *American Manhood*, 283.

this masculinity emphasized individual achievement and economic success, thus incorporating certain elements of physical masculinity.[77]

In her study of Cold War era intellectuals, Suzanne Clark coins the term 'hypermasculinity,' which she describes as "a male gendering elevated above all questions of marked gender. That is, far from advocating openly a manliness that might have been contested, they took their own whiteness and maleness, together with American authenticity, as unmarked, neutral positions of superior reason."[78] Clark depicts what my model would describe as a shift away from physical masculinity and very close to white-collar masculinity; however, this was still on a spectrum of hybrids.

I admit that 'white-collar' may not be the perfect term for this masculine archetype. The common use of "white collar" applies to specific forms of employment, whereas many traits of white-collar masculinity go beyond one's employment, and some traits actively reward a disregard for one's employment status or any need for employment and income.

The term, however, is the best I have found so far. On a very basic level, the concept of 'white collar' describes one's ability keep his collar white and clean.[79] This implies that he works at a desk, but it could also be stretched to apply to men who do not work at all, per se. Those with inherited wealth, for example, could perform this masculine archetype perfectly without earning a cent through their labors. In fact, part of this archetype involves

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[77] Kimmel, *Manhood in America*; Rotundo, *American Manhood*.
[78] Suzanne Clark, *Cold Warriors: Manliness on Trial in the Rhetoric of the West* (Southern Illinois University Press, 2000), 3.
[79] More specifically, it references the tendency for office staff to wear shirts with white collars; however, this is based on and limited to the material reality of keeping the shirt clean. Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997).

one's disinterest in earning money relative to his passion for intellectual pursuits, and this disinterest is ultimately achieved by a lack of *need* to earn money.

On a deeper level, 'white collar' works well because it ultimately involves 'whitewashing' the physical violence and greed upon which this masculine archetype is built. A man performing white-collar masculinity is able to perform peace and magnanimity, for example, because he has a violent army and the force of law supporting and protecting him at all times. Similar violence and technologies have historically helped consolidate his power as much as they maintain it. In short, it's not that such men have no blood on their hands (or collars); it's that they delegate the 'dirty work' to others in the past and present. I discuss this more below.

2.1.2 Traits of White-Collar Masculinity

One can generalize that all of these traits associated with white-collar masculinity involve or overlap with an accumulation or expression of power through 'upper class' means. As a result, a performance of white-collar masculinity generally involves luxuries—or, at least, things that not everyone has the resources to develop, obtain, or maintain.

One very important trait of the white-collar masculinity archetype is an association with expertise.[80] This is closely and logically linked to another trait of this archetype:

[80] Bederman, *Manliness and Civilization*; Rotundo, *American Manhood*; Unlike physical and frontier masculinities, one performing white-collar masculinity is not as focused on proving his masculinity through his pastimes. In certain contexts, this masculinity was so secure, and expertise was so important to it, that one could prove his masculinity almost solely in the workplace (for example, through a high-ranking or respectable job). Kimmel emphasizes this connection with the workplace by contending that the men who constructed major institutions in the 19th century built their beliefs and customs into them. "Since we inhabit these professional and public institutions," he writes, "nineteenth century manhood of the Northern middle-class variety is still impinging on us daily." See Kimmel, *Manhood in America*, 8–9.

learning, which can be displayed by showing interest in and fulfillment from learning, or by simply appearing to be learned.[81] Expertise is gained through learning, and one can learn in many ways. White-collar masculinity is much more closely associated with formal education than with informal or experiential learning; however, expertise is of merit in this archetype if it is valuable enough to help a man hold power, regardless of how it was learned.

This trait gained power as it gained economic importance. Rotundo notes that the ranks of "salaried, nonpropertied workers (virtually all white-collar)" in the U.S. expanded eightfold between 1870 and 1910, to the point that twenty percent of U.S. male workers in 1910 were white-collar.[82] "[C]orporations hired their own corps of experts from new professions such as engineering and accounting," Rotundo writes, emphasizing both the scale and novelty of such expertise.[83] Fittingly, in a historical overview of global hegemonic masculinity, Connell identifies a split within hegemonic masculinity that developed in the 19th and 20th centuries with the development of educational systems and the organized management of technical knowledge. The rift occurred "between forms of masculinity organized around direct domination (e.g., corporate management, military command) and forms organized around technical knowledge (e.g., professions, science)," Connell writes.[84] Despite this "polarity…neither version has succeeded in displacing the

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[81] This is closely related to a major social function of **professional societies**. Membership in a professional society has historically nominally been limited to those with expertise in a given field; however, historians like Oldenziel describe professionalization as "a form of occupational control" to maintain privilege hidden "behind the cloak of political disinterestedness and objectivity." (Oldenziel, *Making Technology Masculine*, 167). Here, the privilege is one's ability to 'appear learned,' relative to those not allowed in the society for any reason.
[82] Rotundo, *American Manhood*, 248.
[83] Rotundo, 248.
[84] Connell, *Masculinities*, 165.

other," and the two "coexist as inflections or alternative emphases within hegemonic masculinity."[85] The same is true within the archetype of white-collar masculinity, and I believe there's good reason for that: Ultimately, any masculinity involves wielding power, and white-collar masculinity involves wielding power without direct physical force.[86] Management and expertise are two different means to the end of personally accumulating such power.

Displaying technical expertise, then, is just one means of performing white-collar masculinity, but it is an exceptionally powerful means. I believe that that's because it straddles the archetypes of both white-collar and physical masculinity in its means of accumulating power. Scholars have pointed to the social power of possessing "abstract and generalizable technical knowledge," especially when compared to the rather specific technical knowledge of manual workers.[87] It's not limited to social power, however. Technology is a literal expansion of one's physical power. As a result, the control over technology is very much a literal, physical expansion—not an abstraction—of one's personal ability to wield physical power. I discuss this further in Chapter 2, "The TVA and Physical Masculinity." I point it out here only to emphasize the importance of technical expertise within the 'white-collar' trait of expertise.

Another major trait of white-collar masculinity is the performance of impartiality. This trait goes back to pre-20th century expressions of masculinity, and particularly

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[85] Connell, 194, 165.
[86] Although Connell uses the words "direct domination," such domination is not *that* direct relative to physical masculinity. Even military commanders who incite physical force do so by giving orders.
[87] Judy Wajcman, *Feminism Confronts Technology* (Pennsylvania State University Press, 1991), 39; See also Cynthia Cockburn, *Machinery of Dominance: Women, Men and Technical Know-How* (London: Pluto, 1985).

Victorian manliness, which was more concerned with distinguishing itself from boyhood than from womanhood.[88] It did so (the former) in large part by emphasizing [traits that one might associate with *maturity* but were then understood as] a man's moral qualities of self-control and self-denial, in the face of everything from sexual desire to political passion.[89]

Although less emphatic about self-denial than Victorian manhood, white-collar masculinity maintains, under the umbrella of impartiality, the trait of a disinterest in money.[90] One may show a disinterest in money due to magnanimity (discussed below) or a relative preoccupation with intellectual pursuits or other interests Regardless, it must be noted that one generally must have some form of financial security in order to show such disinterest in money. As we will see in Chapter 3, "The TVA and Physical Masculinity," one trait of physical masculinity is greed or explicit concern for money, which is ultimately rooted in the relatively low blue-collar wage. (This direct counterpoint, in which two opposite traits are both considered masculine, is a classic illustration of masculinity's protean ability to claim whatever traits are advantageous—similar to masculinity's claim to both sides of the mind/body duality in claiming "brains" and "brawn.")

The trait of impartiality also includes claims to rationality and reason, or a resistance to being swayed by passions or politics.[91] This extended into a growing association with cold analytical reasoning, which is commonly associated with men in the West and considered an opposite to the natural and emotional elements commonly associated with

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[88] Kimmel, *Manhood in America*, 20–22, 89; Rotundo, *American Manhood*, 20–22.
[89] Kimmel, *Manhood in America*; Bederman, *Manliness and Civilization*; Rotundo, *American Manhood*.
[90] Connell, *Masculinities*; Rotundo, *American Manhood*.
[91] Connell, *Masculinities*; Rotundo, *American Manhood*; Bederman, *Manliness and Civilization*; Wajcman, *Feminism Confronts Technology*.

women.[92] This likely grew with the rise of the technocratic 'branch' of hegemonic masculinity to which Connell alludes.[93]

A dedication to meritocracy is another trait of white-collar that could fall under the umbrella of impartiality. With the expansion of rights for white American men in the early 19th century, men found themselves freed from a fixed place in a hierarchy (or, for those on prestigious rungs, unable to rely on it), and individual achievement became a mark of one's masculinity.[94] While the archetype of physical masculinity applauds direct (and sometimes dishonest) competition in the struggle for success or notoriety, white-collar masculinity assumes that one's excellence will be apparent, and that it will be rewarded without any need for combat with others. A corollary assumption is that, if one has succeeded, it is purely because one has been rewarded for his excellence in a just manner.[95]

Magnanimity is another important trait of white-collar masculinity. It's partly rooted in the Victorian ideal of manly self-denial,[96] which developed into in the altruism that was held as "one of the hallmarks of professional work" by the 20th century.[97] This was not the altruism that just anyone could display, however: I use the term "magnanimity" because one often visualizes it as coming from a place of power. Patriarchal leadership, most explicitly lauded in Rotundo's "communal manhood" of colonial New England, persisted,

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[92] Clark, *Cold Warriors: Manliness on Trial in the Rhetoric of the West*; Wajcman, *Feminism Confronts Technology*.
[93] Connell, *Masculinities*.
[94] Kimmel, *Manhood in America*; Lisa M Frehill, "The Gendered Construction of the Engineering Profession in the United States, 1893–1920," *Men and Masculinities* 6, no. 4 (2004): 383–403; Rotundo, *American Manhood*.
[95] See the logic behind the historic "weed out" process in college engineering programs, Frehill, "Gendered Construction," 398–99.
[96] Bederman, *Manliness and Civilization*; Kimmel, *Manhood in America*.
[97] Cowan, *Social History of American Technology*, 146.

and it appears to have done so in the lauded trait of magnanimity associated with Victorian manliness and white-collar masculinity.[98] This included protection of and support for the vulnerable such as women and the poor[99]--and, as Bederman points out, "this unselfish, charitable manliness implied a certain authority over the lower orders."[100] (It is occasionally referred to as "noblesse oblige."[101]) Magnanimity also included cooperation, which was lauded perhaps in part for this patriarchal spirit and in part for one's dedication to meritocracy and expertise.[102] After all, there is no need for self-promotion or overt competition if the quality of a man's (expert) work is able to speak for itself.[103]

It might again be noted that these expressions of magnanimity are all status symbols because one is showing he can afford them: One is unlikely to cooperate unless, confident in his own excellence and the pure meritocracy of a system, one feels he can afford to. Likewise, one must have the power and resources to be magnanimous before one can choose to act magnanimously. It is also interesting to note that this trait of magnanimity, and especially of cooperation, directly contrasts with markers of physical and frontier masculinity, which are rooted in less 'opulent' circumstances. Rooted in blue-collar culture, physical masculinity often lauds 'base passions' like greed or self-interest as well as practical 'breadwinner' concerns (like one's paycheck) rather than ideals of generosity.[104] Rooted in boot-strapping 'cowboy' imagery, frontier masculinity is more

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[98] Rotundo, *American Manhood*; Connell, *Masculinities*; Kimmel, *Manhood in America*; Bederman, *Manliness and Civilization*.
[99] Bederman, *Manliness and Civilization*, 62, 65, 172.
[100] Bederman, 172.
[101] Bederman, 172; Nancy L. Grant, *TVA and Black Americans: Planning for the Status Quo* (Philadelphia: Temple University Press, 1990), xxi.
[102] Rotundo, *American Manhood*; Bederman, *Manliness and Civilization*.
[103] Bederman, *Manliness and Civilization*.
[104] John F. Kasson, *Houdini, Tarzan, and the Perfect Man: The White Male Body and the Challenge of Modernity in America* (New York: Hill and Wang, 2001); Bederman, *Manliness and Civilization*.

concerned with independence, expecting each to make it on his own without cooperation (or at least cooperative systems).[105] Military masculinity, on the other hand, draws on these characteristics of white-collar magnanimity; however, its expressions of self-sacrifice and cooperation are ultimately out of dedication to an institution (such as a state or a bureaucratic organization). These relationships between magnanimity, cooperation, and the other masculinities in this dissertation will be discussed further in later chapters.

Although each masculinity is arguably a combination of ideals, the trait of idealism is strongly associated with intellectualism and thus white-collar masculinity for several reasons. Most immediately, idealism involves the intellect in that it is a dedication to normative models (or ideals) that are separated or abstracted from material reality. Although an idealist may be passionate[106] about his ideals, that is a separate issue. The dichotomy here is between the dedication to different epistemological frameworks--a pragmatic dedication to messy reality or an idealist dedication to a model--however impartial or passionate either side might be. Further, in their normative nature, these ideals tend to lead one to exhibit magnanimity, a patriarchal generosity, which is another marker of white-collar masculinity.

Fatherhood is one particularly notable expression of magnanimity and a trait of white-collar masculinity worth discussing on its own. It is rooted in the pride that one feels in his progeny *as a reflection of* himself and his own qualities.[107] It is also rooted in one's duties to his race or civilization or society. A self-conscious emphasis on fatherhood arose around

[105] Bederman, *Manliness and Civilization*.
[106] a major trait of physical masculinity
[107] Bederman, *Manliness and Civilization*, 208.

the turn of the 20th as men sought "an active role" in childrearing in order to balance out the feminizing influence of mothers and women teachers.[108] Bederman claims that, in light of millennialism, the eugenics movement, and concerns over "race suicide" (and wide-ranging developments interpreted as evidence of racial decline), fatherhood at the turn of the 20th century was "[t]he key to reconciling male sexuality with the wider public good" and "the imperative to achieve white racial supremacy."[109] Further discussion of white-collar masculinity as a highly raced performance appears below.

One's relationship with one's own father is also important here, although it is not a trait, per se, that one might perform to prove masculinity. In his discussion of fatherhood's influence on the need to prove one's manhood, Timothy Beneke draws heavily on psychoanalysis, including works of Sigmund Freud and Nancy Chodorow.[110] Beneke claims that because they are parented mainly by women in childhood, boys and girls seek safety in and to identify with their mothers.[111] When a boy subsequently realizes he will become a man and shifts towards identifying with his father, it is "a difficult, wrenching trial."[112] Citing Freud, Beneke explains that fighting off the desire to identify with and seek safety in their mothers forms the basis for the stress and distress that the boys feel they must overcome to prove manhood.[113] Although this is used to explain Beneke's "compulsive masculinity"[114]—a masculinity much more closely associated with the 'physical masculinity' discussed here—we may assume that a boy tends to be very aware

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[108] Bederman, 16–17.
[109] Bederman, 206.
[110] Timothy Beneke, *Proving Manhood: Reflections on Men and Sexism*, Men and Masculinity (Berkeley: University of California Press, 1997), 35.
[111] Beneke, 49–50.
[112] Beneke, 50.
[113] Beneke, 55–56.
[114] Beneke, 2–4, 34–36.

of this shift in identity (and, often, ambition or role modeling) towards his father when he realizes his impending adulthood. Identifying one's parentage and racial origins was also a common Victorian method for establishing one's manly status, as Bederman points out when discussing the Victorian novel.[115]

Although I have pointed to this before as a reflection of the other traits, an association with a high socioeconomic class is an important trait of white-collar masculinity in its own right. This ultimately boils down to possessing or *appearing* to possess wealth. I note again that this is not about *seeking* wealth (a trait of physical masculinity): if one already has wealth, one does not need to seek it, so an apparent lack of concern for money is a more convincing performance of this trait. An important performance of this trait is through manners: following cultural cues by doing what a society's upper class deems appropriate or polite. This related to the self-control lauded in Victorian manliness; however, it has a strong association with control over lower classes.[116] From the 1800s through the early 1900s, the US middle class differentiated itself from other classes by emphasizing its gentility and respectability.[117] In that same period, middle-class reformers in the U.S. and Britain sought to teach lower classes their gender ideals "as a corrective to prevailing social problems," promoting their Victorian ideals of "manliness" through churches, schools, children's books, and philanthropic organizations.[118] While some might have interpreted

[115] Bederman specifically focuses on the autobiography of Teddy Roosevelt, who was considered a paragon of manliness in his lifetime. Bederman, *Manliness and Civilization*, 178.
[116] Bederman, *Manliness and Civilization*.
[117] Bederman, 11–12; Frehill, "Gendered Construction," 389.
[118] Mangan and Walvin, *Manliness and Morality*, 2, 4.

this as social uplift, others associated it with "taming potentially disruptive working-class boys" who might one day challenge authority.[119]

Whiteness is another major trait of white-collar masculinity. As with each other trait discussed, it is possible to successfully perform this masculinity without performing this one trait; however, it is vital to recognize that white-collar masculinity is highly raced. This masculinity was very strongly identified with civility, and any white American mention of 'civilization' historically implied 'white'; indeed, Bederman writes that the two "were almost interchangeable" around the turn of the 20th century.[120] Roediger explains that this developed from European American settlers' defining manly 'civilization' as a negation of the Native American 'savagery' that they perceived and imagined, which they later extended to the Black Americans.[121] Civilization simultaneously implied fixed and highly distinct gender roles. In the Social Darwinist worldview at the turn of the 20th century, the more a race advanced, the more its genders distinguished themselves. Black and Native American races, considered less advanced, were believed to exhibit more physical and behavioral similarities between their men and women than did the white race.[122] As Bederman writes, "Race and gender have been interwoven so tightly in discourses of the civilized and the primitive that they have been impossible to disentangle…"[123]

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[119] Bederman, *Manliness and Civilization*, 100.
[120] Bederman, 50.
[121] David R. Roediger, *The Wages of Whiteness: Race and the Making of the American Working Class* (New York: Verso, 1991).
[122] Bederman, *Manliness and Civilization*; Roediger, *The Wages of Whiteness* This relates to the tremendous racial import of feminizing Black men and masculinizing Black women. In assuming that 'a man' by white-collar masculine standards was white, white-collar masculinity maintained this belief.
[123] Bederman, *Manliness and Civilization*, 239.

In many ways, Black culture was likened to a 'former' or older culture that white culture had previously passed through in its development. White Americans often assumed that no nonwhite person could reach the level of intelligence or culture displayed by a white adult.[124] Roediger writing of white colonial American/English culture, provides an explanation well-suited to the white-collar masculinity that hailed from it: "[A]mong the Anglo-American bourgeoisie…blackness came to symbolize that which the accumulating capitalist had given up, but still longed for. Increasingly adopting an ethos that attacked holidays, spurned contact with nature, saved time, bridled sexuality, separated work from the rest of life and postponed gratification, profit-minded Englishmen and Americans cast Blacks as their former selves…All of the old habits so recently discarded by whites adopting capitalist values came to be fastened onto Blacks."[125]

We have already noted the concept of fatherhood as a service to the (white) race, but it must be emphasized that this was an explicit part of white-collar masculinity, presented in line with other traits it lauded. President Theodore Roosevelt, considered an exemplar of white masculinity for his time, actively promoted white fatherhood by linking such traits: "Denouncing the selfish wish to live for individual pleasure," Bederman writes, "TR called instead for 'the strong racial qualities without which there can be no strong races'—courage, high-mindedness, unselfishness…A man or woman who…deliberately avoided having children was 'in effect a criminal against the race…'"[126] These ideas were close enough to widespread ideology that they strongly resonated with white Americans at the

[124] Bederman, 93.
[125] Roediger, *The Wages of Whiteness*, 95.
[126] Theodore Roosevelt, qtd. and discussed in Bederman, *Manliness and Civilization*, 202.

time,[127] and they surely contributed to the general valuation of fatherhood as a performance of white-collar masculinity through at least the mid-20th century.

One's dedication to meritocracy was also frequently informed by racism around this time. Teddy Roosevelt, for example, believed that Black American men should be allowed to compete fairly with white American men (for example, in politics and in business) because he was confident that white men were superior and would win. This, he believed, would serve as a proxy for a violent race war.[128]

This combination of racist and meritocratic ideals might shed light on an important point upon which I will elaborate later in this chapter: White-collar masculinity is *inherently* reliant on systemic racism, and it inherently supports systemic racism. Without systemic racism, those who most strongly perform white-collar masculinity would be far less able to afford dedication to meritocracy (and the assumption that they reached their station purely on merit); to be magnanimous or cooperative; or to inhabit or associate themselves with the upper class, for example. Connell notes that gentry masculinity of the 1700s "involved a much more brutal relationship" with lower classes, in which "Control was exerted by evictions, imprisonment, the lash, transportation and hangings. Applying this violent discipline was not a specialized profession. It was an ordinary part of local administration…."[129] By the time white-collar masculinity developed, such brutality at the hand of the upper classes was no longer acceptable (much less lauded as masculine). They could rely on those in "specialized profession[s]," generally in the lower classes, to "exert"

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[127] Bederman, *Manliness and Civilization*.
[128] Bederman, 197–98.
[129] Connell, *Masculinities*, 190; See also Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020), esp. pp. 209-210.

this "control"—or even to knowingly direct it. Further, they were able to rely on the long history of such brutality that made such control—and their separation from the brutal aspects of it—possible. The end result is that one performing white-collar masculinity generally acted 'civil' to individuals of other races in direct interaction because they could maintain power through systemic racism (or delegated racism). This is what I mean when I used the term 'whitewashing' in discussing the term 'white-collar,' and this is another important way that the traits of white-collar masculinity were luxuries that not all could afford.[130]

Appearing a biological man—though it seems redundant at first glance—is another important trait of white-collar masculinity. It is a trait that all masculinities share.[131] It is especially important to emphasize that all the above traits of white-collar masculinity were believed to be inherently associated with the biological male sex and were not simply laudable traits.[132] This is because—gendering being a rather fluid, socially-constructed, and historical process—many of those traits might be considered laudable, gender-neutral traits today.[133] Patriarchal magnanimity, for example, was assumed male as part of a long tradition of "domestic authority over women."[134] Expertise was likewise limited to biological men, as people generally assumed that women were biologically incapable of so

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[130] Connell, *Masculinities*. See especially pp. 186 and 200.
[131] (And, like each of the other traits, it's not always absolutely necessary that one must embody this to be considered a 'man' in the value system of this archetype, if they can perform an adequate number of the other traits very well.)
[132] Bederman, *Manliness and Civilization*; Judith Butler, *Gender Trouble: Feminism and the Subversion of Identity*, Thinking Gender (Routledge, 1990).
[133] Michael Kimmel, "Human Beings: An Engendered Species," in *The Gendered Society* (New York: Oxford University Press, 2015), 1–17; Alice Kessler-Harris, *Gendering Labor History*, The Working Class in American History (University of Illinois Press, 2007); Connell, *Masculinities*; Butler, *Gender Trouble: Feminism and the Subversion of Identity*.
[134] Connell, *Masculinities*, 190.

much intellectual development.[135] Further, regardless of capacity, women were generally excluded from the very institutions—college programs, workplaces, professional societies—in which they might accumulate or display expertise.[136] Impartiality was also gendered male, alongside the longstanding belief that men were rational while women were emotional, and that women lacked the rationality necessary for impartiality.[137] These underlying assumptions and limitations were generally not performed through direct conflict, however. White-collar masculinity relied on systemic gender bias, much as it did on systemic racism. A "code of honour" towards women (or at least women in similar social strata) had been ingrained in elite masculinities for centuries.[138] Again, this 'whitewashed' the extremely longstanding forces of custom, domestic domination, and law.[139]

2.1.3 Engineering and White-Collar Masculinity

American engineers consciously modeled themselves on established professions from the 19th-century development of the engineering profession onward.[140] This involved the adoption and performance of white-collar masculinity in several ways. Many boosted engineering's association with expertise by linking it to higher education from the late

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[135] Bederman, *Manliness and Civilization* [Also cite recent speech by Ivy League president that mentioned women's intellectual deficiency.].
[136] Frehill, "Gendered Construction"; Amy Sue Bix, "From 'Engineeresses' to 'Girl Engineers' to 'Good Engineers': A History of Women's U.S. Engineering Education," *NWSA Journal* 16, no. 1 (2004): 27–49; Kimmel, *Manhood in America*; Rotundo, *American Manhood*.
[137] Connell, *Masculinities*; Rotundo, *American Manhood*.
[138] Connell, *Masculinities*, 190; Bederman, *Manliness and Civilization*.
[139] Gayle Rubin, "The Traffic in Women: Notes on the 'Political Economy' of Sex"," in *Toward an Anthropology of Women*, ed. Rayna Reiter (New York: Monthly Review Press, 1975), https://genderstudiesgroupdu.files.wordpress.com/2014/08/the-rraffic-in-women.pdf; Connell, *Masculinities*.
[140] Frehill, "Gendered Construction"; Cowan, *Social History of American Technology*; Oldenziel, *Making Technology Masculine*.

1800s onward, encouraging the collegiate 'weed out' process, and establishing professional societies with membership standards.[141] The profession increasingly benefitted from its association with cold analytical reasoning as the latter gained value as a trait of white-collar masculinity.[142] At the same time, the engineering profession systematically excluded women, racial minorities, and lower classes from training, employment, and society membership, shutting some doors that had been open to them before the profession's rise.[143]

Oldenziel contends that, while theoretically downplaying the importance of one's familial lineage (in light of meritocratic values), the engineering profession "groomed young men" from various backgrounds "into a sense of class."[144] By 1900, the typical U.S. engineer dressed the same, "went to the same church, lived in the same neighborhoods, sent his children to the same schools, and came from the same ethnic stock as his employer."[145] Engineering journals frequently downplayed the importance of shop skills relative to "'cleaner' work involving less brawn and more brain,"[146] and, by 1920, engineers were frequently pulled into middle-management administrative positions (helping bridge the management-expert divide that Connell identifies).[147]

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[141] Frehill, "Gendered Construction"; Oldenziel, *Making Technology Masculine*; Cowan, *Social History of American Technology*.
[142] Wajcman, *Feminism Confronts Technology*.
[143] Oldenziel, *Making Technology Masculine*; Amy E. Slaton, *Race, Rigor, and Selectivity in U. S. Engineering: The History of an Occupational Color Line* (Cambridge, MA: Harvard University Press, 2010); Frehill, "Gendered Construction."
[144] Oldenziel, *Making Technology Masculine*, 54–55.
[145] Cowan, *Social History of American Technology*.
[146] Frehill, "Gendered Construction," 396.
[147] Cowan, *Social History of American Technology*; Connell, *Masculinities*.

As a cultural marker of the upper class, writers and visual artists depicted engineers as imaginative artists and leaders, and engineering reformers depicted engineering works as art.[148] Engineers also emphasized their magnanimity by stressing the social value of their work.[149] By the 1930s, for instance, "'Planning' became the buzzword for the 1930s, the means by which the survival of the nation state could be secured," and, "Of all the types, regional planning," like that of the TVA, "was the most influential and politically important."[150]

2.2 Conclusion

The white-collar masculinity discussed in this chapter is an archetype on which 20th-century men commonly drew to create a robust hybrid masculinity. It is closely associated with the Victorian hegemonic masculinity of 'manliness' that other scholars have discussed. It is associated with expertise, impartiality (including a dedication to ideals of meritocracy), magnanimity, idealism, a disinterest in money, fatherhood, a high socioeconomic class, and being considered white and male. The capacity to perform many of these traits is arguably a privilege; for example, performing traits like magnanimity and idealism relies on the direct physical violence of others, in the past or present, to support an unequal system. Engineers from the late 19th century onward consciously worked to associate themselves and their profession with traits we identify with white-collar masculinity. They did so especially by setting standards for higher education and expertise, selecting and grooming engineers to inhabit a relatively high socioeconomic class, and

[148] Oldenziel, *Making Technology Masculine*, 120–22, 124.
[149] Oldenziel, *Making Technology Masculine*.
[150] Grant, *TVA and Black Americans*, xxv, xxvii.

emphasizing the magnanimity of their work. This is one means by which engineers strengthened their collective position; however, as the next chapter shows, they used other means as well.

CHAPTER 3. THEORY: PHYSICAL MASCULINITY AND 'MEN OF THE BORDER'

This chapter describes the three other white masculinities by which TVA engineering identity is analyzed in this dissertation: physical masculinity, frontier masculinity, and military masculinity. Like white-collar masculinity, physical masculinity is modeled as an ideal that was rarely, if ever, performed in full; in many ways its associated traits stood in polar contrast to white-collar masculinity's. Frontier and military masculinities would have been easier to fully embody in part because they included traits associated with both white-collar and physical masculinities; additionally, each was linked to imagery of a particularly vivid liminal space. I discuss each masculinity in turn, describing its association with previously identified masculinities, several traits associated with it, and its relationship with U.S. engineering by 1933.

3.1 Physical Masculinity

3.1.1 Terminology

The archetype of "physical masculinity," as discussed here, overlaps with masculinities that theorists and historians have identified under various other terms. In Gail Bederman's *Manliness and Civilization*, many invoked the concept of "the natural man" or "primitive masculinity" as Victorian manliness incorporated elements of physical masculinity in the late 19th century, including themes of "frontier masculinity" discussed later.[151] E. Anthony

[151] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995).

Rotundo in *American Manhood* uses the label of "passionate manhood" to describe a similar shift in the same period, while Michael Kimmel calls it "passionate masculinity" in *Manhood in America*. Rotundo and Kimmel, however, mark this development as a shift from "self-made manhood" or "The Self-Made Man." As mentioned above, "self-made" masculinity was already a hybridization between white-collar and physical masculine archetypes. It was more explicitly focused on marketplace competition than was Bederman's Victorian manliness.[152]

3.1.2 The Development of Physical Masculinity

Applying the storyline of cultural "civilization" as an historical process, one could argue that physical masculinity was the original masculine archetype that was subsequently civilized—and many historical actors certainly did argue this.[153] By the 19th century, however, most of its traits were frowned upon by those in power, who dictated cultural prestige. These traits were deemed those of the lower classes, and they often appeared directly opposed to those of the hegemonic upper-class masculinity of the time. While aristocrats personally eschewed labor, urban centers began to develop what Max Weber would come to call 'the Protestant ethic,' a value whose various examples, R. W. Connell notes, were gendered masculine from the start.[154] While it was an upper-class status symbol to appear not to care about money, various economic and sociopolitical shifts throughout the 19th and early 20th centuries expanded the population of those men who focused on

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[152] Michael S. Kimmel, *Manhood in America: A Cultural History*, 3rd ed (New York: Oxford University Press, 2012); E. Anthony Rotundo, *American Manhood: Transformations in Masculinity from the Revolution to the Modern Era* (New York, NY: BasicBooks, 1993).
[153] Bederman, *Manliness and Civilization*; Kimmel, *Manhood in America*.
[154] R.W. Connell, *Masculinities*, 2nd ed. (Berkeley and Los Angeles, CA: Polity Press, 2005); Max Weber, *The Protestant Ethic and the Spirit of Capitalism*, Routledge Classics (New York: Routledge, 2001).

accumulating money—mostly through necessity, but also through new aspirational possibility.[155] American men moved largely from self-employed to employee by the early 20th century, relatively feminized by depending on corporate employers for wages.[156] Between this and women's entry into the public sphere after the Civil War—via the women's movement, education, and employment—it became more difficult for a man to prove his masculinity solely in the workplace. As a result, many performed masculinity through pastimes. Meanwhile, the self-control and delayed gratification lauded in Victorian manliness increasingly interfered with one's individual economic success and also contributed to the popularity of leisure and consumption.[157]

By the 1890s, middle-class American men increasingly sought to perform "a natural or primitive masculinity" and to laud "barbarian virtues" (as Teddy Roosevelt himself called them).[158] In doing so, they exhibited at least some traits of the archetype of physical masculinity. This behavior was frequently related to millennialist concerns of white "race suicide" by contemporary thinkers, who feared that 'civilized' men needed to incorporate elements of the 'primitive' in order to compete with other races.[159] By 1930—

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[155] David R. Roediger, *The Wages of Whiteness: Race and the Making of the American Working Class* (New York: Verso, 1991); Glenn Porter, *The Rise of Big Business: 1860-1920*, 3rd ed., The American History Series (Wheeling, Illinois: Harlan Davidson, Inc., 2006); Alfred D. Chandler, "The Beginnings of 'Big Business' in American Industry," *Business History Review* 33, no. 01 (1959): 1–31, https://doi.org/10.2307/3111932; Kimmel, *Manhood in America*.
[156] Porter, *The Rise of Big Business: 1860-1920*; Rotundo, *American Manhood*; Kimmel, *Manhood in America*.
[157] Angel Kwolek-Folland, *Engendering Business: Men and Women in the Corporate Office, 1870-1930* (Baltimore and London: Johns Hopkins University Press, 1994); Bederman, *Manliness and Civilization*, 84.
[158] Bederman, *Manliness and Civilization*, 73; Theodore Roosevelt, Jr., qtd. in Bederman, 100–101; Rotundo, *American Manhood*.
[159] Bederman, *Manliness and Civilization*; John F. Kasson, *Houdini, Tarzan, and the Perfect Man: The White Male Body and the Challenge of Modernity in America* (New York: Hill and Wang, 2001).

as discussed above—not even the most aristocratic men would be considered "real" men without incorporating some element of physical masculinity.[160]

3.1.3 Traits of Physical Masculinity

Physical masculinity, most directly, involved the physical. This could be through expression and maintenance of one's male physique, an association with physical construction, or simply having practical or tacit knowledge accumulated in the physical world—or valuing it over theoretical knowledge. When discussing the male physique as it relates specifically to physical masculinity, it should first be noted: Men's bodies have been associated with (any) hegemonic masculinity "from the earliest formulations of the concept," as Connell and James Messerschmidt write; however, "bodies are both objects of social practice and agents in social practice."[161] In the case of physical masculinity, I contend, the body was primarily an object of social practice. This included visible evidence of one's physical health, and it excluded disability or other traits considered 'defective.'[162] Many pursued not just a healthy body, but the ideal male body, which had shifted in popular imagery from lean and wiry in the 1860s to one with bulk and defined muscles by the 1890s.[163] Closely associated with the maintenance and display of the male physique, many sports grew in popularity around the turn of the 20th century.[164]

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[160] Bederman, *Manliness and Civilization*, especially p. 19; Rotundo, *American Manhood*, 283.
[161] R. W. Connell and James W. Messerschmidt, "Hegemonic Masculinity: Rethinking the Concept," *Gender & Society* 19, no. 6 (2005): 851.
[162] Kasson, *Houdini, Tarzan, and the Perfect Man*; Bederman, *Manliness and Civilization*; Rotundo, *American Manhood*.
[163] Bederman, *Manliness and Civilization*; Kasson, *Houdini, Tarzan, and the Perfect Man*.
[164] Kimmel, *Manhood in America*; E.J. Gorn, *The Manly Art: Bare-Knuckle Prize Fighting in America* (Cornell University Press, 1986); Bederman, *Manliness and Civilization*; Kasson, *Houdini, Tarzan, and the Perfect Man*.

Physical power does not end at the boundary of one's body, however, nor did the masculine traits associated with it. In their simplest interpretation, technologies serve to amplify physical power, so control of them amplifies one's physical masculinity.[165] This is true of even the most abstract technologies, but it is more obviously true of physical systems and physical constructions. Direct interaction with physical systems and construction is most highly valued through physical masculinity; however more distant associations with them—designing them or owning them, for example—can count towards one's physical masculinity as well.[166] Further, this can extend beyond one's profession to include hobbies that involve the physical world, like woodworking or mechanical tinkering.[167]

The value placed on one's practical or tacit knowledge can be linked to his involvement with physical systems; it is also linked to another important trait of physical masculinity: an association with laborers or lower-class culture. This includes superficial markers like dress, appearance, and vocabularies or dialects associated with the lower class of the time. It also includes leisure pursuits that have been associated with lower classes. By the 1930's, for example, drinking in saloons or attending music halls or sporting events gained popularity among middle-class men.[168] Sharing the contemporary sociopolitical worldviews predominantly held by a lower class can also link one to the realm of physical masculinity. When the hegemonic views of the class change with time—as it did with the

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[165] Connell and Messerschmidt, "Hegemonic Masculinity," 852 reference Donaldson and Poynting (2004) in this observation.
[166] Ruth Oldenziel, *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999); Judy Wajcman, *Feminism Confronts Technology* (Pennsylvania State University Press, 1991).
[167] Wajcman, *Feminism Confronts Technology*.
[168] Bederman, *Manliness and Civilization*; Gorn, *The Manly Art*.

post-WWII shift against unions and social programs in the U.S.[169]--one consistent in his political stance may gain or lose association with physical masculinity.

An association with lower-class culture can also involve being motivated by 'bread and butter' concerns, especially obtaining money. (This desire can be independent of how much money one has. The 'greed is good' attitude in the upper echelons of contemporary American business, for example, draws on and benefits from qualities of physical masculinity.) One can express physical masculinity through his approach to the workplace and his own work, making him uncooperative or less inclined to act magnanimously, and more inclined to consciously and individually fight his way to the top.[170] Hard work is also associated with physical masculinity. This involves lower-class laboring culture as well as a theme of 'tests of endurance or strength.'[171] One should note, however, that such work is not necessarily stimulating or personally gratifying; rather, it is something a man must do (usually to earn money). Attesting to the protean nature of masculinity, one can also perform masculinity by shirking from work or otherwise showing demotivation or laziness. Despite contradicting the association with hard work, 'shirking' demonstrates independence and the power to control one's own exertion.

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[169] Suzanne Clark, *Cold Warriors: Manliness on Trial in the Rhetoric of the West* (Southern Illinois University Press, 2000).
[170] Kwolek-Folland, *Engendering Business: Men and Women in the Corporate Office, 1870-1930*; Kimmel, *Manhood in America*; Rotundo, *American Manhood*.
[171] R.W. Connell, *Masculinities*, 2nd ed. (Berkeley and Los Angeles, CA: Polity Press, 2005); Lisa M Frehill, "The Gendered Construction of the Engineering Profession in the United States, 1893–1920," *Men and Masculinities* 6, no. 4 (2004): 383–403; Ruth Oldenziel, *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999); T. Beneke, *Proving Manhood: Reflections on Men and Sexism*, Men and Masculinity (Berkeley: University of California Press, 1997); Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020) Miller notes the need of the emerging middle class in the mid-1800s south to make a living through hard work, in contrast to planter men (and, I add, in alignment with lower-class freedmen). See esp. pp. 209-210.

Several more abstract personality traits are also strongly linked to physical masculinity. An impulsive confidence or attraction to risk is a key trait of physical masculinity; this is distinct from the quiet or cooperative confidence linked to white-collar masculinity. Other traits include violence, fierceness or passion, egotism, and lust or a celebration of straight male sexuality. Social theorists at the turn of the 20th century stopped short of condoning such extreme expressions as rape or murder; however, they lauded these traits associated with "the natural man" and contrasted them with restrained Victorian manliness.[172]

The final trait of physical masculinity, explicit or personal racism, is very important. This is due to its clear involvement in boundary setting, and also because it speaks to a major limit of this masculine archetype. Many white people had long associated all the traits discussed above with Black lower-class culture and the Black race in general. Valuing such traits exacerbated a protracted conflict within white lower-class culture and especially lower-class masculinities. From the colonial era onward, white Americans (or colonists) sought to distinguish themselves from nonwhites. Pointing to one's independence did not always suffice; from the 1600s onward, one's race was often uncoupled from one's slavery, former slavery, indentured servitude, convict labor, farm tenancy, or wage labor that involved an array of absent rights.[173]

Roediger claims that the antebellum white working class consciously 'othered' the Black population by associating it with certain personalities and lifestyles, particularly those "embodying the preindustrial, erotic, careless style of life the white worker hated and

[172] Bederman, *Manliness and Civilization*.
[173] Roediger, *The Wages of Whiteness*.

longed for" as the white working class was increasingly disciplined by wage dependence.[174] "Racists still pined for older ways, and even still practiced older styles of life, guiltily," Roediger writes, "All of the old habits so recently discarded by whites adopting capitalist values came to be fastened onto Blacks."[175] At the same time, he points out, "White workers held Blacks in contempt as both lazy and, incongruously enough, as too accepting of overly taxing 'nigger work'."[176]

One can imagine that traits of Victorian manliness gained popularity in the 19th century specifically as the antithesis of theorized Black or "savage" traits, allowing white men in the upper and middle classes to clearly distinguish themselves from the lower classes of any race. For white lower-class men--simultaneously pulled between, scorning, and unable to embody different value systems--it remained a dilemma. David Roediger puts it well:

> [W]orkers often contested…these new disciplines. But much of the new discipline was also internalized…Although historians try to draw lines between hard-plugging 'loyalists', hard-protesting 'rebel mechanics' and hard-drinking 'traditionalists', individual workers were pulled in all three directions, and changed categories often, especially during hard times. It was possible to feel guilty for taking a drink with a fellow journeyman at work on Monday and for refusing to do so on Tuesday.[177]

Without clear distinctions between lower-class whites embodying physical masculinity and Black populations with respect to independence or cultural associations (real or fictional),

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[174] Roediger, 14.
[175] Roediger, 95, referencing George Rawick, From Sundown to Sunup.
[176] Roediger, 180.
[177] Roediger, 95–96.

the whiteness of one's physical body would have been all the more important to a lower-class white person seeking *some* distinction.

During Reconstruction, the racial exclusivity of craft unions "became entrenched nationwide," declaring it unthinkable for white and Black workers to labor side by side.[178] Motives were at least as economic as they were status-driven; however, attention to one's income was a status marker of physical masculinity in and of itself.

To return to the limits of physical masculinity, I present a sweeping claim: The archetype of physical masculinity has never been the hegemonic masculinity in a population that claimed civility to distinguish itself as superior to others. In these cases, civility was always a requisite (but not always sufficient) key to respect as a man. In the case of white early- to mid-20th-century America, a man who purely embodied physical masculinity would have lacked such respect, regardless of race; he always needed to incorporate some element(s) of white-collar masculinity in order to be lauded as a man.[179]

3.2 Engineering and Physical Masculinity

Engineering fields began to proliferate and flourish in the same era that saw major changes in business structure limit the independence of middle-class workers and drive them to seek masculine identification outside of Victorian manliness.[180] Engineering employers were

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[178] Roediger, 178.
[179] See Bederman, *Manliness and Civilization* for a discussion of this through the 1920s.
[180] Ruth Oldenziel, *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999); Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997); Michael S. Kimmel, *Manhood in America: A Cultural History*, 3rd ed (New York: Oxford University Press, 2012); E. Anthony Rotundo, *American Manhood: Transformations in Masculinity from the Revolution to the Modern Era* (New York, NY: BasicBooks, 1993); See also Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020), 209–10 for a discussion of antebellum engineers, marketplace, and work ethic.

more and more often large corporations that pulled innovation into the "big business" system of rationalization as they sought incremental improvements that would contribute to their existing systems rather than radical inventions that could significantly alter the firms' trajectories.[181] Changes in legal rules and corporate intellectual property (IP) practices robbed engineers of ownership of their designs; it pushed them away from the early 19th-century status of the independent gentleman inventor and more solidly into the middle class.[182] Increasing numbers of college-graduated engineers and the increasing complexity of machines--which, in turn, required greater oversight and cooperation--further limited many engineers' independence and upward mobility in the 1890s and beyond. As in other sectors, some women began to seek technical educations and work as engineers.[183]

In response to these shifts, white male middle-class engineers used various tactics to protect their status and income against threats from above and below. As discussed above, they took great pains to perform traits of white-collar masculinity; however, by the 1930s, this was not enough. In physical and symbolic ways, engineers associated "what an engineer is" to sports and physical prowess, tests of endurance, and a unique expertise that

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[181] Steven W Usselman, *Regulating Railroad Innovation: Business, Technology, and Politics in America, 1840-1920* (New York: Cambridge University Press, 2002); Steven W. Usselman, "Research and Development (R&D)," in *The Oxford Encyclopedia of the History of American Science, Medicine, and Technology*, ed. H.R. Slotten, vol. 2, Oxford Encyclopedias of American History (Oxford University Press, 2014), 369–87; Catherine L Fisk, *Working Knowledge: Employee Innovation and the Rise of Corporate Intellectual Property, 1800-1930* (Univ of North Carolina Press, 2009).
[182] Catherine L Fisk, *Working Knowledge: Employee Innovation and the Rise of Corporate Intellectual Property, 1800-1930* (Univ of North Carolina Press, 2009); Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020), 27, https://doi.org/10.3998/mpub.11675767 on how engineers saw themselves before this shift.
[183] Amy Sue Bix, "From 'Engineeresses' to 'Girl Engineers' to 'Good Engineers': A History of Women's U.S. Engineering Education," *NWSA Journal* 16, no. 1 (2004): 27–49.

required tacit knowledge and blue-collar acculturation *in addition to* college education.[184] Engineering recruitment materials directed at white boys and young men exaggerated "adventure and hardship" involved—as one such book put it—as well as the "courage and strength" and "strongest and highest character" required to succeed.[185]

Practicality became "the signature feature of engineering in many professional self-descriptions," [186] in the U.S.[187] Educators consciously and closely associated this with hands-on experience.[188] While the requirement of college attendance successfully excluded most women and minorities, the colleges' growing emphasis on hands-on experience acted as an additional filter to women. Some schools accepted women and allowed them to take theoretical classes; however, women were generally excluded from the field trips or shop classes required for graduation.[189] "[T]he road to the drafting board and the laboratory of the engineer lies through the workshop, and workshop practice means hard work and blistered hands, not dilettante pottering and observation," as one 1908 critic of women in engineering put it.[190] Since women were expected to avoid or assumed incapable of such 'hard work,' they were assumed incapable of following such a road.[191]

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[184] Oldenziel, *Making Technology Masculine*; Frehill, "Gendered Construction"; Julia Kirk Blackwelder, *Electric City: General Electric in Schenectady*, Kenneth E. Montague Series in Oil and Business History (College Station: Texas A&M University Press, 2014); Amy E. Slaton, *Reinforced Concrete and the Modernization of American Building, 1900-1930* (Baltimore and London: Johns Hopkins University Press, 2001), Ebrary e-book.
[185] Newell, F. H., and C. E. Drayer, eds. 1916. Engineering as a career: A series of papers by eminent engineers. New York: Van Nostrand, qtd. in Frehill, "Gendered Construction."
[186] Amy E. Slaton, *Race, Rigor, and Selectivity in U. S. Engineering: The History of an Occupational Color Line* (Cambridge, MA: Harvard University Press, 2010).
[187] Eda Kranakis, *Constructing a Bridge: An Exploration of Engineering Culture, Design, and Research in Nineteenth-Century France and America*, Inside Technology (MIT Press, 1997), EBSCO Publishing eBook Collection (EBSCOhost).
[188] Oldenziel, *Making Technology Masculine*.
[189] Oldenziel, 157.
[190] Karl Drews, "Women Engineers: The Obstacles in Their Way," *Scientific American, Supplement* 65 (March 7, 1908).
[191] Oldenziel, *Making Technology Masculine*.

That road was also one of socialization, as practitioners and educators alike argued that, for an engineer to manage workers, he must strike a balance between distinguishing himself as their superior while being seen as similar to and relatable to them.[192] This likely seemed impossible for all but white men. The conscious coupling of engineering to blue-collar traits in many ways marked blue-collar men as more masculine—indeed, as Oldenziel writes, "The public association between technology and manliness grew when male middle-class attention increasingly focussed its gaze on the muscular bodies of working-class men and valorized middle-class athletes…"[193] This associative process, however, developed during a period in which blue-collar men were losing their independence and power, not least through the increased mechanization of their work. By the early 20th century, engineers were able to romanticize the shop floor without risk of losing social power to it, even fetishizing machinists' outdated hand tools.[194] Engineers frequently spoke and wrote as if they had personally constructed the things they had merely designed; [195] such language is so ingrained that it can often pass notice today.[196]

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[192] Oldenziel.
[193] Oldenziel, 10.
[194] Oldenziel, 113–14.
[195] Oldenziel, *Making Technology Masculine*.
[196] See, for example, Cowan, *Social History of American Technology*, 146: "But the engineers built the systems, doing the day-to-day skilled work that made it possible…".

3.3 "Men of the Border": On Frontier Masculinity and Military Masculinity

> The men of the border did not overcome and dispossess cowards and weaklings; they marched forth to spoil the stout-hearted and to take for a prey the possessions of the men of might.
>
> –Theodore Roosevelt, *The Winning of the West* [197]

Frontier masculinity and military masculinity are archetypes in their own rights, and they are thoroughly masculine in their own rights. Explorers, pioneers and soldiers have been associated with masculinity for so long that their masculinity (or even the masculinity of those who associate with their traits) is assumed.[198] At the same time, it can be useful to consider them as two different combinations or hybridizations of the white-collar and physical masculine archetypes. These hybridizations, like all masculinities, developed over time to exclude nonwhite people, non-men, and many white men in order to benefit certain white men.[199]

A middle-class white man in the early 20th century, for example, may have felt emasculated by a wealthy man's more perfect performance of white-collar masculinity, and he may have felt emasculated by what he considered a Black man's superior embodiment of physical masculinity. In such a case, one masculinity that he could have performed that *neither* of these other two could (at least as successfully, in his worldview) was that of frontier masculinity. The wealthy man would not deign to get his hands dirty,

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[197] T. Roosevelt, in The Winning of the West, qtd. in Bederman, *Manliness and Civilization*, 181–82.
[198] Bederman, *Manliness and Civilization*; Connell, *Masculinities*; Frehill, "Gendered Construction."
[199] Connell, *Masculinities*; Connell and Messerschmidt, "Hegemonic Masculinity"; Michael Kimmel, "Human Beings: An Engendered Species," in *The Gendered Society* (New York: Oxford University Press, 2015), 1–17.

he might assume, and Black cowboys were made so invisible that he could easily assume they did not exist (they, after all, were believed to lack the independence needed for rugged individualism).[200] A similar claim could be made by military masculinity, which systematically and culturally excluded Black men, and which excluded wealthy men by its rigorous demands, or at least made their wealth immaterial in its democratizing meritocracy.[201]

What is interesting is that both of these masculinities were located at borders—both physical and psychological borders. Physically, one depicted the explorer or frontiersman at the border between the known and/or civilized world and the unknown and uncivilized. One likewise depicted the military man at the warfront, the geographic border between what he defended and what he defended against (with 'defense' and all terms defined very generously, as in wartime propaganda). During certain periods of history, these military and frontier borders have been one and the same, as for the U.S. soldiers sent to fight Native Americans in the American West.[202]

Psychologically and symbolically, men identifying with both masculinities claimed to protect and uphold the civilized and familiar by fighting against the wild and dangerous 'others' beyond (both human and nonhuman). To do so, they claimed to require both the 'civilized' masculinity one finds in the white-collar archetype and the 'savagery' that one finds in the physical masculine archetype (and, geographically, beyond the border).[203] By contrast, white-collar and physical masculinities could both *claim* to fight for and against

[200] Bederman, *Manliness and Civilization*.
[201] Clark, *Cold Warriors: Manliness on Trial in the Rhetoric of the West*.
[202] Bederman, *Manliness and Civilization*.
[203] Bederman.

certain things; however, their positions--fully within a society--changed the nature of such claims. The liminal position of frontier and military masculinities is highly significant here.

One could also place these at a liminal position in any given 'pecking order' of masculinities: To one who fully inhabits white-collar masculinity, for instance, frontier and military masculinities might be the furthest one could comfortably venture culturally towards physical masculinity without forsaking one's white-collar values or traits entirely. To one who fully inhabits physical masculinity, vice versa.

3.4 Frontier Masculinity

3.4.1 The Development of Frontier Masculinity

What is discussed here as 'frontier masculinity' has been discussed by social theorists, often without a specific term applied to it, as part of the shift of hegemonic U.S. masculinity towards physical masculinity around the turn of the 20th century. Kimmel, Rotundo, and Lisa Frehill explain that white middle-class men around this time, having popularized the link between masculinity and traits we identify here with 'physical masculinity,' began to see 'the outdoors' as one arena in which they could prove that physical masculinity.[204] Bederman discusses the use of the term "the natural man" during this period; this is also an identity that incorporates at least as much physical masculinity, in its own right, as frontier imagery.[205]

[204] Kimmel, *Manhood in America*; Rotundo, *American Manhood*; Frehill, "Gendered Construction."
[205] Bederman, *Manliness and Civilization*.

Despite the resurgent popularity of self-sufficient pioneer imagery circa 1900, American culture has been strongly influenced by the image much longer, arguably from the start of European colonization. The culture has also been influenced from that period onward by popular depictions of Native Americans, which alternately used them as savage foils to 'hardworking whites' and as symbols of white Americans' independence.[206] As explained for physical masculinity, above, several social, political, and economic developments by the turn of the 20th century encouraged white middle-class men, generally urban inhabitants, to find new ways to exhibit their masculine status. By this time, importantly, the cowboy and the Western frontier had been mythologized and heroized in the popular imagination.[207] Bederman explains the important role of Theodore Roosevelt in this process of not only popularizing this mythology but also explicitly linking it to one's masculinity and emphasizing its importance to the white race and imperialism in the race war that millennialists assumed inevitable.[208] This "legacy of conquest" in the story of the Americas continued well into the 20th century, extended to apply to American victory in World War II and the fight for capitalism during the Cold War.[209]

3.4.2 Traits of Frontier Masculinity

Predominantly built around popular imagery of the cowboy or frontiersman, frontier masculinity in the 20th century was also closely linked to a colonizer identity that was much older and more global than the American West. The purest expression of frontier masculinity, then, appeared in venturing into what one considered a rough, 'natural'

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[206] Roediger, *The Wages of Whiteness*.
[207] Kimmel, *Manhood in America*; Bederman, *Manliness and Civilization*.
[208] Bederman, *Manliness and Civilization*.
[209] Patricia Limerick, qtd. in Clark, *Cold Warriors: Manliness on Trial in the Rhetoric of the West*, 5.

environment—both human and nonhuman—and domesticating it (by 'civilizing' it and/or making it productive to one's own needs).[210] Short of living and working as a cowboy or imperial explorer, however, one could exhibit this masculinity by showing off traits he shared with the popularized image of a cowboy or explorer.

Theodore Roosevelt's depiction of ranchers in his book *Ranch Life and the Hunting Trail* explicitly describes the combination of white-collar and physical masculine traits that were popularly linked to and heroized in frontier masculinity from the turn of the 20th century onward. On one hand, such ranchers shared fundamental qualities with a white-collar gentleman, being "shrewd, thrifty, patient, and enterprising." On the other hand, ranchers worked "like…vigorous, primitive pastoral peoples, having little in common with the humdrum, workaday business world of the nineteenth century; and the free ranchman in his manner of life shows more kinship to a Arab sheik than to a sleek city merchant or tradesman." As a result, Roosevelt explains, such a man "must also possess qualities of personal bravery, hardihood, and self-reliance to a degree not demanded in the least by any mercantile occupation in a community long settled."[211] His depiction of backwoodsmen in *The Winning of the West* also emphasized the traits that distinguished them from 'settled' men while linking them to civilization: "There was little that was soft or outwardly attractive in their character; it was stern, rude, and hard, like the lives they led; but, it was the character of those who were every inch men, and who were Americans through to the very heart's core."[212] These, Roosevelt explained, were the men who would "match their red foes' masculine savagery in order to win the war and safeguard the future of

[210] Bederman, *Manliness and Civilization*; Connell, *Masculinities*.
[211] T. Roosevelt, Ranch Life and the Hunting Trail, qtd. in Bederman, *Manliness and Civilization*, 176.
[212] T. Roosevelt, The Winning of the West, qtd. in Bederman, 180–81.

civilization," as Bederman summarizes, and would undergo a "temporary reversion to the primitive in order to build a more powerful civilization."[213]

Frontier masculinity, then, *contrasted* with both the white-collar masculinity of 'settled' civilization and the physical masculinity of the 'uncivilized savage' because it *embodied* elements of both masculinities. Further, it did so in a way that thoroughly emphasized such a man's independence, arguing that he had greater independence than either a settled white man or a savage (claiming the latter did not have the mature faculties for true independence).[214] It is also worth noting that such an identity excluded all nonwhite people--even those, like Black Americans, who were very much a part of 'settled' communities.[215]

Frontier masculinity is also significantly linked to a heroic relationship with the natural environment.[216] In this relationship, one can champion the civilization and development of the environment *or* its conservation; the significant feature is that he is the hero.[217] One could perform this vocationally, for example through farming, ranching, living off the land in any way, working as an explorer, or working as a naturalist.[218] It could alternatively be performed through recreational pursuits that mimic those vocations, such as camping, vacationing at dude ranches or in other rural areas, hunting, fishing, riding

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[213] Bederman, 182.
[214] Bederman, *Manliness and Civilization*.
[215] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995), 179; Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020), 229.
[216] Here, "the natural environment" is accepted as a social construct and is not problematized, since one is already performing social constructs of this masculinity. See discussion in Bederman, 73–74.
[217] Bederman, *Manliness and Civilization*.
[218] Bederman.

horses, keeping certain pets, or gardening.[219] To a lesser degree, one could perform this masculinity by engaging with the natural or nonhuman environment on a symbolic or philosophical level, for example by exhibiting the fashion or knowledge that one associates with a frontiersman.

Finally, one may perform frontier masculinity by adventuring, which generally involves traveling to or living in previously remote areas. This is not limited to a geographical frontier or the natural world; it's more closely linked to the spirit of adventure or exploration that is popularly imagined in explorers of the unknown.[220] By extension, this can involve non-physical adventuring, such as pushing intellectual or social boundaries or inventing or discovering something new.[221]

3.4.3 Engineering and Frontier Masculinity

Engineering was long used in taming and developing the natural environment.[222] By the early 20th century, American engineers often worked abroad as part of imperialist projects or other work to 'develop' countries with relatively poor infrastructure; it was not uncommon to see this as part of their early-career training.[223] In the early 20th century, the engineering field advertised to young boys and men by consciously associating with

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[219] Kimmel, *Manhood in America*; Bederman, *Manliness and Civilization*.
[220] Frehill, "Gendered Construction"; Oldenziel, *Making Technology Masculine*.
[221] Vannevar Bush, *Science: The Endless Frontier* (New York: American Council of Learned Societies, 2010); Oldenziel, *Making Technology Masculine*; Frehill, "Gendered Construction."
[222] Lynn White, Jr., "The Flavor of Early Renaissance Technology," in *Developments in the Early Renaissance: Papers of the Second Annual Conference of the Center for Medieval and Early Renaissance Studies, State University of New York at Binghamton, 4-5 May 1968*, ed. Bernard S. Levy (Albany, NY: State University of New York Press, 1968); Dolly Jørgensen, "Not by Human Hands: Five Technological Tenets for Environmental History in the Anthropocene," *Environment and History* 20, no. 4 (2014): 479–89, https://doi.org/doi:10.3197/096734014X14091313617163; James C. Williams, "Understanding the Place of Humans in Nature," in *Illusory Boundary: Technology and the Environment*, ed. Martin Reuss and Stephen H. Cutcliffe (Charlottesville: University of Virginia Press, 2010), 9–25.
[223] Oldenziel, *Making Technology Masculine*; Frehill, "Gendered Construction."

imagery and qualities of frontier masculinity, and engineers were depicted as outdoorsmen in creative works like novels and visual art.[224]

3.5 Military Masculinity

3.5.1 The Development of Military Masculinity

A growing body of scholarship has pointed out that a variety of masculine identities are found within the context of the military, and several have explored such differences in light of varying historical, political and social contexts.[225] It has also become evident that military masculinities have strongly influenced civilian life and have been adopted in "noncombat military masculinities."[226] In this dissertation, I am discussing a noncombat military masculinity, expressed by civilians and veterans. Although I will briefly point to traits of this masculinity as a whole in the mid-20th century U.S., I predominantly focus on the expressions of this military masculinity that distinguish it from the other masculinities discussed in this dissertation: associations with the military and institutional dedication.

Although masculinity has long been associated with warriors, knights, and soldiers,[227] some scholars argue that a modern, cohesive (or whole-person) military masculinity, "a form of masculinity peculiar to the modern nation-state, in which the citizen

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[224] Frehill, "Gendered Construction"; Oldenziel, *Making Technology Masculine*.
[225] Paul R. Higate, ed., *Military Masculinities: Identity and the State* (Westport, CT: Praeger, 2003); Connell and Messerschmidt, "Hegemonic Masculinity"; Robert A. Nye, "Western Masculinities in War and Peace," *The American Historical Review* 112, no. 2 (2007): 417–38.
[226] Nye, "Western Masculinities," 424, 426; Paul R. Higate, "'Soft Clerks' and 'Hard Civvies': Pluralizing Military Masculinities," in *Military Masculinities: Identity and the State*, ed. Paul R. Higate (Westport, CT: Praeger, 2003), 27–42; Melissa K. Stockdale, "'My Death for the Motherland Is Happiness': Women, Patriotism, and Soldiering in Russia's Great War, 1914-1917," *American Historical Review* 109, no. 1 (February 2004): 78–116.
[227] Connell, *Masculinities*, 189–90.

must carry within himself the qualities of a warrior, but as a warrior must also remain the citizen he will become again at conflict's end," developed around the time of the American and French Revolutions.[228] Alongside the nineteenth century industrialization of warfare that saw less hand-to-hand combat, the personal honor of the individual soldier became more closely intertwined with national institutions.[229] The late 1800s saw a shift in soldiers of the Western world from a "post-Civil War 'restrained' masculinity" to "the subsequent turn-of-the-century 'martial' masculinity."[230] By World War II, American media predominantly displayed the soldier "as more physical, sculpted, and aggressively masculine than in previous wars" as well as "young, white, [and] well-muscled," significantly influencing "personal and cultural narratives of military masculine embodiment."[231] Military masculinity shifted again after WWII to be less physical and more closely associated with cold logic;[232] however, military imagery and patriarchal might remained popular as responsibility for defending the West in the late 1940s and 1950s was believed to require a constant American military presence.[233]

As a result, the military masculinity with which TVA engineers grappled shifted between 1933 to 1953; however, several general traits remained constant. It always included traits of physical masculinity as well as white-collar masculinity. Military

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[228] Nye, "Western Masculinities"; Joan Landes, "Republican Citizenship and Heterosexual Desire: Concepts of Masculinity in Revolutionary France," in *Masculinities in Peace and War*, ed. Dudink, Hagemann, and Tosh, n.d.
[229] Nye, "Western Masculinities."
[230] Nye, 427; citing Amy S. Greenberg, *Manifest Manhood and the Antebellum American Empire* (New York, 2005), 272–82.
[231] Nye, "Western Masculinities," 423; citing Christina S. Jarvis, *The Male Body at War: American Masculinity during World War II* (DeKalb, IL, 2004), 56–85.
[232] Clark, *Cold Warriors: Manliness on Trial in the Rhetoric of the West*.
[233] Robert D. Dean, *Imperial Brotherhood: Gender and the Making of Cold War Foreign Policy* (Amherst, MA, 2001), 6–7; Nye, "Western Masculinities."

members were logically associated with physical masculine traits such as violence, fighting, and courage; they also were seen to have left behind the relative civility of civilian life to live in the rough and undergo extreme tests of endurance.[234] On the other hand, vocal leaders emphasized a white-collar masculine connection with civility, restraint, and selflessness at least as far back as the American Revolution.[235] One scholar points out that war and the military de-emphasized class differences,[236] arguably lowering barriers to white-collar-masculine socioeconomic prestige for those associated with military masculinity. I analyze the expression of the above traits at the TVA as part of white-collar and physical masculinities in chapters 4 and 5.

3.5.2 Traits of Military Masculinity

Military masculinity is most visibly expressed through connections to the military and war. The most obvious form of this is individually serving or having served in the military, and especially having served during a war, which Judy Wajcman calls "the ultimate test of manliness."[237] The emotions around the risk and sacrifice of wartime situations, it is argued, subordinate all noncombat military masculinities relative to combat masculinities.[238] One may, however, also express this masculinity as a civilian by making direct or indirect contributions to a war effort or military, especially if working with a

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[234] Nye, "Western Masculinities," 417, 430, citing Susan Kingsley Kent, Making Peace: The Reconstruction of Gender in Interwar Britain (Princeton, N.J., 1993), 31-50; Susan R. Grayzel, Women's Identities at War: Gender, Motherhood, and Politics In Britain and France during the First World War (Chapel Hill, N.C., 1999), 50-85; Ruth Harris, "'The Child of the Barbarian': Rape, Race and Nationalism during the First World War," Past and Present 141 (October 1993): 170-206. Rotundo, *American Manhood*, 232–33.
[235] Nye, "Western Masculinities," 417, 430.
[236] Joanna Bourke, *Dismembering the Male: Men's Bodies, Britain and the Great War* (London: 1996, n.d.), 251–52.
[237] Wajcman, *Feminism Confronts Technology*; Bederman, *Manliness and Civilization*; Nye, "Western Masculinities"; Higate, "'Soft Clerks' and 'Hard Civvies.'"
[238] Higate, "'Soft Clerks' and 'Hard Civvies'"; Nye, "Western Masculinities," 424, 426.

military or serving it in an advisory capacity (for example, as a contractor). One may also emphasize non-material connections to the military and war, for example through the use of military imagery.[239]

Another important way one expresses military masculinity is through dedication to an institution, from one's nation-state or military to one's employer. This is arguably unique and counter-logical when viewed in the context of the other three masculinities discussed in this dissertation because it specifically lauds subjugation of the individual, including his personal values and goals, to the good of the organization. This is part of the process through which a military fulfills its main purpose, the control and use of technologies (broadly defined) of destruction.[240] Within the armed forces, "Military training deindividualizes men and prepares them for sacrifice"[241]; however, this trait enters and is lauded men's civilian organizations alongside other traits of military masculinity.[242] Although this may be interpreted as an altruism not unlike that found in white-collar masculinity, the relative positions of these acts of service differentiate them. One exhibiting white-collar masculinity may fulfill the role of magnanimous patriarch, aiding the development of a community and especially those deemed less fortunate; meanwhile, one exhibiting military masculinity acts for the good of a (far more powerful) organization to which he submits. This can result in a man's dedication to a hierarchy that doesn't directly serve him. In return for this submission, one is often encouraged to identify with an institution—effectively merging at least part of his identity with the institution—thus

[239] Frehill, "Gendered Construction."
[240] Higate, *Military Masculinities*.
[241] Nye, "Western Masculinities," 430.
[242] Nye, 418.

associating himself with its perceived qualities (power, might, idealism) to garnish perception of his own masculinity.

3.5.3 Engineering and Military Masculinity

Engineering work has been intimately intertwined with the military for centuries or millennia, depending on one's definition of each.[243] Engineers were rarely employed outside of the military until the 18th century rise of what one would currently consider civil engineering.[244] West Point, the first military academy in the U.S., provided the country's only formal comprehensive engineering education until the 1830s, with a program focused on military applications.[245] The U.S. government has had a permanent corps of engineers in its army since shortly after the Revolutionary War,[246] and it has long been a tremendous sponsor of commissioned technological innovation for military purposes.[247] Engineered products, in turn, have made major contributions to the U.S. military and war efforts throughout the nation's history, especially when it prepared for or made war.[248] Many

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[243] Thomas Parke Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970* (New York: Viking, 1989); Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997), 138.
[244] With the exception of mining--again, depending on one's definitions. Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997), 138; Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020).
[245] Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997), 139; Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020), 29, 32–33.
[246] Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020), 31.
[247] Merritt Roe Smith, *Harpers Ferry Armory and the New Technology: The Challenge of Change* (Ithaca: Cornell University Press, 1977); David A. Hounshell, *From the American System to Mass Production, 1800-1932: The Development of Manufacturing Technology in the United States* (Baltimore: The Johns Hopkins University Press, 1984); Thomas Parke Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970* (New York: Viking, 1989); Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997).
[248] Thomas Parke Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970* (New York: Viking, 1989); Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997).

would argue that such links between the military and technological development, primarily through contracts and the establishment of government research agencies, grew significantly firmer during and after World War II as they moved toward what President Dwight Eisenhower would in 1959 label 'the military-industrial complex.'[249] The techniques developed during WWII to manage large-scale R&D projects also profoundly impacted the nature of postwar R&D, and most postwar Americans were convinced that science and technology were vital to national defense.[250]

The connection between engineering identity and other traits unique to military masculinity, however, is less cut-and-dried. Engineering has been long associated with service;[251] however, to whom that service has been dedicated varies,[252] splitting the performance of this trait between white-collar and military masculinities as discussed above. In *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (VMI), Jonson Miller shows conscious efforts to instill 'reserved' manliness—most similar

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[249] Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997), 262; Aaron L. Friedburg, *In the Shadow of the Garrison State: America's Anti-Statism and Its Cold War Grand Strategy* (Princteon, NJ: Princeton University Press, 2000); John Krige, "Diplomacy (Post-1945), Science and Technology And," in *The Oxford Encyclopedia of American Scientific, Medical and Technological History*, ed. Hugh Slotten (New York: Oxford University Press, 2013); Thomas Parke Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970* (New York: Viking, 1989).
[250] Ruth Schwartz Cowan, *A Social History of American Technology* (Oxford University Press, 1997); Thomas Parke Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm, 1870-1970* (New York: Viking, 1989); Vannevar Bush, *Science: The Endless Frontier* (New York: American Council of Learned Societies, 2010); John Krige, "Diplomacy (Post-1945), Science and Technology And," in *The Oxford Encyclopedia of American Scientific, Medical and Technological History*, ed. Hugh Slotten (New York: Oxford University Press, 2013); Linda Weiss, *America Inc.?: Innovation and Enterprise in the National Security State* (Ithaca ; London: Cornell University Press, 2014).
[251] Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020); Matthew Wisnioski, *Engineers for Change: Competing Visions of Technology in 1960s America*, Engineering Studies (Cambridge, MA: MIT Press, 2012); Ken Alder, "French Engineers Become Professionals; or, How Meritocracy Made Knowledge Objective," in *The Sciences in Enlightened Europe*, ed. William Clark, Jan Golinski, and Simon Schaffer (Chicago: University of Chicago Press, 1999).
[252] Edwin Layton, Jr., *The Revolt of the Engineers: Social Responsibility and the American Engineering Profession* (Cleveland, OH: Case Western University Press, 1971); Matthew Wisnioski, *Engineers for Change: Competing Visions of Technology in 1960s America*, Engineering Studies (Cambridge, MA: MIT Press, 2012).

to white-collar masculinity in this dissertation—in young white men. School leaders sought to teach traits like material independence, self-discipline, and dedication to meritocracy in order to broaden white male citizenship beyond wealthy landowners, and the "natural connection" they initially saw between engineering and the military was in the practical military need for engineered products.[253]

That said, VMI cadets also learned to develop a sense of honor through "the subordination of personal interests to those of Virginia and their fellow citizens," and graduates were expected to dedicate their service to the state, which they did in various ways.[254] In a similar vein, Frehill gives evidence that some influential engineers in the late 1900s consciously sought to associate the nature of engineering work with that of military service; they emphasized that both soldiers and engineers subsume individuality to contribute to masculine organizations and proposed that engineering schools model themselves on military schools.[255]

Equivalencies between the two lines of work, however, arguably weaken in light of the tremendous numbers of engineers who left their jobs to enlist in active duty during wartime,[256] when military masculinities tend to dominate. That is, one who felt perfectly masculine working as an engineer in wartime would be less inclined to enlist. Further,

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[253] Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020), 108.
[254] Jonson Miller, *Engineering Manhood: Race and the Antebellum Virginia Military Institute* (Lever Press, 2020), 210.
[255] Lisa M Frehill, "The Gendered Construction of the Engineering Profession in the United States, 1893–1920," *Men and Masculinities* 6, no. 4 (2004): 398–99.
[256] Amy Sue Bix, *Girls Coming to Tech!: A History of American Engineering Education for Women*, Engineering Studies (Cambridge, MA: The MIT Press, 2013); Ruth Oldenziel, *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999); Susan Hartman, *The Home Front and Beyond: American Women in the 1940s* (Boston: Twayne, 1982).

historiography of the WWII-era training, recruitment, and subsequent demotion of women engineers suggest that the association between engineering and military masculinity weakened (or was, at least, threatened) in wartime. The profession, for example, required new structures like the adoption of the title "engineering aide" for women in order to safeguard the male engineers who remained or returned.[257]

3.6 Conclusion

This chapter discussed the archetypes of physical masculinity, frontier masculinity, and military masculinity. Physical masculinity underwent a resurgence among white middle-class American men around the turn of the 20th century, and several of its traits commonly featured in 20th century performances of masculinity. Traits of physical masculinity included possession and maintenance of a specific masculine physique; association with physical constructions; association with laborers or lower-class culture, including being motivated by money and working hard; 'primal' personality traits like passion, violence, and risk-taking; and explicit or personal racism. Engineers from the early 20th century onward sought to associate their profession with certain traits of physical masculinity in addition to the white-collar masculine traits with which they had become associated. They advertised that engineering work required courage, strength, and the endurance of hardship, and they associated their work with practical experience rather than intellectualization or academia. They also encouraged engineers' adoption of certain blue-collar traits, not least to command the respect of those they supervised.

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[257] Amy Sue Bix, *Girls Coming to Tech!: A History of American Engineering Education for Women*, Engineering Studies (Cambridge, MA: The MIT Press, 2013); Ruth Oldenziel, *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999).

Frontier masculinity drew on imagery of frontiersmen and explorers. It included white-collar masculine traits like intellect and civility as well as physical masculine traits like hardiness, strength, rudeness, and savagery. It also included the act of exploring and/or colonizing as well as a heroic relationship with the natural environment, all of which could be performed physically or symbolically. Military masculinity here describes traits common to civilian military masculinities in the 20th-century U.S. It included white-collar traits like restraint and selflessness as well as physical traits like courage, violence, and hardiness. It also included connections to the military and war as well as subjugation of oneself to an institution. Frontier and military masculinities could be modeled as whole archetypes. They were arguably more powerful as distinct white masculinities than either white-collar or physical archetypes, however, because they combined some traits of each white-collar masculinity and physical masculinity in addition to unique traits associated with imagery of their liminal settings.

CHAPTER 4. WHITE-COLLAR MASCULINITY AT THE TVA

4.1 TVA Engineers, Intellectualism, and Idealism

From the TVA's inception through 1953, those in its managerial ranks associated themselves (and were associated by others) with intellectualism.[258] This term encompasses expertise and impartiality while implying an enthusiasm for learning as well as associations with academia, the upper class, magnanimity, and (by extension) idealism. TVA engineers were no exception.

All or almost all higher-ranking TVA engineers had previous college training,[259] and they showed expertise at their jobs.[260] TVA found several metrics to prove this in its 1943 "Study of Experience Backgrounds and Earnings of TVA Administrative and Executive Personnel," which TVA appears to have used to defend itself during Congressional debate over the qualifications of well-paid government personnel.[261] The

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[258] Donald H. Mattern, interview by Mark Winter, July 27, 1983, Box 7, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Dr. Harry L. Case, interview by Mark Winter, April 5, 1983, Box 2, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[259] Personnel Department, "Study of Experience Backgrounds and Earnings of TVA Administrative and Executive Personnel" (Tennessee Valley Authority, September 1943), Box 397, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Gordon R. Clapp to David Lilienthal, Harcourt Morgan, and James Pope, "Study of Experience Backgrounds and Earnings of TVA Administrative and Executive Personnel," memorandum, September 24, 1943, Box 397, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[260] Richard Lowitt, "The TVA, 1933-45," in *TVA: Fifty Years of Grass-Roots Bureaucracy*, ed. Erwin C Hargrove and Paul Keith Conkin (Urbana and Chicago: University of Chicago Press, 1983), 35–65.

[261] George F. Gant to Gordon R. Clapp, "Study of Experience Backgrounds and Earnings of TVA Administrative and Executive Personnel," memorandum, September 6, 1943, Box 397, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

report used the personal history records of all 212 TVA employees whose positions started at $5600/year to present statistical and descriptive evidence of their "qualifications and attainments."[262] Those in "Professional Service"—most of whom were engineers—had an average of 17 years' work experience in their field upon joining TVA; they had generally advanced in their pre-TVA careers despite the Great Depression; and many had graduate degrees.[263] To emphasize that their "competence in their work has been recognized outside of the Authority," the report's Appendix lists a long string of its engineers' individual accomplishments, awards, patents, loans of their expertise to other institutions and countries, and mentions in *Who's Who*.[264] A study that TVA had conducted in 1936 reportedly found similar results to the one in 1943.[265] As further evidence of expertise and a strong association with academia, several engineers were members of college faculty before, during, or between periods of TVA employment.[266]

Beyond expertise in their own fields, at least some TVA engineers sought intellectual breadth, communicating across STEM fields and showing interest in the humanities. Engineers discussed their work with other engineers through organized

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[262] Clapp to Lilienthal, Morgan, and Pope, "Study of Experience," September 24, 1943.
[263] Personnel Department, "Study of Experience."
[264] Personnel Department.
[265] Clapp to Lilienthal, Morgan, and Pope, "Study of Experience," September 24, 1943.
[266] Dr. Leland G. Allbaugh, interview by Mark Winter, September 15, 1981, Box 1, folder 4; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Roland A. Kampmeier, interview by Mark Winter, February 15, 1983, Box 6, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Jaques Cattell, ed., "Curtis, Dean Harry A(Lfred)," in *American Men of Science: A Biographical Directory* (Lancaster, PA: The Science Press, 1949), Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

channels like seminars[267] and discussion groups[268] as well as through more informal friendships, internal and external to the TVA.[269] Harry Curtis—the TVA's first Chief Chemical Engineer and later a TVA Board Member—prided himself on learning the liberal arts, performing historical research, and reading as "one of his favorite pastimes," according to features in local newspapers and his autobiographical manuscript.[270] Others' appreciation for the humanities and presentation of their own relationships with them can be found in oral history accounts.

Roland Kampmeier joined the TVA as a hydraulic engineer in 1933 and rose through the ranks to Assistant Manager of Power and Director of Power Supply in 1950.[271] During his 1983 oral history interview, when reflecting on his work in the Power Department, Kampmeier explained, "One point of personal interest to me was that…just as I had sort of learned to be an economist as well as an engineer, I had to learn to be a

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[267] Kampmeier, interview; Personnel Department, "The Employment and Training of College Graduates in the Tennessee Valley Authority" (Tennessee Valley Authority, August 1936), Administrative Files, 1933-1957; Record of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[268] Personnel Department, "The Employment and Training of College Graduates."
[269] Walter F. Emmons, interview by Mark Winter, September 8, 1983, Box 3, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); John Oliver, interview by Mark Winter, June 16, 1983, Box 8, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[270] Julian Granger, "Dr. Curtis Still Tough Despite the Tears," February 12, 1960, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; "Cancer Fatal to Crusader: Dr. Curtis, Former TVA Director, Dies," *The Knoxville News-Sentinel*, July 1, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis, "Handwritten Autobiographical Account," 1962, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[271] TVA Oral History Program, "Biographical Sketch [Roland A. Kampmeier]" (Tennessee Valley Authority, February 15, 1983), Box 6, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

lawyer as well as an engineer." [272] Although he presents this as a "point of personal interest," thus performing white-collar masculinity's enthusiasm and high capacity for learning, Kampmeier phrases his learning law as something he "had to" do, subtly pulling in some associations with physical masculinity, detailed in the next chapter: challenges, tests of strength, and hard work (often as something unenjoyable that must be done). As we will see in the next chapter, Kampmeier was frequently associated with traits of physical masculinity, so this wording is not incongruous with his unique hybridization of masculinities.

As a TVA chemical engineer from 1938 onward who rose through the postwar ranks, Travis Hignett recalled the work he did as Director of Chemical Development from 1962 to 1973: "mainly planning, and writing up the results of our research…putting all of the many different projects together in perspective to make an entire picture to inform people what TVA was doing." He added, "I like writing and I have, I think, about 100 publications, and 16 patents," indicating not only an intellectual interest but a level of productivity laudable in white-collar masculinity.[273]

A. B. Phillips, who joined TVA as a junior chemical engineer in 1942 and rose to Chief of the Process Development Branch, stressed that one in management "[m]ust be

[272] Kampmeier, interview, 42.
[273] Travis P. Hignett, interview by Mark Winter, April 13, 1983, 8–9, Box 5, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

able to think logically and generally had to be able to write well."[274] Phillips elaborated, using a general foil to imply his own written communication skills and intelligence:

> The ability to express yourself well in writing was awfully important and it could be very frustrating if you had people in key positions that couldn't do that. If you have to have something quickly and be responsive, and if it wasn't done well, why, then you had problems. But I think the ability to write well is just sort of an extension of the ability to think well.[275]

Here, his practical explanation for the frustration draws on physical masculinity (in its emphasis on practicality and its rejection of intellectual interest as a status symbol), perhaps at the cost of esteem through white-collar masculinity's lens. The final sentence, however, returns to the worldview of white-collar masculinity: If one can't write well, the logic reads, then it must be due to an inability to "think well"—rather than, say, a lack of training in composition. In his assessment of his retirement, Phillips again invoked the theme of intellectual stimulation: He had worked at TVA a year longer than planned, he explained, and "I could have gone on, but I had been doing the same thing for a long time and I was getting sort of tired of it." When asked if he ever regretted retirement, Phillips responded, "No. Not at all. I haven't been bored a minute."[276]

Intellectualism was not only personally displayed: TVA engineers highly valued intellectual capacity beyond pure utility. When asked in oral history interviews to discuss individual former colleagues, the most immediate and effusive compliments they offered generally involved intellectual capacity, and the trait was discussed so often that one

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[274] A. B. Phillips, interview by Mark Winter, April 14, 1983, 30, Box 9, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[275] Phillips, 30–31.
[276] Phillips, 35–36.

suspects it was the most highly regarded trait.[277] Although some compliments directly discussed expertise at certain areas of a man's job,[278] others made it clear that they were thinking beyond job performance, from noting one "man of really very high intelligence" to describing another with a "keen mind and outstanding organization mentally…Really a well rounded man."[279]

As discussed in chapter 2, idealism as dedication to a model is pitted against pragmatism and its dedication to messy reality. Harry Case joined the TVA in the 1930s as a classification officer and eventually became Personnel Director from 1946 to 1956.[280] In his 1983 oral history, Case summarized a shift away from idealism and towards pragmatism among TVA employees from his perspective:

> …in its early years TVA attracted quite a few idealists and quite a few liberally minded people who were believers in 'good causes' and that sort of thing…and many of those sort of sifted out. They weren't fired. Some of them cooled off…and became more pragmatic. Some of them left because it wasn't exactly the kind of organization which they thought it was going to be, perhaps…TVA became a much more pragmatic organization than you would have expected if you were to examine many of the people who came in at the very beginning. I don't think TVA lost its idealism in the time I was there. But I think it became more pragmatic and…more institutionalized…[281]

This observation is generally supported by former TVA engineers who discussed morale in their oral history interviews. Rationales involving idealism, magnanimity, and

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[277] Case, interview; Phillips, interview; E. Floyd Thomas, interview by Mark Winter, February 18, 1983, Box 11, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Oliver, interview.
[278] Phillips, interview; Thomas, interview, February 18, 1983.
[279] Case, interview, 41, 22; Oliver, interview.
[280] TVA Oral History Program, "Harry Lawrence Case" (Tennessee Valley Authority, April 5, 1983), Box 2, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[281] Case, interview, 19.

intellectual interest emerged throughout. Further, morale was unanimously considered high in the first 10-15 years of TVA, but perceptions of later morale varied.

In 1939, E. Floyd Thomas was roughly 23 when he earned a bachelor's degree in Mechanical Engineering and turned down four other jobs in his pursuit of TVA employment. "I wanted to go with TVA because I saw TVA as something that had been really meaningful to my part of the country," he recounted in 1983, "I persisted until I was able to find a [TVA] job…"[282] Once established at the Agency, Thomas found "…the opportunity of going into what was then Power Production which had been to me the most important phase of TVA's work because it was a production of power and you have to have power to help the Valley grow."[283] This echoes his oral history interview of 1981, in which Thomas noted, "It's a kind of business that gets in your blood, and you like to be a part of a business that is of service to so many people."[284] The language here is interesting: the ideal of community service metaphorically integrated institution and employee, with each inside the other.

Thomas also discussed the moral ideals of "no politics and high integrity," discussing them as though the first were a prerequisite for the second: "I hope that…those two things can again become of prime importance in TVA because without integrity your organization is no good anyway."[285] The mandatory separation from politics draws on the white-collar masculine trait of impartiality or objectivity, and it evokes the mythos of

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[282] Thomas, interview, February 18, 1983, 2.
[283] Thomas, 2.
[284] E. Floyd Thomas, interview by Mark Winter, September 1, 1981, 16, Box 11, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[285] Thomas, interview, February 18, 1983, 24.

purely objective science. Further, Thomas was implying that, as of 1983, the TVA had become more political and had lost the integrity he had identified as an employee.

Also in the TVA Power Division, Roland Kampmeier stressed the magnanimity of his (and his organization's) work through supplying cheap electricity to Tennessee Valley residents. His career track, including titles such as Chief of the Power Economic Branch, Director of Power Utilization, and Director of Power Supply, surely influenced this moral imperative.[286] "…our constant goal was to provide an ample power supply at the lowest possible cost…" Kampmeier stressed in his 1983 interview, "Everybody's work was supposed to be pointed toward that objective…I'd set myself sort of a personal goal of trying to be sure that I saved TVA every year at least 100 times my salary and…I usually felt that I was able to achieve that result."[287] The link between providing low-cost power and saving the Authority money seemed so natural or automatic to Kampmeier that he never mentioned it. He did, however, take time to explain the inspiring nature of his work. He felt "proud" in the recollection that only roughly 2% of Valley farms had electricity in 1933, and, by the time he retired in 1961, roughly 2% *didn't* have electricity: "…bringing electricity to the farms was one of our challenges and a pretty inspiring sort of thing. It really did your heart good to see what it meant to the rural people when they were able to get electricity."[288] When asked if others at TVA shared his "sense of mission," Kampmeier replied, "To a remarkably high degree, yes. The morale was exceptional…"[289]

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[286] TVA Oral History Program, "Biographical Sketch [Roland A. Kampmeier]."
[287] Kampmeier, interview, 25.
[288] Kampmeier, 43, 26.
[289] Kampmeier, 25.

Within white-collar masculinity, one is rewarded for morale tied not only to magnanimity but also to intellectual interest. Kampmeier discussed the fulfillment of his work in these terms as well. When he joined in 1933, Kampmeier admitted in the interview, his salary was low and the hours were exceptionally long, "but that was just far more than made up for by the fact that you were working with…a group of people from whom you couldn't help learning a lot and they all . . . seemed to be eager to help you learn. The job was a constantly interesting and challenging one."[290] In fact, he framed most of his career moves in terms of intellectual interest (and, to some extent, magnanimity). In 1939, Kampmeier left TVA for an associate professorship of Hydraulic and Sanitary Engineering at the University of Tennessee.[291] He "enjoyed it very much"; however, in 1941, as "it began to look more and more as though we were going to be involved in war," student enrollment dropped, while the anticipated demand for TVA power grew. "So the challenge at UT looked like it might be diminishing and the challenge at TVA certainly looked like it was going to be growing," Kampmeier explained, providing that as the reason for returning to TVA when "asked," and he "never quite got around to" returning to teaching as planned.[292] Kampmeier continued to frame the TVA's primary goal as expanded access to electricity, although "We were held back on it during the war years…When the war was over we still had the majority of farms yet to be reached. And so we really went all out on that from the mid '40s . . . through the '50s…to get that job of rural electrification done."[293] Motivation, however, waned with the accomplishment of that goal:

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[290] Kampmeier, 10.
[291] TVA Oral History Program, "Biographical Sketch [Roland A. Kampmeier]."
[292] Kampmeier, interview, 14–15.
[293] Kampmeier, 43.

> As we brought the use of electricity in the average home… mission accomplished to a degree . . . . By the time I left TVA… Many of these goals had been achieved, and I think it was . . . normal that people began to sort of take their eye off the ball to a degree. We still had a very high-caliber staff, but there wasn't quite the same degree of difference between work with TVA and working somewhere else. You didn't feel there was quite the distinction, perhaps, that there had been.[294]

Kampmeier began to contemplate leaving the TVA at this point. He later worked as a consultant to other countries, helping them develop resources and raise their standards of living, which he found very fulfilling.[295]

Edward Falck, an engineer who served as TVA Director of Rates and Research from 1933 to 1937, recalled that his next employer, at a private utility, "asked me repeatedly how the TVA got the enthusiasm of its employees…trying to get from me the secret of this excitement…"[296] This excitement seemed tied directly to vigor when Falck compared them to "the rather dull and bored attitude of most utility employees, many of whom seemed to be just resting their oars until they reached retirement age." Indeed, in contrast to his old and tired presentation of the latter, Falck pointed his employer to "the youthfulness of TVA" when compared to other electrical utilities. His main emphasis, though, lay in the motivation of magnanimity, "the New Deal attitude that we were working for the people and not for private profit. We were working to improve the community and

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[294] Kampmeier, 27.
[295] Kampmeier, interview.
[296] Edward Falck, interview by Mark Winter, May 5, 1983, 24, Box 4, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Tennessee Valley Authority, "Biographical Sketch [Edward Falck]," May 5, 1983, Box 4, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

that gave us a great sense of satisfaction. We were raising…their standard of living…which is a different motivation than just trying to make more money for stockholders."[297]

Walter F. Emmons, a structural engineer in the TVA Design Division from 1936 to 1943, and a Chief in its Civil Design Branch after the war, recalled weighing offers of other employment when TVA paid relatively little and had a questionable future (in the 1930's, and again near the end of WWII).[298] Each time, he concluded that he preferred working at the TVA despite the material considerations. Emmons tied TVA engineers' moral to intellectual engagement, with some themes of 'physical' bravado appearing in his account:

> They'd fight to the death on a point of design that they thought was right…We'd have it right up to the teeth on that….These projects were not just mechanical things, but they were part of their life. They took it home with you, too. A lot of times in the morning there was all this stuff that they'd done the night before trying to check out. They either thought they were more right than before or otherwise…they wouldn't say anything if they found out that they were wrong. But they'd come right back at you. They'd gone all over it again…it was quite a professional group. I really enjoyed them….These people dug into those projects.[299]

When asked about his promotions, Emmons again claimed to focus on "do[ing] a job" rather than seeking promotion, and—in a note of touching humility that breached emasculation—added, "I'll have to admit I was surprised when I was made division director. I didn't expect that."[300]

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[297] Falck, interview, 24.
[298] Tennessee Valley Authority, "Walter F. Emmons," March 19, 1985, Box 3, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Emmons, interview.
[299] Tennessee Valley Authority, "Walter F. Emmons," 30–31.
[300] Emmons, interview, 48.

In the Chemical Division, Travis Hignett likewise emphasized the joy of doing the work in itself. He reflected on two major WWII-era projects on which he worked that were deemed uneconomical and went unused. The idea that "a considerable amount of my work resulted in processes that were not useful… didn't bother me," he mused, partly because "I felt that doing the work that I was assigned and doing it well was an end in itself, as far as I was concerned. I enjoyed working with the people here. I enjoyed the high morale level that I found at TVA."[301]

Aubrey Wagner (nicknamed "Red") joined TVA in 1934 as an engineering aide before working his way up through the Navigation Branch to the position of General Manager in 1954 and, by 1962, TVA Chairman.[302] John Oliver recalled promoting Wagner in part because of the latter's abundant enthusiasm;[303] indeed, Wagner emphasized enthusiasm and morale throughout his own interview. In the 1930s and '40s, Wagner recalled,

> Morale was excellent. The people who came here had been looking for work or had been doing work that was below their capability. They came here on a job that was a real challenge to all of us…people knew what responsibilities they carried and they lived up to those responsibilities very well. The idea that they were helping a region to develop and grow was an inspiration to us all, of course. I think when people look for a career they want something they can feel that what they're doing is counting for something. You could see that it was counting here very well…[304]

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[301] Hignett, interview, 5–6.
[302] Aubrey J. Wagner, interview by Mark Winter, June 27, 1983, Box 12, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[303] Oliver, interview.
[304] Wagner, interview, 7.

Wagner consciously tried to cultivate and reward this high morale.[305] When asked about qualities he sought in hiring and promoting, he replied, "I looked for enthusiasm first of all, and then ability and interest in a particular field. I always wanted people who understood what TVA was all about and who believed in it…"[306]

A. B. Phillips, in Chemical Engineering at Muscle Shoals from 1942 onward, was more reserved in his recollection. When asked about morale during his TVA career, Phillips responded, "I think it was good. Well, I say that with some reservation. I guess there are always pockets of bad morale in an organization. There are people that aren't satisfied, maybe, because they haven't advanced as much, or whatever."[307] He attributed the good morale he *did* experience to the utility and wider recognition of their work: "So many of the things that we developed were being used. We had so many visitors coming in and wanting to talk to the technicians and find out what they were doing and get advice from them and so. And, you know, that means an awful lot to somebody when they see that on their job, see that result from their work. Salary's important, but recognition of your work is important, too."[308] The timing of Phillips' reservation about employee morale might support Case's generalization about the 'cool[ing] off' of TVA's idealists over time.

Donald Mattern's recollections support Case's interpretation, as well. Mattern joined TVA as an associate engineer in 1934 because of his "interest in hydro development," and he rose to positions of leadership in the Water Control Planning

[305] Wagner, 29–30.
[306] Wagner, 30.
[307] Phillips, interview, 23–24.
[308] Phillips, 24.

Division.[309] He recalled a fall in TVA morale, though he dated it specifically to 1960. Although morale was initially "very high," Mattern recalled, "the attitude changed from what you could do to do the job better to: 'When can I get a raise,' and, 'how soon can I retire'… The interest in TVA and its objectives was not held to be as important later on as it was during the beginning years."[310]

Thomas' account disputes this fall in morale, however, using relative salaries as evidence. As superintendent of the Johnsonville plant, which began operation in 1951,[311] Thomas recalled turning down a job offer from a private utility "at four times my salary," and he estimated that most private-sector superintendent positions paid three or four times as much as their TVA counterparts in the 1950s. "However, we had superintendents who liked TVA," he explained, "they liked the program, they liked the retirement, they liked the annual leave, the sick leave, and they weren't people that were interested in going with…another utility."[312] By the 1980s, he estimated, private utilities probably still paid roughly 50% more than did TVA.[313] In his 1981 interview, Thomas claimed that TVA's cost of power generation remained competitive in part "because we have dedicated people who believe in TVA's original purpose of serving the people through the job they have to do. I think this permeates the folks that generate and transmit power."[314]

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[309] Mattern, interview, 1; Tennessee Valley Authority, "Biographical Sketch [Donald H. Mattern]," 1983, Box 7, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[310] Mattern, interview, 22–23.
[311] Tennessee Valley Authority, "Johnsonville Fossil Plant," Tennessee Valley Authority, accessed March 16, 2021, https://www.tva.com/Energy/Our-Power-System/Coal/Johnsonville-Fossil-Plant.
[312] Thomas, interview, February 18, 1983, 20.
[313] Thomas, 20.
[314] Thomas, interview, September 1, 1981, 12.

The TVA's 1943 "Study of Experience" suggests that Thomas' depiction of lower wages was a trend throughout the period analyzed here, and the report similarly portrays this differential in a positive light. For the Professional Group (most of whom were engineers), the study showed that "the average initial annual salary with the Authority was $259 lower than their last annual salary prior to TVA employment, and $617 lower than their highest annual salary prior to TVA employment"; however, the Depression may have impacted this trend, as most of the analyzed employees joined TVA between 1934 and 1937.[315] The 1936 study reportedly showed a similar trend: "that many came to the Authority at a considerable financial sacrifice."[316] Lacking a thorough survey of private sector salaries for comparable positions, the 1943 report noted, "[t]here is no way of comparing the salary these employees now receive with that which they would receive if they were now in private industry…"; however, "Offers of employment which have been received by some of these employees and refused, and by a few others who have accepted, would indicate that private industry and even other Federal agencies would compensate many of them at a higher rate than they are now receiving."[317]

4.2 TVA & objectivity/indifference

Closely related to the traits of intellectualism and idealism was the conscious dedication to ideals of objectivity or indifference. TVA administrators claimed to protect TVA engineers from unacceptable political influence so that the latter might operate objectively, and

[315] Clapp to Lilienthal, Morgan, and Pope, "Study of Experience," September 24, 1943.
[316] Clapp to Lilienthal, Morgan, and Pope.
[317] Personnel Department, "Study of Experience."

administrators and engineers both supported the idea that engineers worked objectively and without political influence.

When explaining the role of the TVA's Washington Office, former General Manager John Oliver recalled, "Great care was taken to keep politics and engineering completely separate in those days. Engineers don't make very good politicians and politicians sometimes don't make very good engineers. The people concerned with Congressional relations would try to make very sure that the engineers were able to make judgments uncolored by political considerations."[318] The example he offered was that of the Widows Creek steam plant. Although the head of the Washington Office hoped the plant would be located in north Alabama, home state of one of TVA's most supportive Senators, she "never openly expressed that hope to me, and I'm certain that word of that feeling never got to the engineers. They made their decision on where that plant was going to be located on engineering judgments untainted by other considerations."[319]

Civil engineer chief & director Walter Emmons provided his interpretation of the apolitical nature of engineering culture when recalling the reaction to General Vogel, appointed TVA Chairman in 1954:[320]

> …[A]s far as their work was concerned . . . that didn't affect them at all as far as I could see. Engineers are engineers. They are not altogether in-bound, but they're not too much affected by what else is going on around. They are interested in that particular job they're working on. Maybe that's too much of an assumption, but

[318] Oliver, interview, 19.
[319] Oliver, 19–20.
[320] Erwin C Hargrove and Paul Keith Conkin, eds., *TVA: Fifty Years of Grass-Roots Bureaucracy* (Urbana and Chicago: University of Chicago Press, 1983).

> that's the way it appeared to me. They were always so damn busy with what they're doing that they just didn't…They weren't political…[321]

Red Wagner, appointed General Manager that same year,[322] recalled the TVA Board's similar dedication to objectivity when he worked with it by emphasizing their treatment of 'the facts':

> "I always figured that when you went to [the Board] with the facts and laid them out cold, they had to accept them because they were facts or else take the consequences of ignoring the facts. But when I was General Manager I usually won on the facts. If my facts were wrong, I found out pretty quick and got them straightened out. But the Board members never asked me to change something because it didn't suit their ideas of what they wanted to do. They wanted to be sure I had the facts right and that was it."[323]

Although the last two recollections discussed events that chronologically took place after the time period focused on in this dissertation, it's reasonable to assume that they reflect the culture that existed before 1953, elements of which persisted despite sudden structural changes at that point. Emmons expressed no surprise/discontinuity in the reactions of TVA engineers. Wagner, a practicing TVA engineer through at least 1941, was, through his description, showing his personal values and his respect for a TVA Board that consisted of two other engineers, one of whom (Harry A. Curtis) practiced engineering at TVA through 1938 and continued as a consulting engineer through 1949.[324]

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[321] Emmons, interview, 26–27.
[322] Case, interview, 40.
[323] Wagner, interview, 22.
[324] "Dr. Harry Curtis," July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."

4.3 TVA engineers as administrators

As previously discussed, the recruitment (and aspiration) of engineers to administrative positions speaks to amelioration of the management-expertise rift that Connell describes; it also bolsters the white-collar masculinity of an individual engineer (and the engineering profession he represents) by more strongly associating him with a high socioeconomic class. Throughout the time period in question, the TVA actively pulled those with technical expertise—a vast majority of whom were engineers—into its administrative ranks.

In 1936, the Personnel Department's report titled "The Employment and Training of College Graduates in the Tennessee Valley Authority" discussed its plans to cooperate with the University of Tennessee in offering courses in public administration. "Many of the administrators of the Authority were employed because of their qualifications in the professional or technical fields with which their sections or divisions were chiefly concerned," the report explained, "rather than because of their training or experience in public administration." It added, "Other employees have had formal training in public administration, but lack experience," and it provided no thoughts on any relative advantage to either.[325]

The Personnel Department's vague quantification of the two categories might indicate that the former group were preferred at TVA, and former Personnel Director Harry Case certainly supported this sentiment. When asked what qualities he looked for when hiring management, Case explained, "…I'd take a guy with a good engineering education and make a manager out of him easier than I would a guy with a good education in public

[325] Personnel Department, "The Employment and Training of College Graduates," 14–15.

administration or something like that. We had General Managers and [a] Chairman of the Board who came in as junior engineers. We didn't have anybody from Syracuse, you know,"[326] referring to the graduate program in public administration.[327]

Chemical engineer Ray Copson shared interesting insight into the relationship between the nature of engineering and administration in his oral history interview with Mark Winter (a TVA Records officer):

> Mr. Winter: How did you feel about being an administrator as opposed to being someone who is actively participating in the daily work [as an engineer]?
> Dr. Copson: Well, it was just part of the job, I think.
> Mr. Winter: Did you have any formal training for it, or preparation for being an administrator?
> Dr. Copson: Well, that's my thinking, clearly to some extent in an engineering education as against a strictly scientific one, but I had never had any real training in administration as such.[328]

Fellow chemical engineer A. B. Phillips provided a different assessment of that lack of "real training"[329] for engineers-turned-administrators:

> Mr. Winter: Did you have any problems making the transition from practicing engineer to administrator?
> Mr. Phillips: …yes, it was sort of a problem. We sure didn't have much training to go from a technical job to an administrative job then. But it was a lot simpler then, too, because there . . . wasn't a bureaucracy and so on that we have now, all the rules and that sort of thing...[330]

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[326] Case, interview, 30.
[327] "Maxwell History: The Founding and Growth of the Maxwell School," Syracuse University, accessed March 19, 2021, https://www.maxwell.syr.edu/deans/Maxwell_History/.
[328] Dr. Raymond L. Copson, interview by Mark Winter, September 7, 1983, 11, Box 2, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[329] Copson, 11.
[330] Phillips, interview, 14.

Several of those interviewed expressed great personal and institutional pride in Red Wagner's rise from engineering aide to General Manager and TVA Chairman, in large part because he was an engineer. Harry Case volunteered this information more than once in his interview, noting that the one General Manager who did not come from the Personnel Department "came through Engineering."[331] "'Red' Wagner was a natural choice for the General Manager's office," John Oliver mused, "and I think that if I made any lasting contribution to TVA it was the decision to pull him out of engineering and put him in the General Manager's office."[332] When Wagner was queried about the ease of his transition from engineering to administration, his answer spanned consideration of civil engineering as well as his unique personality, and it de-emphasized a focused expertise:

> I figured the engineering background I had, particularly as a civil engineer, gave me good training for management positions because it taught me to analyze things factually and deal with them on that basis. The transition was not particularly hard for me. I had done some detailed engineering, drafting, and some design work and I didn't particularly like it. I guess I'm more of a generalist than a detail man. So I enjoyed it very much.[333]

4.4 Camaraderie, Civility, Cooperation

TVA departments and employees generally pursued cooperation over the physical masculine trait of competition; despite examples discussed in chapter 4, the Agency arguably valued and aspired to the former more highly. Former General Manager George Gant claimed, for instance, that the Power Division actually did not want to dominate the TVA. Discussing the post-WWII expansion of the Power program, Gant credited external

[331] Case, interview, 36, 30.
[332] Oliver, interview, 22.
[333] Wagner, interview, 6.

influences despite a common internal mission. "The Power departments themselves were aware of that situation, and concerned about it," he claimed,

> They and all of us were determined that the Power program would not, and should not, submerge the TVA as a whole… Both the people in agriculture and those in Power and in other areas recognized quite well, there was no argument, that the foundation of their program rested in the concept of the integrated development of the resources of the Tennessee Valley…
> Mr. Winter: So you didn't have to be concerned about one area trying to dominate TVA.
> Dr. Gant: No. On the contrary our concern was that the natural weight, in terms of money, investment, personnel, was going to be so overwhelmingly on the Power side. But there was no debate about the concept of it.[334]

Within the Power Division, Kampmeier noted a cooperative spirit between those in charge of hydroelectric power and those charged with developing steam plants. "[I]t was obvious" to entire division, he recalled, that hydroelectric plants were insufficient for the rapidly expanding postwar energy demand "and we had to find other sources."[335]

On the individual level, many TVA engineers were far more likely to cooperate, or at least to present themselves as cooperative and subject to a meritocratic system. Harry Case provided a summary of this sentiment. "We all had the same objectives. We were not all that ambitious to elbow somebody out of the way there to get ahead," he explained, "The interests of the TVA were the predominant factor, the organizational rights, and so it was natural to get along with the people."[336] Hignett provided a more balanced interpretation: "Everybody at work actually cooperated…Of course, everybody…wanted to advance and I recognized that in TVA advancement mainly depended on doing your

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[334] George F. Gant, interview by Mark Winter, September 7, 1983, 16–17, Box 4, folder 4; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[335] Kampmeier, interview, 39–40.
[336] Case, interview, 43.

present job well and I suppose that's the reason for cooperation. I can't think of a better one."[337]

A couple of engineers presented themselves as humble or gracious when discussing promotions. Emmons emphasized on a couple of occasions that he didn't expect his major promotions.[338] When fellow engineer George Palo was promoted to the head of a combined division during its reorganization, Emmons felt "that I had lost my chance there," but he added, "Not that I felt bad about Palo coming in because he was a good friend of mine and also I thought he was an excellent, highly, top engineer, so I was very pleased with that. And I never had any trouble about it."[339] Emmons summarized his career achievements very simply: "I wanted to head up a little group and then I wanted to head up a bigger group. Most of those things, I didn't go out directly to do that. I went out to do a job. Although I'll have to admit I was surprised when I was made division director. I didn't expect that."[340] Red Wagner presented a similar mindset when discussing his promotion from head of Navigation to Assistant General Manager. "I really don't know," Wagner said when asked why he felt he was picked for the job,

> I had worked with the General Manager and the Washington office to some extent…I had worked out some data for them, background information on the navigation program, which I guess they liked. Maybe [that] had something to do with it, I don't know. They say you always have to be there when the lightning strikes; I must have been there when the lightning struck.[341]

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[337] Hignett, interview, 10.
[338] Emmons, interview, 20, 48.
[339] Emmons, 49.
[340] Emmons, 48.
[341] Wagner, interview, 10.

The value of cooperation over competition also appears in how engineers discussed others, complimenting the ease of working with certain men and criticizing those difficult to work with. When a prospective TVA employee wrote Harry Curtis in 1940 to ask why Curtis had left his position as Chief Chemical Engineer, Curtis replied that it was not for any reasons that would discourage someone from working there, emphasizing that John McAmis, in particular, was "a very likeable and shrewd Scotchman."[342] Emmons noted that Wagner was "a fair guy" who "knew the boys in all the different divisions," and added, "Glad to work with him."[343] Throughout his interview, Kampmeier noted several people within Power that worked very well with him, specifically, or that were generally "very fine…to work with."[344] Although not an engineer, Harry Case offered similar descriptions of engineers, mentioning Red Wagner's "infinite patience"; calling Wessenauer "a terribly easy man to work with"; and describing Clarence Blee as "a great fellow…a fine engineer and a very real gentleman, too."[345]

When asked to describe what they valued in those they promoted to managers, the engineers interviewed overwhelmingly included cooperative 'people skills,' often emphasizing this over technical competence or industriousness. "I always looked for people who tried to understand other people and to be able to give and take," Emmons declared, mainly crediting that to the inchoate nature of design work. "I looked for people that…had an understanding of personal relations because I worked with such, you know, there's no such thing that it had to be this way," he mused, "You were supposed to find out

[342] Harry A. Curtis to L. C. Wheeting, March 30, 1940, Box 7, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[343] Emmons, interview, 43.
[344] Kampmeier, interview, 8, 76–78.
[345] Case, interview, 39, 22–23, 44.

or develop the way. So if you didn't have an understanding of what they were going through or what not I didn't think you ought to be in charge of them."[346] In the Chemical Division, Hignett and Phillips each pointed to the "need…to find someone who will get cooperation," as Hignett put it.[347] "[H]e had to be able to relate well to people, get along well. I think that's always very important," Phillips said. Wagner, meanwhile, provided a specific order: "I looked for enthusiasm first of all, and then ability and interest in a particular field."[348]

This ideal of a cooperative spirit existed at TVA from its earliest days, and it probably impacted those who were hired. An internal December 1935 memo titled "Candidates for the Head of Operating Division, Electricity Department" provides frank assessments of three applicants that illustrate the balance that the Personnel Division sought between a desire for flexibility and responsiveness to direction on the one hand and assertiveness on the other. The top choice at this moment was one Charles Lee Karr of New York City. His "steady progressive experience," which included a geographical variety and familiarity with hydroelectric plants, put Karr at "a technical advantage over other candidates"; however, the assessment of his personality was a mixed bag. "Candidate does not possess the personal presence which the responsibilities of past positions indicate," the assessment begins,

> He is apparently a competent practical operating man, rather naive beyond his technical field. Partly for this reason I think he could be subjected to supervision and direction more easily than one of more depth or independence…He is not of the hard or aggressive type, but age and physical energy are in his favor.

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[346] Emmons, interview, 47.
[347] Hignett, interview, 19.
[348] Wagner, interview, 30.

Karr's potential "subject[ion] to supervision" was a perceived advantage, indicated by the descriptions of the two other candidates. That of Alvan H. Stack of Florida opens, "Indication of the same weakness (inflexibility)…as C. L. Karr," before adding, "More aggressive and indication of greater breadth." J. Gardner Menut of Clifton Forge, Virginia, came in third, perhaps because "His application and letters as well as references indicate individualism. Neither this nor his 'timidity' seem to affect demonstrated administrative ability—though he may be a better organizer than steady executive."[349]

General discussion at the 1934 Personnel Division Conference suggests that this desire for balance also impacted retention and promotion. One proposal addressed "the need for instilling in employees the feeling of responsibility for analyzing the effectiveness with which they are doing their job." Employees, it was felt, should "frankly discuss the matter with their immediate supervisor" if at any point "they do not feel that they are making the contribution on their present job that they could make on another job-- whether up or down the scale…" As an extension or response to this, an attendee brought up "the need to protect individuals against themselves by checking carefully on whether they were afflicted with either an inferiority or a superiority complex."[350]

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[349] A. S. Jandrey to C. L. Richey, "Candidates for Head of Operating Division, Electricity Department," memorandum, December 9, 1935, Box 397, folder 10; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[350] Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report of the Personnel Division Conference Held at The Andrew Johnson Hotel Knoxville, Tennessee September 29-30, 1934," 1934, Box 896, folder 10; Administrative Files, 1933-1957; Record of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

4.5 TVA engineers as fathers and husbands

As patriarchs of their own families, engineers projected similar themes of magnanimity and leadership when discussing their wives and children. Several mentioned having a wife and multiple children each while at TVA,[351] and this was considered normal at TVA in this era, as indicated by discussion around TVA Area Education Officer Ira Chiles' unmarried status in personal correspondence.[352] Interviews and engineers' writings rarely dwelled on their relationships with their wives and children, but even brief references can indicate their perceptions of such relationships.

Some displayed the desire to provide stability for their wives and children, whether this was contingent on TVA employment or despite it. Kampmeier recalled driving across the state of Iowa the day he received TVA's offer of employment in order to marry his fiancé the very next day, implying that this was spurred on by the promise of employment. He reported to work two days after that.[353] Although Kampmeier's wife moved with him for his employment, others left their wives and children for some time while they settled into an unfamiliar and relatively 'frontier' environment (and environment discussed further in the chapter on frontier masculinity). Walter Emmons left his wife and two children in Florida for the first two months of his initial TVA employment in 1936. His account pointed to the TVA's help in finding a place to live as well as uncertainty about whether he would "stay up there," a reasonable concern in light of some difficulty finding

[351] Kampmeier, interview; Emmons, interview; Wagner, interview; Thomas, interview, February 18, 1983; Allbaugh, interview; Curtis, "Handwritten Autobiographical Account."
[352] "Personal Letters, April 16, 1937 - May 19, 1948," n.d., Box 6, folder 44: Ira Chiles Papers, 1936-1951, MS.1019;, University of Tennessee Libraries, Knoxville, Special Collections.
[353] Kampmeier, interview, 2–3.

employment in the preceding years.[354] When Harry Curtis joined the TVA in fall 1933, his wife and younger daughter remained in Woodbury, N.J. for nearly seven months "[s]ince it appeared that I was likely to be traveling a good deal between Knoxville, Muscle Shoals, Washington and elsewhere..." Curtis wrote, indicating a further complication to establishing a stable household.[355]

Other accounts show a similar fondness and a sense of mutual support. Thomas mentioned his wife and children's concern for his well-being,[356] while Wagner recalled his wife and children going to watch him practice softball in the evenings with the company team.[357] Kampmeier also mentioned Wagner's children as an illustration of the two men's close relationship. Kampmeier knew Wagner well, the former explained, "because he and I were practically next door neighbors for a while. Our families grew up together. I've got any number of snapshots of his kids and he of mine."[358] Accounts by and about Harry Curtis likewise showed a fondness for his wife, children, and grandchildren.[359]

Perhaps detracting from their patriarchal images, some discussed concessions made out of duty to their wives. Dr. Leland Allbaugh, former Chief of the Agricultural Relations

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[354] Tennessee Valley Authority, "Walter F. Emmons," 3, 2.
[355] Curtis, "Handwritten Autobiographical Account," 242–43. His older daughter was in college at this point. See Curtis, 66; Harry A. Curtis to Mrs. Edythe H. Taylor, January 18, 1939, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[356] Thomas, interview, February 18, 1983.
[357] Wagner, interview.
[358] Kampmeier, interview, 78.
[359] Harry A. Curtis, "Handwritten Autobiographical Account," 1962, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; H. A. Curtis, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Gordon R. Clapp to Mr. L. L. Huntington, March 5, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Jeanne Webber to Harry A. Curtis, November 15, 1951, Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

Test Demonstrations Branch and Director of the Division of Agricultural Relations, discussed his enjoying retirement from TVA, which included "doing just exactly what I want to do, except what my wife asks me to do, part of the time."[360] The comment might invoke a small chuckle, owing to a long tradition of matrimonial humor that upends the traditional patriarchal order for comedic effect. When directed at others, this humor normally serves to degrade them by robbing them of some of their gendered status, as when racist humor at the turn of the 20th century commonly depicted "overbearing" Black women and their "weak and henpecked" husbands.[361] By extension, when such humor is self-deprecating (as is the case here), it illustrates security in one's status and the lack of fear that it can be degraded.

Edward Falck also discussed fulfilling duties to his wife, though in a more dramatic context: each left TVA for the other. TVA Chairman David Lilienthal had hired Falck as Director of Rates and Research, and Falck felt somewhat torn when conflicts between Lilienthal and TVA Director A. E. Morgan became heated. Although Falck had worked with both men, he recalled,

> I became more reticent in reporting to Lilienthal that I'd had conversations with Morgan. I was somewhat embarrassed by the fact that the woman who later became my wife was Dr. Morgan's closest secretary and personal assistant and very loyal to Morgan. She took on a rather critical attitude towards Lilienthal, reflecting feelings and emotions of her boss. I was trying to maintain loyalty to Lilienthal…[362]

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[360] Allbaugh, interview, 32-32 cont'd.
[361] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995), 28.
[362] Falck, interview, 11.

The couple found it "increasingly difficult" to date during the Board's now-infamous rift (discussed below), and they likely felt the need to keep their engagement secret for a time.[363] Their solution was very equitable, especially for 1937. "When we announced our engagement to be married, I concluded that after we did get married I would have to resign from the TVA and my wife would have to resign also, which is what we did," Falck explained. Falck sacrificed not only that enviable position for marital integrity;[364] it appears he also sacrificed his career in the public sector. He found that he had been blacklisted from Federal work, and he remained suspicious through 1983 that Lilienthal and Marguerite Owens were behind it.[365]

Roland Kampmeier also met his wife Silbia when she was employed at TVA in technical positions during World War II. "We found her by scouting around trying to find girls who have math majors and offered her a job and got her working at TVA," Kampmeier recalled, "and after the years went by she was doing engineering work, had graduate engineers working for her, and so on."[366] Note that multiple years passed in which Silbia was employed; she did not immediately marry Roland and resign. Note also that Roland, in all his pride for her, described Silbia's work as "engineering work" but stopped short of labeling her an engineer. "[I]t was almost unheard of for any women to study engineering in those days," he had pointed out in explaining the pursuit of women with math degrees.[367] This may illuminate his personal valuation of academic training and certification.

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[363] The label-conscious chronology Falck provides discusses "dating my fiancee" before announcing the engagement. See Falck, 13.
[364] Falck recalled earning $1,800/year on joining TVA in 1933 and "about $6,000 a year" by the time he resigned. Falck, 11.
[365] Falck, 22–23.
[366] Kampmeier, interview, 50.
[367] Kampmeier, 50.

Adding to an apparent trend of 'strong-willed' wives, Kampmeier also recalled "one chap" in the office of the Power Division "whose wife was accused of having joined the Communist Party" during McCarthy's investigations in the early 1950s.[368]

4.6 TVA as a metaphorical family

Associations with magnanimity and fatherhood frequently combined when TVA engineers used familial metaphors to describe dynamics within TVA. This was typical for the time: As Nikkie Mandell argues in *The Corporation as Family*, welfare managers of American corporations between 1890 and 1930 consciously introduced a relational model based on the Victorian family, with employers as father figures and employees as children. Although both parties rejected portions of this model and eventually abandoned it in favor of a 'personnel relations' model, it is reasonable to assume that this familial image persisted to some degree and was invoked when advantageous.[369]

When framed in gender-neutral terms, the metaphor was clearly intended to emphasize the close-knit and magnanimous nature of TVA culture. A. B. Phillips depicted operations in TVA's early days as casual family discourse, with "a staff that had been quite small and you knew everybody in it, you know, and it was sort of like a family thing ... the budget staff then was three or four people that we'd talk to. We'd go in and talk to them every time we went up there and talk over our problems on a real informal basis. They expected us to do that…"[370] Walter Emmons recalled the unpleasant restrictions of

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[368] Kampmeier, 52.
[369] Nikki Mandell, *The Corporation as Family: The Gendering of Corporate Welfare, 1890-1930* (Chapell Hill and London: University of North Carolina Press, 2002), Ebrary e-book.
[370] Phillips, interview, 34.

Eisenhower era budget cutbacks, when he was Assistant Chief of the Civil Design Branch. "I wasn't concerned about my job, but I was concerned about the people…You know, it gets to be like a family," Emmons explained, "Everybody looks after everybody else."[371] He pointed to methods they used to shift staff around to keep as many employed as possible, often getting other departments to hire terminated employees.[372]

Rates engineer Edward Falck used similar terms to describe the TVA social life in the 1930's. "TVA in those days was like a great big family," Falck said, "Everybody knew each other and everybody knew what everybody was doing…TVA people ate with each other morning, noon, and night and played with each other on weekends…" This was apparently not all good. Falck pointed to the TVA's correlated isolation from the rest of the Valley as well as a possible double-edged sword of any close community: that "anything that ever happened that affected TVA, changes in position or responsibility, was gossiped around within the TVA family."[373]

When the family metaphor made use of gendered terms, it shed some further light on these themes of magnanimity and fatherhood. In 1948, W.H. Mitchell wrote Harry Curtis to congratulate him on his nomination to the TVA Board as well as his impending return to TVA. "We have known you and admired you and have had confidence in you for more than 25 years and you have been a big part in the family of T.V.A.," Mitchell wrote, "I guess the better word (instead of welcoming you to a big job) is to welcome a big brother

[371] Emmons, interview, 22–23.
[372] Emmons, 23.
[373] Falck, interview, 13–14.

into a closer affiliation with the family."[374] The 64-year-old Curtis had certainly commanded plenty of respect in his former capacities as Chief Chemical Engineer and an authoritative consultant to TVA,[375] so it seems fitting that one would have related to Curtis as an older brother. That said, given Curtis' impending Board position (as symbolic patriarch of the Agency) as well as his age & persona--already having been nicknamed "Old Man Harry" by his employees some 10 years prior[376]-- it is perhaps notable that Mitchell stopped at "big brother" for several possible reasons.

Mechanical engineer and Manager of Power Operations Floyd Thomas likewise took the gendered family metaphor only so far. In his 1983 interview, Thomas discussed management's dedication to safety. "You know, if you are interested in your people, you have got to be interested in their safety," Thomas opined, "By showing a true and an honest interest in their safety, employees have a feeling that there is a patriarch up there who is interested in 'my safety' as my wife is and my children should be. It gives you a family feeling because the organization cares for the individual, conversely the individual cares for the organization."[377] Given that these were spontaneous oral remarks, one cannot expect the same degree of consistency in metaphors as one might from premeditated writing. Still, the spontaneously mixed metaphor provides some clues as to the importance of Thomas' role as father and patriarch. Although he affords his higher-ups at TVA (at any theoretical

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[374] W. H. Mitchell to Harry A. Curtis, May 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[375] D. A. Williams to Hon. Edward J. Thye, June 4, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."
[376] Curtis to Taylor, January 18, 1939; Edythe H. Taylor to The Honorable Harry S. Truman, Copy, February 4, 1966, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[377] Thomas, interview, February 18, 1983, 25–26.

point) the role of "a patriarch up there," he does not go so far as to explicitly link their care for him with *his* care for his wife and children: that would make him the metaphorical wife or child to his employer. Rather, he adds a new relationship, pointing to the discursive care felt by both organization and employee.

4.7 Example: The First TVA Board and Its Feud

Familial themes naturally appeared in the feud within the TVA Board, a period of "fratricidal warfare, inside in the family," as TVA attorney Beverly Burbage recalled.[378] The introductory chapter provides an overview of this feud, which pitted Chairman Arthur E. Morgan against his two fellow Board members, agricultural expert H. A. Morgan and legal expert David Lilienthal. Here, TVA engineers' accounts of the three Board members and their feud shows a great deal about how they expressed traits of white-collar masculinity. Secondarily, the content of those accounts illuminates TVA culture overall, since—as Nancy Grant points out—the Agency's "decentralized administrative structure made administrators' personal views and beliefs particularly important."[379]

The largely self-educated A. E. Morgan had worked as a flood engineer and as president of Antioch College, and he had gained a reputation as a visionary planner by the time Roosevelt selected him for TVA chairmanship in 1933, at age 54.[380] His intentions for TVA were expansive and addressed social reform as much as economic and environmental development, generally through top-down approaches often tinged with the

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[378] Beverly Burbage, interview by Mark Winter, September 15, 1983, 14, Box 1, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[379] Nancy L. Grant, *TVA and Black Americans: Planning for the Status Quo* (Philadelphia: Temple University Press, 1990), 35.
[380] Lowitt, "The TVA, 1933-45"; Grant, *TVA and Black Americans*.

paternalism associated with white-collar masculinity.[381] In a 1934 address to the Personnel Department, for example, A. E. Morgan provided "an illustration of where the New Deal begins." The normal approach to building a dam, he explained, "would say, 'This is just building a dam. We will begin to live after the dam is done. We will build some shacks, and around town will be gambling houses and houses of prostitution.'" By contrast, the TVA "wanted to spread employment so we have shorter hours, and with short hours the men will have time well spent or badly spent. If we can help them to have that time spent so that they will be more effective citizens, that is a good place to start the New Deal as anywhere."[382] ("Building character was more important to Morgan than building dams." writes Richard Lowitt.[383])

In the same speech, A. E. Morgan also illustrated his penchant to cast himself as a groundbreaking visionary in his dedication to quality of work.[384] "I have never started on a job of any importance in all my life but what in trying to do that job the way it should be done, I soon found myself having to pioneer unknown paths, because so few jobs are done as well as they can be…" he lectured, "The way a job has been done isn't the way it should be done."[385] Right or wrong, this attitude ruffled feathers of those favoring alternate or compromising approaches, perhaps inevitably, and his response to conflict with his

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[381] Gant, interview; Lowitt, "The TVA, 1933-45"; Grant, *TVA and Black Americans*.
[382] A. E. Morgan, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 9.
[383] Richard Lowitt, "The TVA, 1933-45," in *TVA: Fifty Years of Grass-Roots Bureaucracy*, ed. Erwin C Hargrove and Paul Keith Conkin (Urbana and Chicago: University of Chicago Press, 1983), 40.
[384] See Lowitt, "The TVA, 1933-45" on complaints about A. E. Morgan's "Messiah complex."
[385] A. E. Morgan, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 4.

colleagues and Roosevelt's inquiries eventually drove the President to fire A. E. for contumacy in 1938.[386]

Those who remained and thrived in TVA long enough to cooperate in the TVA oral history program of the 1980's generally held negative opinions of A. E. Morgan—a logical example of selection bias. Arguments reportedly persisted between those loyal to A. E. Morgan and those loyal to the other directors after A. E. left,[387] and one can imagine that they resolved in favor of those in power at the time. Edward Falck—who left in 1937 to marry A. E. Morgan's personal assistant—provided the most gracious image of A. E. Morgan.[388] Unanimously, however, these perspectives present an embodiment of such pure white-collar masculinity that they found fault with it. In doing so, they confirm the need for a masculinity to hybridize in order to meet approval in TVA engineering culture.

Falck recalled A. E. Morgan from private meetings with him. His description, then may have been the most telling and personal of all engineers':

> Morgan was an extremely formidable person. He reminded me of a cross between a college president and a Presbyterian minister. He had a kind of forbidding asceticism. He was the kind of a man you imagined never drank, never smoked a cigarette, or never used profanity, and he had a kind of an austere mien or countenance which made you feel that you were with a very pious person who had a very strict moral code and who evaluated everybody that he met on a plain of quasi-religious moral evaluation or appraisal. I never felt entirely comfortable as an ambitious young man in Morgan's presence. I admired him greatly but I always had a feeling of uneasiness or maybe embarrassment.[389]

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[386] Lowitt, "The TVA, 1933-45."
[387] Burbage, interview, 15.
[388] Falck, interview.
[389] Falck, 5–6.

Falck also noted that A. E. Morgan was "much older" than him and Lilienthal, and he partly attributed his discomfort to the age difference.[390] As we will see in the chapter on physical masculinity, most of the trait displayed above, while laudable in the archetype of white-collar masculinity, were considered pointedly emasculating in the physical masculine archetype.

Red Wagner's account indicates that not all engineers discounted A. E. Morgan's lack of physical masculinity. "He had a pretty good following among the engineers because he was an engineer of renown," Wagner recalled, "but I think he was something of an idealist." Wagner elaborated: "He was very intense in everything that he did and also very, very fixed in his own opinions. He was kind of a man, I think, who had to lead an organization or else he couldn't work in it."[391] This interpretation of A.E.'s idealism was neatly summed up by Beverly Burbage when calling A. E. "a theorist."[392] Wagner later provided an example that illustrated another side to A. E. Morgan's counter-engineering idealism. "I remember there were exhibits of nuts along the way," Wagner told of his first few years at TVA, "It was interesting that, I think, this was largely Arthur Morgan's interest. He thought that the people of the area would make a living by selling nuts." The TVA "forestry people had developed a hican which was a cross between a hickory nut and a pecan," and they exhibited this alongside other nut crop developments. "Mountain people

[390] Falck, 6.
[391] Wagner, interview, 4.
[392] In full, Burbage said that A. E. Morgan "was, to me, a theorist, and he was also an egoist." Burbage, interview, 14.

couldn't make a decent living picking up raw nuts but they were interested in it," Wagner explained of the novelty, "It also showed that TVA was willing to try some things."[393]

David Lilienthal, at thirty-four when he joined the TVA Board in 1933, was significantly younger than his two colleagues. By that point, the Harvard-educated lawyer had been influenced by the progressive politics and public relations of Governor Philip La Follette during Lilienthal's appointment to the Wisconsin Public Utilities Commission.[394]

Although Lilienthal is frequently interpreted as A. E. Morgan's "opposite in ideology and personality,"[395] Red Wagner painted a portrait of a man with striking similarities to A. E. Morgan. Like A. E., Lilienthal "was also an intense person and also a person who felt that he had to lead an organization or he couldn't work in it. He was interested in the people of the area, considerably, and the people in the organization, too." Although it's difficult to tell at what point in Wagner's account he stopped comparing the two men, the distinction may have lain in the degree of Lilienthal's dynamism: "He was an inspirational leader, the kind of fellow who had ideas one a minute and [4] ninety-nine of them were bad and one was good."[396] The necessary discernment was delegated: Wagner's account corroborated with others' in describing the role of Gordon Clapp, the General Manager. "[T]he function that Gordon performed for Dave Lilienthal," Wagner said, "was to tell him which of his ideas were good and which were bad and sort them out and then help him carry out the good ones."[397]

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[393] Wagner, interview, 31.
[394] Lowitt, "The TVA, 1933-45."
[395] Grant, *TVA and Black Americans*, 29; Hargrove and Conkin, *TVA: Fifty Years*; Thomas K McCraw, *TVA and the Power Fight, 1933–1939* (Philadelphia: JB Lippincott, 1971).
[396] Wagner, interview, 4–5.
[397] Wagner, 5.

Edward Falck had a similar impression of Lilienthal. "I thought he was a very brilliant, dynamic, leader-type individual," Falck explained, latter adding, "He was also a kind of exciting person because he had many, many ideas …"[398] When first meeting Lilienthal, Falck recalled that the former "was, then and always, in a great rush with many appointments."[399] Falck greatly appreciated Lilienthal's background in electric utility regulation—the two apparently shared detailed knowledge of "the debacle that had surrounded the Insull empire"—and Lilienthal's "understanding was remarkable and very impressive to me."[400] Falck additionally provided an image of a leader with more 'people skills' than A. E. Morgan.[401] Further, while he recalled feeling "uneasiness" around A. E., Falck said, "I found it was very easy for me to talk to Lilienthal…and I found him a very agreeable person to work under."[402] Lilienthal's relative vigor and approachable image set him apart from A. E. Morgan, and these traits are associated with physical masculinity.

Case likewise presented Lilienthal with both white-collar and physical masculine imagery:

> Lilienthal was the kind of emotional leader that an organization wants: A believer, deeply committed, highly articulate, highly intelligent, hard working. The kind of man who, as I say, inspires an organization with his emotional fervor combined with a great deal of knowledge and intellectual competence. He was egoistic, almost messianic at times and he had to have some good sensible people around him who would bring him down to earth once in a while…[403]

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[398] Falck, interview, 4.
[399] Falck, 2.
[400] Falck, 4.
[401] Falck, 11.
[402] Falck, 4.
[403] Case, interview, 7.

To Case, the most important of these "sensible people" was probably Marguerite Owen, the head of TVA's Washington, D. C. office, "who knew Lilienthal well, [and] probably saved him from boners which could have come from his egocentricism [sic], I believe, more than once."[404] Gordon Clapp served in Case's account as a point of contrast to and an example of Lilienthal's egoism. "Lilienthal was just a little bit too much concerned with Lilienthal and Clapp was not," Case explained.[405] "Now, he [Clapp] and Lilienthal made a great pair, I think. I don't think Lilienthal was ever willing to admit how great a contribution Clapp made… Lilienthal must have appreciated Clapp," Case mused, "Well, of course, they went together in business later so he obviously had great respect for him, but in writing his autobiography he forgot to mention him, which is rather remarkable."[406] Even when requested to write an 'in memorium' piece after Clapp's death, Case claims that Lilienthal first refused, and then eventually contributed "a little piece for it, which…wasn't very good…So he had that blind spot about praising other people too much."[407]

Harcourt A. Morgan was sixty-six when he was tapped for the TVA Board in 1933. Born in Canada, H. A. Morgan had spent almost all of his career in the American South and was "viewed in the valley as a native."[408] As president of the University of Tennessee upon his TVA appointment, H. A. was familiar with the problems and population of the Valley, and agriculture remained his primary concern through his career.[409] Although none

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[404] Case, 10.
[405] Case, 8.
[406] Case, 9.
[407] Case, 9–10.
[408] Grant, *TVA and Black Americans*, xxv; Lowitt, "The TVA, 1933-45."
[409] Lowitt, "The TVA, 1933-45."

of the engineers in this study provided personal perceptions of H. A. Morgan, former General Manager George Gant and former TVA Attorney Beverly Burbage both discussed the respect they had for him. Gant recalled that "Dr. H. A. Morgan appealed to me and I think most of the rest of us as a wise and thoughtful man."[410] Burbage remembered H. A. Morgan as "a fine gentleman. He had the practical approach. He knew how to get along with the political power structure without letting it control him."[411] These comments suggests a fairly white-southern hybridization of white-collar and physical masculinities, identifying and cooperating with the prevailing sociopolitical 'power structure' while simultaneously performing an image of down-to-earth practicality and independence.

Engineers' perceptions of the actual feud between Board members emphasized personality clashes, often due to similarities. Kampmeier's explanation for the row was simple: "…all three of the original Board members were certainly very capable people and it was just a case of Arthur Morgan and Dave Lilienthal being such strong people that there was just hardly room for both of them on the same three-man board."[412] Wagner, after explaining A. E. Morgan's stubborn intensity and need to be the leader (as we saw above), immediately added a reference to Lilienthal: "Unfortunately, he [A. E. Morgan] was on the Board with another fellow a lot like that and they clashed and Arthur Morgan had to leave."[413]

Falck's interpretation, although also a brief generalization, held a bit more nuance, and it showed a respect for A. E. Morgan's commitment to meritocracy. Falck believed

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[410] Gant, interview, 4.
[411] Burbage, interview, 12.
[412] Kampmeier, interview, 13.
[413] Wagner, interview, 4.

that, within the first months of TVA operation, "Everybody knew…that Lilienthal and Morgan were having disputes which were either policy or personality disputes, or a mixture of the two."[414] When the conflict "deepened," Falck recalled, ""It appeared that Lilienthal's supporters were going around trying to obtain political support for Lilienthal, and Morgan, who was not much of a politician, probably did not try to mobilize opposition to Lilienthal except his own opposition," communicating directly to the President, and "perhaps" one or two people close to the latter.[415] Falck continued to discuss "some of the less ethical people who were acting, so to speak, as public affairs assistants to either of the two Directors," implicating these "public relations [men]" in attempting to damage the reputation of their rival Director through the media and political networks.[416] Falck never directly implicated either Director. Once Falck and his fiancé resigned from the TVA, "…we had our wedding…of course everybody in the TVA was invited that we knew, Dr. Morgan came to the wedding ceremony but Lilienthal did not and I felt that was very significant."[417] Recalling that Falck suspected Lilienthal of blacklisting him, we may note that Lilienthal failed to remain objective, meritocratic, or magnanimous in Falck's eyes.

One last piece of what appears to be a common retelling of the Board feud within TVA involved the issue of contumacy. "… suddenly the President fired Morgan for contumacy. Nobody knew what contumacy meant," Falck recounted, "They rushed to the dictionary and found out that it meant failure to carry out policies of higher echelon officials or failure to follow military command-type of discipline."[418] Beverly Burbage told

[414] Falck, interview, 10.
[415] Falck, 11.
[416] Falck, 11.
[417] Falck, 13.
[418] Falck, 13.

very nearly the same story, despite his being from a separate department from Falck's.[419] This humorous detail illustrates elements of physical masculinity and frontier masculinity, contrasting the TVA with the wordy intellectuals inhabiting the U.S. capitol.

4.8 Systemic Sexism and Women Employees

Recorded history and personal accounts of women's employment at TVA reflect engineer's dedication to theoretical meritocracy and gentlemanliness. As we see in this section and the section on systemic racism, these performances allow for systemic bias against certain groups while maintaining an individual's respectability as a white-collar man.

As Nancy Grant shows, the TVA failed to employ many women, white or Black, until World War II. In the early years, "White women were employed as nurses, dieticians, cafeteria workers, charwomen, clerks, and secretaries…Black women were employed primarily as custodians and cafeteria workers…Other black women worked in the offices of black job interviewers."[420]

Although oral history suggests that sexual relationships with women on staff were frowned upon,[421] more than one engineer met his future wife while both were employed at TVA.[422] This points to a code of chivalry—but not one that was assumed to extend beyond the white race, as seen by the fact that the Agency's "first black secretary was employed in

[419] Burbage, interview.
[420] Grant, *TVA and Black Americans*, 70.
[421] See Beverly Burbage's account of one "Mr. Barr." Burbage, interview, 5.
[422] Falck, interview; Kampmeier, interview.

the office of the head of Negro training to avoid the socially awkward problem of having a white secretary working for a black male professional."[423]

"As was the custom in the Southeast," no women of either race were employed as manual labor or as skilled tradespersons, "even during the World War II labor shortage."[424] Women were also absent from professional positions—including as engineers or chemists—and management positions other than office supervisors.[425] Marguerite Owen, discussed below, was the exception.[426] As Personnel Director Harry Case emphasized, "it was a man's organization."[427]

This was normal for a federal institution dedicated to technical work at this time. In 1939, only 1.5% of women employed by the federal government were professionals, and they were mostly librarians or home economists. 14% held subprofessional jobs, such as nurses or home-management agents, and 73% were clerical workers. The Civil Service allowed race- and sex-specific requests at this time.[428]

In WWII, as "the absence of 16 million men who served in the armed forces" created a civilian labor vacuum, the number of American women in the labor pool increased 50%--or by about 6,640,000—between 1940 and 1945, and industries sought

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[423] Grant, *TVA and Black Americans*, 70.
[424] Grant, 70.
[425] Grant, 70.
[426] Hargrove and Conkin, *TVA: Fifty Years*; Case, interview; Grant, *TVA and Black Americans*.
[427] Case repeated this line twice in the same paragraph. Case, interview, 29.
[428] Rachel Fesler Nyswander and Janet M. Hooks, "Employment of Women in the Federal Government, 1923-1939," *Bulletin of the Women's Bureau*, no. 182 (1941), https://books.google.com/books/download/Employment_of_Women_in_the_Federal_Gover.pdf?id=99SZ1H2sjDgC&output=pdf.

them out.[429] This included the TVA, which began to employ women "in greater numbers, operating compressors, watching gauges, and checking the proportions of components utilized in making ammonia."[430] An April 1942 press release announced its "conducting a training program to enable women to fill additional positions" as part of its efforts to address "shortages in trained manpower for war work… in the face of a greatly increased volume of work, induction of hundreds of TVA employees into the armed forces of the United States, and severe shortages in many types of trained manpower."[431]

Internal TVA memos suggest some socio-logistical issues in expanding women's presence. A July 1941 memo discussed efforts to use women for typing and stenographic work at "the Hiwasee projects," indicating that few women filled these positions at this fairly isolated construction and torpedo-testing site.[432] "Some difficulty has already been experienced in getting girls to accept employment on these projects. The housing problem undoubtedly contributes to this," the Chief Personnel Officer wrote, adding that "the Employment Division, having made a survey of the probable housing needs at these projects, has been in the position of recommending adequate housing for both female and

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[429] Susan Hartman, *The Home Front and Beyond: American Women in the 1940s* (Boston: Twayne, 1982), 21.
[430] Lowitt, "The TVA, 1933-45," 55.
[431] Press release (Knoxville, Tennessee: Tennessee Valley Authority, April 17, 1942), Folder 001432-011-0308: Tennessee Valley Authority, 1941-1943; Group II, Series A, General Office File, Labor; Papers of the NAACP, Part 13: NAACP and Labor, Series A: Subject Files on Labor Conditions and Employment Discrimination, 1940-1955, Library of Congress, https://congressional.proquest.com/histvault?q=001432-011-0308&accountid=11107.
[432] George Slover to George F. Gant, "Employment and Personnel Activities - Hiwassee Projects," memorandum, July 25, 1941, Box 400, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Tennessee Valley Authority, "Hiwassee," Tennessee Valley Authority, accessed March 25, 2021, https://www.tva.com/energy/our-power-system/hydroelectric/hiwassee.

male employees as an inducement to prospective employees."[433] Prospective female employees were demanding housing separated by gender.

According to a March 1943 memo, the employment of women turbine operators was being discussed. Although such women may have already been working in at least one TVA steam plant, there was hesitation over employing them at another plant, noting that the size of the plant "may or may not make any difference."[434] As we will see in the section on systemic racism, TVA preferred to segregate teams of minority employees by facility, suggesting one reason why the size of a plant might matter.[435]

Roland Kampmeier's account of his wife Silbia—seen above—was part of his broader summary of what he recalled of the WWII recruitment of women:

> …about in the middle of the war years, early in the war years, that when we found that our need for manpower was continuing to grow but our supply of manpower was shrinking because we were losing some of our young engineers to the . . . military, Army, Navy, and Air Force, and the schools were turning out somewhat fewer engineers, so we began casting around for women that we could employ. In addition to Rosey [sic] the Riveter, it was desirable to find women that we could put on some of our technical jobs, and that was not too easy to do because it was almost unheard of for any women to study engineering in those days. But we found people who had majored in math, for instance…I think maybe the mapping people moved the fastest in getting women into their work. But we moved pretty rapidly in getting women into various engineering aide jobs, helping to do some of the studies of power flow on the electrical system and so on, jobs which . . . women had not been trained to do but if they had a little background in math and a good mind they could do and we worked a number of them into the power program.[436]

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[433] Slover to Gant, "Employment and Personnel Activities," July 25, 1941.
[434] George Slover to Mr. George F. Gant, Informal Memorandum, March 12, 1943, Box 400, folder 8; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[435] Grant, *TVA and Black Americans*.
[436] Kampmeier, interview, 49–50.

Kampmeier admitted, "we were doing a certain amount of pioneering" in promoting Silbia above graduate engineers.[437] He also recalled "a certain amount of resistance among some of the fellow workers" against working with women when the latter were initially recruited, "But that wasn't too long lasting."[438]

When asked directly about women TVA employees "having to give up their jobs to returning veterans" after WWII,[439] former General Manager George Gant replied, "I don't recall. I don't know that there was any problem…Any women or men who had done well, I'm sure, would have found employment in the same or equivalent, similar position." Although he recalled "some rather sticky individual cases," he considered them "isolated…not the general cases."[440]

Probably due to his sharpened awareness of STEM women's experience through his wife-to-be, Kampmeier remembered differently.[441] "[I]t was harder [for women], again. . . . I doubt if we hired women as rapidly for a while after the war as we were," Kampmeier said, "and I don't know that as many of them were . . . [interested] in going to work, either, as far as that goes."[442] Although likely rooted in anecdotal evidence, Kampmeier's speculative generalization agrees with macro-level scholarship on the personal motivations of many white, Western women, social influences on them aside.[443] Kampmeier continued,

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[437] Kampmeier, 50.
[438] Kampmeier, 52.
[439] Mark Winter, qtd. in Gant, interview.
[440] Gant.
[441] At the time of disarmament, Roland Kampmeier was Chief of the Power Economic Branch, so his work was probably at least as distant from the gendered issue of veteran re-employment as Gant's. TVA Oral History Program, "Biographical Sketch [Roland A. Kampmeier]."
[442] Kampmeier, interview, 51.
[443] Elaine Tyler May, *Homeward Bound: American Families in the Cold War Era* (Basic Books, 2008).

> [And] there [isn't] any doubt but what there was a long period in which the women really found it hard to advance on merit in the way that a man could. It was just sort of taken for granted that men were the ones who had the experience and the know-how and the background to move ahead in some of these jobs and the women probably weren't given the opportunity as they should have been given to move ahead. Those that had unusual ability, . . . a certain amount of drive, did move ahead fairly well, but probably not as fast as they would have if they'd been men.[444]

4.9 Example: Opinions of Marguerite Owen

As others have noted, girls and women "may appropriate aspects of hegemonic masculinity" for their own purposes, as when they seek advancement in "corporate or professional careers."[445] Further, women's identities and actions, rather than simply complying with masculine hegemony, impact gender hierarchies as well as the construction of masculinities.[446] This appears to be the case for Marguerite Owen, Director of TVA's Washington Office from 1933 to 1966.[447] Owen was no engineer: she succeeded in part because she found a very specific niche that a woman could fill, and it was not in STEM.[448] Accounts of Owen and her work by TVA engineers and administrators, however, reflect several ways in which she performed traits of white-collar masculinity and physical masculinity that were valued in TVA engineering culture. Further, common respect for and fondness of Owen shows that dedication to one's ideals of objective meritocracy benefits from (hiding behind) systemic bias. That is, if a woman makes it through the system to the

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[444] Kampmeier, interview, 51.
[445] R. W. Connell and James W. Messerschmidt, "Hegemonic Masculinity: Rethinking the Concept," *Gender & Society* 19, no. 6 (2005): 847, 848; See also Judith Halberstam, *Female Masculinity* (Duke University Press, 1998).
[446] Connell and Messerschmidt, "Hegemonic Masculinity."
[447] Hargrove and Conkin, *TVA: Fifty Years*; "One of a Kind," Tennessee Valley Authority, accessed March 25, 2021, https://www.tva.com/about-tva/our-history/tva-heritage/one-of-a-kind.
[448] See Case, interview, 11–12 for an indication of this self-conscious strategy.

upper ranks, they had no trouble reconciling that collegiality with their white-collar masculinity.

The authority of Owen's position not only far exceeded that of any other woman in TVA for decades; it rivaled that of TVA Board members.[449] "[I]n a way she was sort of like another Board member," chemical engineer A. B. Phillips recalled, "I mean…she seemed to have that, she felt she had that authority, but she was always pleasant to us about our programs."[450] "…Marguerite was at the same level as Lilienthal and Clapp as far as I am concerned. Nobody ever could persuade me that she wasn't just as important as anybody else," Harry Case declared (despite using her first name alongside others' surnames).[451] Red Wagner claimed, "I think she, more than anybody else, was responsible for TVA's successes…"[452] Owen was further remembered for being "colleagues and allies and associates" with TVA Chairmen;[453] having "a great effect on program";[454] and subtly influencing promotion to TVA's highest offices.[455]

Owen functioned as "the point of contact between the Congress and the Board,"[456] and her job description involved everything related to that. Oliver remembered that Owen "kept a tight rein on Congressional relations,"[457] and Gant explained that "the Legal Department got a little uneasy once in a while because they felt that the relationships with

[449] Oliver, interview; Phillips, interview; Case, interview; Wagner, interview.
[450] Phillips, interview, 26.
[451] Case, interview, 11.
[452] Wagner, interview, 21.
[453] Gant, interview, 13.
[454] Oliver, interview, 20.
[455] Oliver, 22.
[456] Case, interview, 11.
[457] Oliver, interview, 20.

Congress on legislation should be their function."[458] Owen kept in close touch with Board members and General Managers by phone, often in hour-long phone calls several times a week or even every day.[459] She sent occasional inquiries to department heads, often as intermediary for Congressional queries,[460] and she acted as contact and advisor for any TVA personnel traveling to Washington, D. C.[461] "Nobody would ever think of going to Washington without going to Marguerite's office and getting advice and help in doing whatever they had to do," Case explained, "They did that partly because they liked to and partly because it wouldn't have made any sense not to."[462] She even ordered many D.C. trips. "She kept herself fully acquainted with what was going on" Wagner recalled, "Then she decided whether she needed the General Manager or a Board member to see somebody in Congress and she called them and they went."[463]

Despite her powerful and important role, former TVA administrators remember Owen's use of cooperative 'soft power' and the behind-the-scenes nature of her work. "She had an influence on policy by virtue of her knowledge of what you could do and what you couldn't do in Washington," Case explained, "She never said you shouldn't try to do this because you can't get it done. But if she knew it was impossible, she would try to figure out something that you could do that was possible…"[464] When asked why Owen's role received relatively little documented publicity, Gant speculated, "She dealt with the Chairman of the Board and the General Manager. Substantially no one else… [so] there

[458] Gant, interview, 12.
[459] Wagner, interview, 21; Case, interview; Gant, interview; Oliver, interview.
[460] Phillips, interview.
[461] Case, interview; Phillips, interview.
[462] Case, interview, 13–14.
[463] Wagner, interview, 21.
[464] Case, interview, 11.

was not a wide audience for the expression of her genius. It was focused in a few places."[465] He added, "The other reason is that she herself was not one to write books about her performance. If you have seen her book, it wasn't about her office at all. [end 12]…She didn't think in those terms."[466] Case agreed, calling Owen "a very modest person and also a very realistic one in that she wouldn't want to exaggerate the importance of one person over another, including herself."[467] Wagner echoed that sentiment after emphasizing the importance of her work:

> Mr. Winter: But she was content to work behind the scenes and not take any credit?
> Mr. Wagner: Yes, she insisted on that, almost.[468]

Personal opinions of Owen show an image that incorporated elements of white-collar and physical masculinities, and one considered different from other women. "Marguerite Owen was a special case. She was a very dedicated person," Wagner recalled, adding, "a very astute person. She knew what was going on and she knew what she wanted to make go on and, by golly, she usually got what she wanted."[469] "Most unusual woman," Gant mused, "Outstandingly able person."[470]

"She had a mind that was like a steel trap," Oliver shared, "…She had (I know it's male chauvinism to say it) but she had a mind like a man."[471] Perhaps in line with this depiction, when asked about Owen omitting herself from her own book on TVA, Oliver

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[465] Gant, interview, 12–13.
[466] Gant, 12.
[467] Case, interview, 10.
[468] Wagner, interview, 21.
[469] Wagner, 21.
[470] Gant, interview, 13.
[471] Oliver, interview, 20.

pointed out, "I don't think anybody's name is mentioned in her book but the Board and 'Red' Wagner's…Her concern was for the organization, and not for the individuals."[472] A further example arose when recalling his effectively reporting to her when General Manager:

> I was grateful for the guidance that she always gave me. Theoretically, she was supposed to report to me, but it didn't work quite that way. Before I became General Manager, I made the awful mistake of being in Miss Owen's office a number of times, when she would say: 'What would you do here and here and here and here?' And I, not having to do it, said: 'This ought to be done, this ought to be done, and this ought to be done.' When I became General Manager, she remembered every one of my answers and would ask me every once in [a] while what I'd done about them.[473]

According to both Case and Gant, Owen had a similarly disciplining effect on David Lilienthal. "…Marguerite Owen, who knew Lilienthal well, probably saved him from boners which could have come from his egocentricism [sic], I believe, more than once," Case recalled, implying that TVA owed much of its progress under Lilienthal to it.[474] Gant voluntarily added Owen to this dynamic when asked solely about Gordon Clapp.

> He [Lilienthal] sparked ideas like this [fingers snapped]…But because of his deep respect for Gordon Clapp and also for Marguerite Owen… They were able to help him choose between his good ideas and his bad ideas…Now in that process I am sure that both Clapp and Owen and others contributed to Lilienthal's thinking as well. They were not entirely passive in this association but they contributed something to it.[475]

Case provided a perspective of a woman with a vein of anti-bureaucratic frontier masculinity and straight-talking physical masculinity, both well in keeping with TVA's

[472] Oliver, 20.
[473] Oliver, 21.
[474] Case, interview, 10.
[475] Gant, interview, 6–7.

culture. "she always spoke frankly," Case recalled.[476] "…she didn't like bureaucracies and she didn't like bureaucrats and she didn't like personnel people. Although she and I got to be good friends that was despite the fact I was a personnel person and not because of it. She always let me know what she thought about personnel people and other administrative types."[477] Owen appeared to personally practice what she preached against bureaucracy: "She had a tiny office. She had a secretary and a file clerk and I think there was one other person there. That was it…that's all she wanted. She didn't want any big office. She didn't want an assistant. She couldn't imagine what you'd do with an assistant, I don't think."[478]

Despite masculine traits like these, Case's account shows that Owen embraced her feminine identity and found benefit in it:

> She said more than once: 'You know it's a great advantage being a woman in a job like this.' She said: 'I can go to a meeting with a Congressional committee with Mr. Lilienthal or Mr. Clapp or Dr. Curtis and they think I'm a secretary. I just sit there quietly and maybe take a few notes and maybe I might even hand a note for somebody, but they don't think that I'm influencing anything. I'm just a clerk or a secretary or something. And it's a great advantage.' They don't attack her, you see, they don't ask: 'Miss Owen, what do you think?'[479]

One begins to see her modesty as part of a broader plan for efficacy.

As we saw above, Owen occasionally engaged in boundary disputes with the TVA Legal Department.[480] It makes sense, then, that Beverly Burbage recalled or interpreted some of her attributes more negatively:

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[476] Case, interview, 12.
[477] Case, 11–12.
[478] Case, 13–14.
[479] Case, 11–12.
[480] Gant, interview.

> She was . . . she-dragon in some ways. She was jealous of her position and of her perrogatives [sic] and of her fiefdom, and woe be to the man who went around to a Congressman or a Senator without Marguerite's knowledge or permission or having set it up and approval. She could be mean and she could be vindictive…And she was pretty egotistical and she rubbed some people the wrong way.[481]

Others counted Owens a friend. Oliver, Lilienthal, Gant and Clapp considered her a friend and ally.[482] Her phone calls were notoriously prolonged in large part because they enjoyed talking to her. Case remembered, "I've been in John[Oliver]'s office waiting for him to get through talking to Marguerite and I had something I wanted to tell him about. They would go on and on. They were very fond of her and they valued her knowledge and her experience."[483] Oliver, meanwhile, recalled that Board Chairmen like Lilienthal and Clapp "would spend a long time batting ideas back and forth with her."[484] "We used to go out to dinner at the Occidental once in a while in the days when we could afford to do things like that," Case said of himself and Owen, "And we kept up our friendship until her death, although I hadn't seen her for a couple of years."[485]

Case's perspective on how other female TVA employees viewed Owen further emphasizes the distinction that he and other administrators drew for this special case. "Of course, the womenfolk in TVA never could understand all this enthusiasm about this woman in Washington," Case claimed, "They were suspicious of other women, often: 'And what has this Owen woman got that I don't have?' Maybe you do have it, my dear, and this gal really has brains."[486] Case stops there, without exploring why other women with

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[481] Burbage, interview, 56–57.
[482] Gant, interview.
[483] Case, interview, 14.
[484] Oliver, interview, 20.
[485] Case, interview, 12.
[486] Case, 12.

"brains" failed to rise nearly as high as Owen. Rather, his comments use a negative example to emphasize the traits of cooperation and anti-competition lauded in white-collar masculinity and at the TVA.

4.10 Systemic Racism and Black Employees

4.10.1 TVA Changed Slowly Regarding Race

As an institution, TVA's treatment of Black employees, applicants, and locals changed very little through the time period in question. As Nancy Grant documents, the things that did change in this era were mainly responses to investigations performed or lawsuits threatened by the National Association for the Advancement of Colored People (NAACP) or the Fair Employment Practices Committee (FEPC).[487] Of course, other federal agencies discriminated against Black citizens during this time as well,[488] likely contributing to President Roosevelt's establishing the FEPC as a government committee in 1941 "to investigate complaints of racial discrimination in war-related industries and in departments and agencies of the federal government."[489]

4.10.2 TVA's White-collar masculinity relied on systemic racism

Grant contends that, from 1933 to 1945, "TVA officials attempted to solve the racial problem by developing a series of plans that predicted a subordinate, segregated position for blacks, not only for the duration of the New Deal, but for the foreseeable future

[487] Grant, *TVA and Black Americans*, xv.
[488] Grant, xxii–xxiii, 31.
[489] FEPC received complaints from "many ethnic and religious groups" in addition to racial minorities; however, TVA's treatment of Black Americans was by far the main issue in terms of numbers and broader social context and import. Grant, 143, xv.

as well."[490] This included discrimination in hiring, wages, job training, housing, and in its programs of community and regional planning.[491] By the standards of the time, Grant recognizes that TVA officials would not "be judged reactionary," as they would by recent standards.[492] Pulled between southern whites who actively sought Black disenfranchisement and segregation on one hand and civil rights groups and liberals on the other hand, TVA planners likely found it impossible to steer a middle course.[493] Grant writes that the TVA responded with "a more conservative approach" despite her seeing "little evidence in the personal papers and the government documents of TVA officials of venality or racial hatred."[494]

I believe this has a great deal to do with white-collar masculinity. As argued above, white-collar masculinity relied on systemic racism and the overt racism of lower-class whites in order to maintain the status quo while supporting personal claims to magnanimity, objectivity, and gentility. TVA officials, as individuals, treated Black individuals politely and claimed liberal ideals—successfully performing the lauded traits of white-collar masculinity. Meanwhile, they allowed or actively supported systemic bias and overtly racist actions of lower-class whites. While Grant has covered what the TVA did to discriminate against Black Americans writ large, I focus on how TVA officials

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[490] Grant, xxix.
[491] Grant, *TVA and Black Americans*.
[492] Grant, xxx.
[493] New Dealer Aubrey Williams claimed that, in the South, "we have no liberals, only conservatives and radicals." T. Harry Williams, "Huey, Lyndon, Southern Radicalism," *Journal of Southern History* 40 (1973): 272; cited in Grant, *TVA and Black Americans*, xxx.
[494] Grant, *TVA and Black Americans*, xxxi.

navigated that contradiction inherent to white-collar masculinity, and how racial policies impacted Black employment in technical positions.[495]

4.10.3 Black Socioeconomic Status in the Tennessee Valley, 1933

Black Tennessee Valley residents faced extreme economic hardship and racial discrimination when the TVA entered the scene. The 1920s had seen nationwide setbacks for Blacks in skilled technical and building trades as technical or wage improvements made those jobs more appealing to whites. After the 1929 crash of the stock market, unemployed whites took over jobs that had traditionally been filled almost solely by Black employees, as truck drivers, waiters, bellmen, and porters. In the South, natural catastrophes and a recession in crop prices through the 1920s impacted agricultural workers and tenant farmers, white and Black alike. [496] More than 40% of Black Tennesseans were farmers; by 1930, low prices had forced many into tenancy.[497] Those who left the farm to seek other employment were limited to unskilled employment, when they could find work at all. Few Black Tennessee Valley residents were middle-class, though small numbers worked in Chattanooga and Knoxville as lawyers, professors, bankers, or skilled artisans. [498]

[495] TVA didn't hire a Black engineer until after 1950. Expanded scope of skilled jobs is required to have anything to analyze at all [rewrite] Grant, 154.
[496] Grant, xix.
[497] Grant, xxix.
[498] Grant, xxix.

4.10.4 1933-1935

It is by now well documented that the TVA made use of racial quotas to claim proportionate representation of Black employees while largely limiting them to unskilled work.[499] From 1933 to 1945, the head of Negro Training was the one Black professional employed at TVA.[500] In 1945, a chemist was hired as the second Black professional at TVA.[501] The TVA hired no Black engineers until after 1950.[502] The story of semi-skilled and skilled Black labor is a bit more complex, and things changed somewhat during the pre-WWII period. Black men at TVA in this period generally filled jobs as janitors, unskilled and semiskilled construction workers, and fertilizer plant operators.[503] Black women mainly worked at TVA as cafeteria workers or custodians.[504] By 1945, the TVA had begun to employ some Blacks (presumably men) as machinists, chemical operators, vehicle operators, linemen, duplicating machine operators, and mail clerks; however, other positions remained out of their reach.[505]

Harry Case spoke frankly about this in his 1983 interview. He described "…what subsequently got to be called affirmative action policy…which was not, I think, spectacularly successful by any means…Our policy…was that we would aim at employing blacks at the same percentage as the population of the Valley as a whole…What that left out, of course, was the qualitative factors. What kinds of jobs were the black people doing?

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[499] Grant, *TVA and Black Americans*; Hargrove and Conkin, *TVA: Fifty Years*; Erwin C Hargrove, *Prisoners of Myth: The Leadership of the Tennessee Valley Authority, 1933-1990* (Princeton University Press, 1994); Case, interview.
[500] Grant, *TVA and Black Americans*, xvi.
[501] Grant, 174, xvi, 71.
[502] Grant, 153–54.
[503] Grant, xvi.
[504] Grant, 70.
[505] Grant, 71.

For the most part the black people were laborers and semi-skilled personnel, pretty much. And that was still true at the time I left certainly."[506] Case left the TVA in 1956.[507]

Moving chronologically through some 'highlights,' we see several examples of constant negotiation and renegotiation over Black employment and promotion.

In 1934, the TVA reserved 100 summer intern positions for Black college students and sent requests to nine Black colleges. It explained that the students would work as janitors and laborers, and it requested applicants display high academic achievement and leadership ability and be in good physical shape. Few colleges participated to any substantial degree, and the program failed to meet the 100-intern goal.[508]

In 1935, the NAACP released a report on the TVA claiming, "All the machinery of employment is set up so that Negroes do not even have an opportunity to apply for skilled work."[509] Upon receiving labor requests from construction bosses, white personnel directors reportedly passed along only the requests for unskilled labor "to their colored assistant personnel directors."[510] As Grant explains, this was partly rooted in TVA policy that placed hiring, training, and promotion decisions under the purview of line supervisors and midlevel officials. The Personnel Division reviewed applications and listed applicants qualified for a job, and supervisors selected anyone they wanted from such a list.[511] "Many

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[506] Case, interview, 28.
[507] TVA Oral History Program, "Harry Lawrence Case."
[508] Grant, *TVA and Black Americans*, 94.
[509] "TVA Project Called of Little Benefit to Negroes," Press release (The National Association for the Advancement of Colored People, September 16, 1935), Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.
[510] "TVA Project Called of Little Benefit to Negroes."
[511] Grant, *TVA and Black Americans*, 46.

of the line supervisory personnel were local inhabitants with traditional views regarding the inferior economic and social position of blacks," Grant writes.[512] They often requested that Blacks be excluded from the lists of applicants they received. Through the prewar period, the Personnel Division acquiesced. It refused to force supervisors to hire any racial or ethnic minorities that they did not request, and it "generally assumed" that supervisors wanted these lists free of such minorities unless specifically directed otherwise.[513] The wide-ranging NAACP report began with a foreword by Walter White, NAACP Secretary. "The chief criticism by the N.A.A.C.P. is not of lack of integrity," he wrote, "but instead of the timidity of those entrusted with the responsibility of directing the policies of the TVA."[514]

Construction on Pickwick Landing Dam began in 1934.[515] By 1935, the site had limited the employment of skilled Black workers to the carpenters, plumbers, and electrical workers used for the construction of the 'Negro quarters' of the worker village.[516] Local 747 of the Electrical Workers Union protested to Washington the employment of the two Black electricians,[517] and the employment of all these skilled Black workers was terminated in 1935 upon the completion of that construction.[518] "It was the policy of TVA to hire black artisans to work only on 'Negro quarters,'" Grant explains.[519] Further, the TVA Training

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[512] Grant, 47.
[513] Grant, 47.
[514] Walter White, "Foreword," in *Report of the Chief Social and Economic Problems of Negroes in the TVA*, by John P. Davis (NAACP, 1935), https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.
[515] Tennessee Valley Authority, "Pickwick Landing," Tennessee Valley Authority, accessed March 29, 2021, https://www.tva.com/energy/our-power-system/hydroelectric/pickwick-landing.
[516] Grant, *TVA and Black Americans*; "TVA Project Called of Little Benefit to Negroes."
[517] "TVA Project Called of Little Benefit to Negroes."
[518] Grant, *TVA and Black Americans*, 50.
[519] Grant, 50.

Division used Pickwick Dam to study whether Black skilled labor was as efficient as white skilled labor. They found that using Black labor made unit costs 41% higher; more materials were used; and Black crews took more time to finish similar tasks. The division concluded that Black workers were less efficient, and it partly attributed this to their relative lack of job experience, though it noted that the end product of both Black and white crews was of comparable workmanship.[520]

Morale among the Black labor at Pickwick Dam was low, as many recognized their job insecurity and barriers to advancement despite any level of expertise. "I have been a maker of foremen," one Black worker was recorded saying,

> TVA sends its white laborers to our gang. When they come to us they are green, raw and without a knowledge of the work. We teach them and soon they become our bosses and we keep on teaching them…We also run the danger of getting the rap, because when a white man has been taught by a Negro he generally fires that Negro when he becomes boss.[521]

In an internal meeting in 1935, an office interviewer at Pickwick Dam noted cases in which Black employees were mis-classified, specifically citing two Black men "doing the work of mechanic helpers" but mis-classified as laborers.[522] In the same 1935 meeting, the office interviewer at Wheeler Dam (whose construction had begun in 1933[523]) reported

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[520] TVA, "TVA's Employment of Negroes, 1933-1964," staff report, cited in Grant, *TVA and Black Americans*.
[521] Anonymous manuscript, n.d., TVA Files, qtd. in Grant, 52 Grant writes, "This document was clearly written by a black TVA employee (working in the personnel division) very much disturbed by the evidence of racial discrimination."
[522] "Report on a Meeting in Mr. Bond's Office on October 15, 1935," October 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.
[523] Tennessee Valley Authority, "Wheeler," Tennessee Valley Authority, accessed March 29, 2021, https://www.tva.com/energy/our-power-system/hydroelectric/wheeler.

that only 10 out of 1300 Black workers there were employed as skilled workers.[524] He noted that the Black office interviewers could find "sufficient" Black skilled labor, but that they were limited for time, as their "duties are more than the duties of the ordinary office interviewer."[525]

In response to a white personnel administrator's claim that no Blacks of foreman ability could be found, two Black personnel interviewers reported "the statement to be in error" in 1935.[526] They had found many Black men at Wheeler Dam with abundant experience and ability who only lacked encouragement and several sessions of leadership training (provided to all foreman trainees) to work as foremen. [527]

Employee housing and amenities were likewise notably discriminatory from the start. Grant notes that the TVA, wary of angering local white leaders, "carefully adhered to the valley practices" of school and community segregation.[528] To the extent that one's home was a reflection of gendered values—of a husband's patriarchal breadwinner status and a wife's status as homemaker and caretaker—the discrepancy in employee housing is disparaging in large part because of its neutering. Wilson Dam provides one example. The two villages for white workers ranged from three-room bungalows to two-story, seven-room houses, "modern in every respect."[529] Several elementary schools, recreational facilities, and playgrounds were also provided.

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[524] "Report on a Meeting in Mr. Bond's Office."
[525] Notes on Mr. Moore's account, "Report on a Meeting in Mr. Bond's Office."
[526] Birdius Browne and W. M. Tyler, report, October 1935, qtd. in Grant, *TVA and Black Americans*, 52.
[527] Birdius Browne and W. M. Tyler, report, October 1935, cited in Grant, 52.
[528] Grant, xvi.
[529] J. Max Bond to Mr. Rufus Clement, February 25, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress,

The Black village, set in an isolated swamp next to railroad tracks, reportedly contained mostly temporary homes constructed for workers during WWI, which had been moved to the village site. The newly constructed houses were apparently "so poorly planned" that one white foreman refused to continue construction.[530] None of the houses had capacity for large families. The windows did not have screens, making it impossible to deter the swamp's insects, and the kitchens did not have windows. Families were encouraged to supplement their meager wages with vegetables raised in a community garden "wholly inadequate for the number of families."[531] The NAACP reported that these families were not allowed to keep chickens or their own truck-gardens.[532] Grant writes that they were encouraged to bring a cow along, but that the local pasture lands housed a sign reading "Niggers keep your cows out of White Folks Pasture."[533]

The TVA's response to criticism on these issues appealed to politeness, objectivity, and expertise. Because A. E. Morgan was Chairman of the Board and the TVA official responsible for its social planning and personnel policies, he was the Board member who received the most complaints of discrimination. In all of A. E.'s correspondence with NAACP leaders, he showed "a formal courtesy" (as Grant puts it). [534] He used respectful salutations, apologizing and offering excuses for delayed responses, and expressing "our Hope [sic] that we may be able to do something to bring about a better understanding of the racial problem" with the help of the NAACP, whose interest he claimed to

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https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; Grant, *TVA and Black Americans*.

[530] Bond to Clement, February 25, 1935; Grant, *TVA and Black Americans*.

[531] "TVA Project Called of Little Benefit to Negroes."

[532] "TVA Project Called of Little Benefit to Negroes."

[533] Grant, *TVA and Black Americans*, 53.

[534] Grant, 39.

appreciate.[535] "Yet he did not capitalize the word 'Negro,'" Grant points out, "a practice that was being adopted at this time by progressive newspapers and government agencies. In public addresses to black audiences, he preferred to use the term 'colored people.'"[536]

Meanwhile, A. E. Morgan appealed to expertise and objectivity, implying that the NAACP lacked both. Grant writes that, in response to critics, A. E. "flatly denied that TVA discriminated against blacks and implied that the critics were ignorant of and insensitive to the racial mores of the South."[537] In response to the NAACP's 1935 report by John P. Davis, A. E. responded to the NAACP, "I have not had an opportunity as yet to read this report and shall want to have this checked by members of our staff."[538] He wrote to Harold Ickes, Secretary of the Interior,

> There has been considerable misinformation and misinterpretation of the Negro problem as it is related to the program of the Tennessee Valley Authority. We feel that we should like to have a competent Negro leader visit the Authority and observe its work first hand in order to understand the way in which we are approaching the problem. Would it be feasible for Dr. Robert C. Weaver, Advisor of Negro Affairs of the Department of the Interior, to spend two weeks here to see what we are doing?[539]

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[535] Arthur E. Morgan to Mr. Walter White, June 22, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; Arthur E. Morgan to Mr. John P. Davis, May 31, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; Arthur E. Morgan to Mr. Walter White, October 15, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.

[536] Grant, *TVA and Black Americans*, 39.

[537] Grant, 37.

[538] Morgan to White, October 15, 1935.

[539] Arthur E. Morgan to The Honorable Harold I. Ickes, July 19, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority;

Weaver did investigate the TVA, and he sent his report to A.E. Morgan that November. Weaver confirmed the charges in the NAACP report and added several new ones involving employment opportunities, making several recommendations that were not subsequently adopted.[540] This would resurface in the 1939 joint Congressional committee's wide-ranging investigation of the TVA.[541]

Meanwhile, Gordon Clapp's notes in the margins of his copy of the report "called Davis a liar," noting that he was "misinterpreting of [sic] conversation with TVA officials" and calling into question the accuracy of direct quotations.[542]

Issues involving Norris Dam, whose construction began in 1933, developed similar patterns. Black employees were excluded from housing in the model employee town of Norris, TN, and had to travel at least 7 miles to work.[543] The NAACP noted that in doing

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Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.

[540] "TVA 'Can and Should' Stop Discrimination, Says Majority Report" (National Association for the Advancement of Colored People, April 7, 1939), Folder 001418-019-1041: January 1, 1939-September 9, 1939; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; "TVA Personnel Director to Probe N.A.A.C.P. Charges" (National Association for the Advancement of Colored People, August 26, 1939), Folder 001418-019-1041: January 1, 1939-September 9, 1939; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; Grant, *TVA and Black Americans*.

[541] "TVA 'Can and Should' Stop Discrimination."

[542] Grant, *TVA and Black Americans*, 124; Clapp, qtd. in Grant, 170.

[543] J. Max Bond to Mr. M. F. Seay, Mr. G. R. Clapp, and Dr. F. W. Reeves, August 1, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; Charles H. Houston and John P. Davis to N.A.A.C.P., "Investigation of Economic and Social Problems Of Negroes in TVA," Memorandum, June 4, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; "TVA Project Called of Little Benefit to Negroes."

so, the TVA "introduced new patterns of segregation hitherto unknown in the Tennessee Valley, and has increased segregation beyond the usual sectional pattern."[544] A. E. Morgan replied to complaints from NAACP leaders, "The fact of the matter is that no applications for houses at Norris have been received from Negro employees." All Norris houses, A. E. added, were occupied, with a housing waitlist "some 150 employees" long. Between that and the prospect of locating "more of our offices" in the vicinity, whose employees would "naturally be given preference in assigning houses," the prospect of Norris housing for those not yet on the waitlist "is not very bright."[545]

In response to the NAACP's 1935 query about the dearth of courses offered through the TVA Negro Training Program, A.E. Morgan explained, "At Norris training courses are available to Negroes, but very few have indicated an interest in participating in training courses to date. The work being given is handled individually rather than in classes as there are not enough interested in any one particular course to organize classes."[546] Later that year, the NAACP contacted employees who had enrolled in a Norris class that was cancelled to see why.[547] It learned from one of the class' former attendees that it had ended

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[544] "N.A.A.C.P. Attorney Tells of Gross Discrimination at the TVA" (National Association for the Advancement of Colored People, August 19, 1939), Folder 001418-019-1041: January 1, 1939-September 9, 1939; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; White, "Negroes in the TVA"; This occurred before the red-lining of 20th century real estate took full effect. See Ira Katznelson, *When Affirmative Action Was White: An Untold History of Racial Inequality in Twentieth-Century America* (WW Norton & Company, 2005).
[545] Morgan to Davis, May 31, 1935; Morgan to White, June 22, 1935.
[546] Morgan to White, June 22, 1935.
[547] Special Counsel to Mr. Orville Willis, August 27, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; Special Counsel to Mr. Raymond Willis, August 27, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10:

because "Two of the men got cut off & my brother was transferred to another job & could not meet with us so it just left me & the Teacher…" The two met about three times before discontinuing.[548]

4.10.5 1936-1941

Construction began on Hiwassee Dam in 1936. Despite pressure from the Personnel Department, the Engineering and Construction Department refused to hire any Black employees for the dam's construction. It cited several reasons for this. It calculated that proportional employment of Blacks, at 2% of the Cherokee County population, would be fewer than 125 employees, and that the construction of dormitories for so few would be an unreasonable cost. It pointed out that local Black residents lacked experience, as it believed most "to be employed as domestic servants and the like," and that the importation of experienced Black workers would cause racial friction.[549] It also pointed to the welfare of the hypothetical workers, citing potential social isolation and calculating the personal costs of rooming in TVA dormitories, eating at its cafeterias, and supporting their families in a racist area that would charge them high rent. It even invoked a medical rationale, observing that the silicosis hazard at Hiwassee corresponded to 250% higher tuberculosis mortality in the Black population than in whites. It proposed that more Black employees be hired at other projects to meet quotas. It concluded that, since "the employment of Negroes would

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Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.

[548] Orville Willis to Special Counsel, September 8, 1935, Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.

[549] J. N. Allen, assistant coordinator, to John Blandford, General Manager, memorandum, 19 January 1937, qtd. in Grant, *TVA and Black Americans*, 55.

necessitate additional administrative attention…there can be no real benefits resulting from the employment of colored workmen other than doubtful political expediency."[550]

The Personnel Department pushed back with similarly logical arguments provided by the Office of the Supervisor of Negro Training. It estimated that the construction of separate facilities would take 2% of the budget for workers and that the expense was "the cost inherent in the race problem itself."[551] Previous experience with Norris Dam showed that their disproportionately low employment was not offset elsewhere, implying that it would be unlikely in this case. Further, the Black men in the Hiwassee examination zone would not be geographically qualified for employment at any other dam site.[552] It cited interviews with "several prominent citizens" of the nearest town who predicted no "serious difficulties in the matter of racial relationships if the employed ratio did not exceed 10 percent and if the Negroes employed were carefully selected."[553] Silicosis-tuberculosis mortality rates—now attributed to environmental rather than biological factors—could be handled through careful medical examination and dust control measures benefitting all employees.[554] Further, hiring Black employees at Hiwassee was politically necessary in light of criticism from the exclusion of Black Norris employees and the risk of incurring criticism from the "national administration that has gone further in the direction of

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[550] J. N. Allen, assistant coordinator, to John Blandford, General Manager, memorandum, 19 January 1937, qtd. in Grant, 55.
[551] J. Max Bond to Gordon Clapp, 10 November 1936, and Gordon Clapp to C. A. Bock, assistant chief engineer, 28 November 1936, qtd. in Grant, 55.
[552] Grant, 55.
[553] Gordon Clapp to C. A. Bock, assistant chief engineer, 28 November 1936, qtd. in Grant, 56.
[554] Grant, 171, 56.

applications of broad non-discriminatory policy…than has been true at any time heretofore," in addition to expected criticism from civil right and citizens' groups.[555]

Personnel urged the TVA Board to rule on the matter. As was its custom, the Board never ruled on or even discussed this racial matter.[556] In 1942, the Hiwassee project manager wrote, "…it is probable that we might have been able to place Negroes in these projects in the early stages but this action would have caused a great deal of resentment, and it would have been necessary to use a certain amount of force. The construction schedule is now too far advanced to employ Negroes."[557]

In 1936, despite the tepid response to its 1934 efforts to hire Black interns as janitors, TVA sought to fill permanent janitorial positions with Black college students, "[c]iting new cleaning methods involving complicated washing and waxing machinery."[558] Recruiters sent to Black colleges were advised to seek out young men with "a neat, clean, quiet manner, not slouchy" and to "encourage the married applicants for obvious reasons."[559] Black college women were considered unsuitable for the work. Very few Black students applied; many expressed significant frustration that TVA wouldn't offer more suitable opportunities.[560]

That same year, the Training Section employed seven Fisk University students in part-time summer positions to help teach in the Negro Training classes. Fisk gave them

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[555] Gordon Clapp to John Blandford, 5 May 1938, qtd. in Grant, 56; Gordon Clapp to John Blandford, 4 March 1937, cited in Grant, 56.
[556] Grant, *TVA and Black Americans*, 56.
[557] George K. Leonard to T. B. Parker, chief engineer, 20 June 1942, qtd. in Grant, 57.
[558] Grant, 62.
[559] Louis McDade to George Benjamin, 17 February 1936, qtd. in Grant, 62.
[560] Grant, 62–63.

college credit for doing this (while they continued with their own classes). While white college interns and cooperative workers were given interviews for TVA positions upon their graduation, these Black students returned to college after the internship with no mention of later placement in the TVA. The TVA's 1936 report on "The Employment and Training of College Graduates" explained that "actually participating in the educational activities of a community in which Negroes live… will benefit the interns by giving them an understanding of the problems that they will face when and if they assume leadership among their people…"[561]

In 1937, head of the Negro Training Division J. Max Bond was notified of a Fisk graduate student in chemistry who had applied for a position in a TVA chemical laboratory. Bond's acquaintance explained of the student, "His was the kind of hope which should not be dimmed by too blunt an unbaring of adverse situations. So I could not tell him out-and-out what both you and I know: there is no such position - - for him."[562]

In spring and summer 1938, the Joint Congressional Committee to Investigate the Tennessee Valley Authority convened. Its primarily aim was to investigate A. E. Morgan's allegations of his former colleagues' dishonesty, but it was authorized to examine all PVA programs and divisions. The Committee heard from power companies and other institutions and private citizens with complaints against TVA.[563] Francis Biddle, general counsel for the Committee and a member of the National Legal Committee to the NAACP,

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[561] Personnel Department, "The Employment and Training of College Graduates."
[562] Rollins L. Winslow to Dr. J. Max Bond, July 7, 1937, Folder 001418-019-0594: January 9, 1937-December 22, 1937; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001509-016-0434&accountid=11107.
[563] Grant, *TVA and Black Americans*.

helped ensure the investigation's attention to racial issues.[564] The Committee found that the TVA employed few Black skilled workers; it paid little attention to Black complaints; and that labor unions barred Black employees from apprenticeship training.[565] Gordon Clapp, Director of Personnel at the time, testified, "The Authority in general does not feel that it has any special responsibility for attempting to revise or reconstruct the attitude of this area or any other area with respect to the racial question."[566]

The majority report of the Committee criticized the Agency's unofficial practices of racial discrimination. "On paper the Authority policy toward Negroes is one of no discrimination and a proportionate share of jobs. In practice the Authority has not felt able to enforce this policy as fully as could be desired…" the report read, "The Authority cannot solve the race problem in a year or in 10 years, but it can and should do more for the Negroes than it is doing."[567] It noted significant discrepancies in pay and noted, "…since white-collar positions are filled from all over the country, it should not be hard to secure well-qualified Negroes for some of the better-paying jobs."[568]

The majority report also discussed a lack of foremen's and walking bosses' accountability to higher-ups. "In general there is evidence that field supervisors of the Authority have not carried out the announced policy of equal treatment for Negroes. The committee does not have evidence of any case where a supervisor accused of mistreating

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[564] Lowitt, "The TVA, 1933-45"; Grant, *TVA and Black Americans*.
[565] Lowitt, "The TVA, 1933-45."
[566] Clapp, qtd. in Lowitt, 59.
[567] Majority Report of the Joint Committee Investigating the TVA, qtd. in "TVA 'Can and Should' Stop Discrimination"; also qtd. in Lowitt, "The TVA, 1933-45," 59.
[568] "TVA 'Can and Should' Stop Discrimination."

Negroes has been disciplined," it wrote.[569] Testimony had highlighted particularly brutal treatment at Chickamauga Dam, where workers were reportedly beaten and intimidated from joining the labor unions; generally mistreated; and regularly cursed "by TVA foremen and walking bosses…who are upheld in their actions by the construction superintendent at the dam."[570] The only Black foreman in the TVA had worked at the Chickamauga site before he was fired, reportedly "without any specific charges leveled against him, and despite the fact that he has long been engaged in this type of work in and around Chattanooga, Tenn., where he directed white and colored workers in building a municipal highway tunnel for the city of Chattanooga."[571]

During the investigation, the Committee suggested that the TVA investigate charges of brutal treatment at Chickamauga Dam, with the help of Charles H. Houston of the NAACP. Houston expressed confidence that Gordon Clapp would investigate thoroughly, writing to NAACP contacts that Clapp seemed to "be decent on the matter of protecting workers" and "will be scared not to order a real investigation."[572]

The TVA's investigation, held in September 1938, called 20 Black employees who testified to brutal treatment and intimidation from joining a union.[573] One employee,

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[569] Majority Report of the Joint Committee Investigating the TVA, qtd. in "TVA 'Can and Should' Stop Discrimination."
[570] "Negro TVA Workers," *Chattanooga Times*, August 20, 1939, qtd. in "Chattanooga Daily Says TVA Brutality Must Go," National Association for the Advancement of Colored People, September 2, 1939. Folder 001418-019-1041: January 1, 1939-September 9, 1939; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107; "N.A.A.C.P. Attorney Tells of Gross Discrimination."
[571] "N.A.A.C.P. Attorney Tells of Gross Discrimination."
[572] Charles Houston to NAACP, 18 August 1938, qtd. in Grant, *TVA and Black Americans*, 127.
[573] "Testimony Relating to Complaints Filed with the Joint Congressional Investigating Committee on Working Conditions at Chickamauga Dam" (Tennessee Valley Authority, September 7, 1938), 127, Folder 001418-020-0001: Complaints. Volume 1. 1938.; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-

George Granville, detailed the skill misclassifications he endured and witnessed. He and several others had been demoted from drillers or cement puddlers to laborers when they were transferred from Wheeler Dam to Chickamauga in 1936. Granville fulfilled the job description of a cement finisher, working alongside white cement finishers and occasionally being assigned the work that a white finisher "could not do," and yet he remained misclassified and paid at a lower rate than the white finishers. "Mr. James, concrete inspector and Mr. Sam Hunt, inspector, both told me I ought to be classified as a finisher and didn't see why it couldn't be done," he testified.[574]

Granville also testified to the difficulty Black employees faced in training for promotion. "They won't give training courses for negroes in any of the skilled crafts…" he reported, "I know that white workers are in T. V. A., training courses in all of the skills. Under the new program you can only be promoted through training courses by T. V. A. Negroes are barred from these courses in the Skills. There are no negroes in the apprenticeship program." He told of his experience purchasing a welding set and asking, as one of "ten or twelve men," to apply for training in welding at the Chattanooga Training School. His supervisor and a school representative, "said the outfit was alright, but I have never heard anything more about it… I have had to take correspondence courses in private schools."[575]

Granville was asked to elaborate on his testimony to the Joint Committee that the foreman and assistant superintendent "repeatedly curse colored men on the job":

1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-020-0001&accountid=11107; Grant, *TVA and Black Americans*.
[574] George Granville, qtd. in "Testimony Relating to Complaints."
[575] George Granville, qtd. in "Testimony Relating to Complaints."

Q Can you tell the language they used, if it was unusual on a construction job?
A They would just say, 'damned nigger', or something like that…
Q (Mr. Clapp) Have you ever heard them curse white men on the job?
A No, sir."[576]

Little resulted from either Congressional or TVA investigation. No Black workers fired due to race-related incidents were rehired; only one of the supervisors accused of brutal treatment was reprimanded; and a "climate of fear at Chickamauga remained until the termination of the project."[577] Clapp's only recommendation was for the TVA to initiate supervisory sensitivity training; TVA would not act on this until 1957.[578]

In 1939, the TVA conducted its first complete survey of Black employees. It found that they held over 14% of the temporary construction-related jobs and only 3.7% of the more permanent, salaried jobs.[579] Of these, only the head of the Negro Training Division earned more than $2,000 annually.[580] Otherwise, 9 semiprofessional employees were classified as job interviewers in the Personnel office; 4 semiprofessional employees worked as instructors in the Negro Training unit; the remaining 101 permanent Black employees were "in so-called menial work."[581] The vast majority of the latter were in custodial or

[576] Gordon Clapp and George Granville, qtd. in "Testimony Relating to Complaints."
[577] Grant, *TVA and Black Americans*, 128; Lowitt, "The TVA, 1933-45."
[578] Grant, *TVA and Black Americans*, 128.
[579] Statistical table I, "Number White and Negro Employed by Pay Status," 31 July 1939, cited in Grant, 61.
[580] Majority Report of the Joint Committee Investigating the TVA, qtd. in "TVA 'Can and Should' Stop Discrimination"; Statistical table I, "Number White and Negro Employed by Pay Status," 31 July 1939, cited in Grant, *TVA and Black Americans*, 62.
[581] Grant, *TVA and Black Americans*; Statistical table I, "Number White and Negro Employed by Pay Status," 31 July 1939, cited in Grant, 62.

cafeteria work, but the report also identified 4 laboratory helpers, 1 duplicating machine operator, and 1 messenger. [582]

NAACP reported in 1939 that the TVA refused to hire Black machinist helpers "on the excuse that the area would not stand for such jobs to be held by Negroes" despite the fact that "[t]here are colored men in the area who have been machinists [sic] helpers for more than thirty years."[583] Similarly, despite the fact that a flagman "has the exacting job of guiding huge cranes carrying cement so that the cement is dumped into the proper place without touching the intricate maze of wires, cables, and pipes near the dam foundation," Black flagmen were classified as signal men and were paid 57% the hourly rate of white flagmen.[584]

In 1939, the Problem Solving Committee of the NAACP Tri-Cities Branch alerted Arthur M. Miller, Director of the Department of Chemical Engineering, that a white-only operating engineers' local number 660 sought to eliminate Black employees from those positions by increasing its membership.[585] The Committee was entirely populated by women because "most of the men are directly or indirectly connected with the T. V. A. and for economic reasons could not give the best service on the committee," the Branch

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[582] Statistical table I, "Number White and Negro Employed by Pay Status," 31 July 1939, cited in Grant, *TVA and Black Americans*, 62.
[583] Roy Wilkins, qtd. in "Better Jobs in TVA Demanded By Citizens" (National Association for the Advancement of Colored People, April 28, 1939), Folder 001418-019-1041: January 1, 1939-September 9, 1939; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.
[584] "N.A.A.C.P. Attorney Tells of Gross Discrimination."
[585] Mrs. A. R. Graves to Mr. Arthur M. Miller, June 8, 1939, Folder 001418-019-1041: January 1, 1939-September 9, 1939; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.

president noted to the national Assistant Secretary.[586] (In this way, TVA inadvertently emasculated the local Black NAACP men: They could not be breadwinners *and* community leaders in this capacity.)

That same year, the Tri-Cities Branch reported directly on the Fertilizer Division "because it seems to serve as a barometer for the other divisions. We have heard men who migrate from job to job in the T. V. A. say that the foremen very often said to them, 'Hell, you have more of a chance now than they allow you in the Fertilizer Division.'" It pointed to the power of "Jim crow unions" and the lack of administrative intervention as "[t]he reasons for such practices…" listed:

> (a) No Negro machinist helpers
> (b) No Negro pipefitter helpers
> (c) One Negro truck driver
> (d) No Negro operators
> (e) Eight Negroes with salaries as high as $1200 per annum (this is the maximum pay for Negroes)
> (f) All Negro employees work under foremen of the levy camp type, or the old plantation type. The fate of the Negro workmen rests in the hands of these white foremen…
> Other practices:
> No Negro apprentices.
> No Negro training for trades (while the T. V. A. is spending millions of dollars for such training).
> No Negro white collar jobs (all such jobs are marked <u>For white</u>).
> No Negro chemists.
> No Negro engineers.[587]

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[586] Norman T. Thomas to Honorable Roy Wilkins, June 10, 1939, Folder 001418-019-1041: January 1, 1939-September 9, 1939; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.
[587] Underlining in the original. The Tri-Cities Branch to The Directors, National Association For The Advancement of Colored People, "Race Relations in the Tennessee Valley Authority -- Problems of Discrimination in the Fertilizer Division," June 7, 1939, Folder 001418-019-1041: January 1, 1939-September 9, 1939; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.

The branch president noted in an addendum that there were no Black electrical workers or carpenters, either.[588] The report ambivalently held TVA officials accountable for the division's immediate supervisors. "We have very high respect for the T. V. A. administrative officials," it emphasized more than once, "from the directors of this agency to the heads of the various divisions, but for existing conditions as mentioned above to have lasted over a period of four years it is not so brilliant a record for the immediate supervisory staff. These defects in the race relations policy should have been detected and corrected ere this time by the administrative officials."[589] It went on to list officials' "Responses when approached:"

> (a) We are doing all we can.
> (b) See organized labor and get a statement that they don't object to working with Negroes.
> (c) We are giving special study to this problem (4 years).
> (d) What can we do about it?
> (e) That just won't work down here.
> (f) That is not the custom, is it?
> (g) I am just falling over backward trying to work this thing out.

It doubted officials' sincerity, contending "[t]hat in four years, if the T. V. A. officials had been making a sincere study, the Negroes would not have suffered such an extended loss in the opportunities and advantages offered by this agency."

Despite this, "We have decided" the report began a list of several declarations, "… V. That it be made plain that the Negroes have stood 100% behind T. V. A. notwithstanding the injustices that have been forced upon them. VI. That we do not hold the Director of the T. V. A. responsible for any of the infringements upon the constitutional rights of the

[588] Thomas to Wilkins, June 10, 1939.
[589] The Tri-Cities Branch to The Directors, National Association For The Advancement of Colored People, "Race Relations in the TVA," June 7, 1939.

minority group, but that we hold those who are responsible to the Directors for carrying out orders of operation." In that same list, the branch declared its decision "That Negro workers should not be dominated by untrained, illiterate, prejudices [sic] whites as foremen."[590]

As the report implied by targeting the Fertilizer Division, not all departments were equal; further, the branch recognized that TVA was exemplary relative to others. In December 1939, the branch President wrote to the Vice President and General Manager of the Electro Metallurgical Company of New York City urging him to consider hiring black workers and using the TVA as a positive example. "The Tennessee Valley Authority is giving definite consideration to jobs for Negroes and their advancement on the job. In their Chemical Research Laboratory the Stock Room man in charge of apparatus and reagents is colored. All custodians in the plant are colored," he added, "the plant chaffeurs [sic] are colored; and the messengers…some operators, and labors [sic], and concrete finishers."[591]

As the TVA expanded its workforce of Black technicians, it sought to segregate teams of workers to avoid contact between white and Black technicians.[592] In 1939, the TVA acquired a line crew of Black electricians from the Tennessee Electric Power Company when it acquired the latter's facilities.[593] The crew worked autonomously and rarely interacted with white crews.

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[590] The Tri-Cities Branch to The Directors, National Association For The Advancement of Colored People.
[591] Norman T. Thomas to Honorable F. P. Gormely, Folder 001435-008-0913: "T," 1940-1949; Group II, Series B, Legal File, Labor; Papers of the NAACP, Part 13: NAACP and Labor, Series C: Legal Department Files on Labor, 1940-1955, Library of Congress, accessed December 17, 2019, https://congressional.proquest.com/histvault?q=001435-008-0913&accountid=11107.
[592] Grant, *TVA and Black Americans*.
[593] Carl A. Cowan to Mr. Charles Houston Esq., September 1, 1939, Folder 001509-016-0434: University of Tennessee. 1939-1941; Legal File: Group I, Cases Supported--University Admissions Cases; Papers of

In 1940, the department of Chemical Engineering initiated a program to train chemical operators. It trained 20 Black chemical operators for the Watts Bar Steam Plant to create a situation in which most operators at that plant were Black. The same year saw an all-Black crew of machinists at the Nashville steam plant. [594]

Two interviewees in 1983 recalled the Chemical Engineering department's training programs for Black plant operators. Former chemical engineer A. B. Phillips recalled that, when he joined TVA in 1942, "…they were laborers mostly…Of course, about everybody came in as a laborer then, and then he'd get trained as a pilot plant operator or a plant operator. It would take several years maybe and the opportunities could come along. We trained some Blacks as pilot plant operators."[595] When asked about the program for Black employees specifically, Harry Case answered, "I think most of those training programs in operations, both chemical and electrical, were very good. I think successful, by and large, very successful."[596] He then continued to generalize about training programs and without mentioning those specific to Black employees.[597]

In January 1941, a TVA staff memorandum on "Negro Employment in the TVA" explained that few Blacks qualified for skilled or highly paid positions, pointing to workmen's examination registers for proof. Only 108 of the 9,213 people who took examinations for skilled craft workers in 1938 were Black, and only a few of those met

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the NAACP, Part 03: The Campaign for Educational Equality, Series A: Legal Department and Central Office Records, 1913-1940, Library of Congress, https://congressional.proquest.com/histvault?q=001509-016-0434&accountid=11107; Grant, *TVA and Black Americans*.

[594] Grant, *TVA and Black Americans* Grant further notes that these were not traditional Negro trades, so all-Black crews would have been unlikely without TVA initiatives.

[595] Phillips, interview, 11.

[596] Case, interview.

[597] Case, 31.

TVA's requirements for certification as skilled journeymen. The majority of Black employees worked in typically Black trades, as jackhammer operators, powdermen, and wagon drill operators. There were also many Black helpers to those in skilled trades.[598] The report also repeated the argument that Gordon Clapp (now General Manager) had made to the Joint Congressional Committee three years earlier: [599] It was limited to the obligations of the 1933 TVA Act, and these did not include "a special assignment or statutory authority to reconstruct the racial relationships of the population in the area of its operations."[600]

The Vice President and the Correspondence Secretary of Local No. 1071 of the International Hod Carriers' Building and Common Laborers' Union of America disagreed with the TVA's assessment of the Black labor pool. "On Projects where Negroes are employed there are definite limitations on the occupations open to them," they wrote to Thurgood Marshall that March,

> There are Negroes qualified for employment with the Authority as Research Workers, Chemical, Construction, Electrical and Civil Engineers; Agriculturalists and as Medical Experts. Also within the ranks of the Negroes who are now employed by the Authority, there are those capable of serving as supervisors of laborers, drillers, concrete finishers and masonry crews. In addition there are several who before being employed by the Authority have worked for private contractors as skilled laborers, helpers, plumbers, carpenters, and truck drivers.[601]

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[598] "Negro Employment in the TVA," staff memorandum, 23 January 1941, cited in Grant, *TVA and Black Americans*, 65.
[599] Hargrove and Conkin, *TVA: Fifty Years*.
[600] "Negro Employment in the TVA," staff memorandum, 23 January 1941, cited in Grant, *TVA and Black Americans*, 65.
[601] James R. Boff and Earl Quarls to Mr. Thurgood Marshall, March 17, 1941, Folder 001432-011-0308: Tennessee Valley Authority, 1941-1943; Group II, Series A, General Office File, Labor; Papers of the NAACP, Part 13: NAACP and Labor, Series A: Subject Files on Labor Conditions and Employment Discrimination, 1940-1955, Library of Congress, https://congressional.proquest.com/histvault?q=001432-011-0308&accountid=11107.

The two also noted that, "Since the Act creating the T. V. A. in 1933 no Negroes have been allowed to participate in the apprenticeship program," and that all other forms of job training had "almost been neglected where Negroes are concerned." They added, "These racial restrictions as imposed by the Authority definitely retards [sic] the advancement of workers, the increase in numbers of skilled and simi-skilled [sic] workers, and the social gains that might be reached through increased pay. [602]

4.10.6 World War II

World War II created opportunities for Black men and women to make notable advancement in the U.S. workplace. Nonwhite employment in defense industries rose from less than 3% to 8.3% between 1942 and 1944. Black federal employment in Washington, D. C. roughly doubled between 1938 and 1944 to make up 19.2% of that workforce in 1944. They also made qualitative gains: 90% of Black federal employment was custodial in 1938, and 10% was clerical, administrative, and professional. In 1944, 40% was custodial, while 60% fell into higher paying classifications.[603] Women comprised 60% of the one million Black workers added to the industrial workforce during this time. Many had already worked outside the home out of economic necessity, but many left domestic service work for more lucrative factory jobs after 1942.[604] The war also caused national

[602] Boff and Quarls to Marshall.
[603] Philip S. Foner and Ronald L. Lewis, eds., *The Black Worker from the Founding of the CIO to the AFL-CIO Merger, 1936-1955* (Philadelphia: Temple University Press, 1983), 266.
[604] William Harris, *The Harder We Run: Black Workers since the Civil War* (New York: Oxford University Press, 1982), 122; Susan M. Hartmann, *The Home Front and Beyond: American Women in the 1940s* (Twayne Publishers, 1984), 80.

perspective to shift from regionalism to support for federal centralization and control, not least among Black Americans.[605]

For the TVA, the advent of the war did not significantly change its racial employment practices.[606] By 1941, however, private companies in the region offered more and more highly paid positions to Black as well as white workers. Even Oak Ridge began hiring Black area residents in 1942; although the Army's employment patterns were similar to the TVA's, Oak Ridge was closer and more accessible to Black Knoxvillians and Chattanoogans than TVA's Fontana Dam.[607] Between this competition and the wartime labor shortage, TVA found it needed Black semiskilled workers. TVA hired its first Black chemical trainees and clerk-typists due to shortages in these labor pools, but not without internal resistance.[608] Further, it largely refused to train its "its own…excess pool of untrained but willing black laborers" for such skilled positions, however, for fear of upsetting local labor unions.[609]

Kampmeier, Chief of the Power Economic Branch at the time,[610] recalled the shift from his perspective:

> We began to try to find some of the minority people, not so much because we felt that they ought to be given the job as because we needed to get help where we could find it. But they were few and far between. The minority groups who had graduated in engineering were almost as few as women graduating in engineering. So it was pretty much a case of finding that the prospects weren't really too good for finding the help that we needed. But really we did begin to bring them in.

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[605] Grant, *TVA and Black Americans*, 151.
[606] Grant, 72.
[607] George Slover to George Gant, 27 September 1943, TVA Files, cited in Grant, 67.
[608] Grant, 72; Grant does not clarify if these were the same "chemical trainees" as those chemical operators whose started training in 1940; however, Phillips recalled that all of the latter were initially hired as laborers, suggesting they were separate groups. See Phillips, interview.
[609] Grant, *TVA and Black Americans*, 67.
[610] TVA Oral History Program, "Biographical Sketch [Roland A. Kampmeier]."

> And then, of course, at first there was a certain amount of resistance among some of the fellow workers as there had been with the women. They said: . . . . [']We're used to working with men. We're used to working with whites. We don't want the women. We don't want the blacks.' And so on. But that wasn't too long lasting. The ones who said: 'You'll never have . . . a black working in my office,' a year or two later they did. It was a case of getting used to it, you know. Culture shock, I guess you might say.[611]

President Roosevelt established the Fair Employment Practices Committee (FEPC) in 1941 "to investigate complaints of racial discrimination in war-related industries and in departments and agencies of the federal government."[612] It remained active through 1946, relying on direct negotiations with employers and the threat of negative publicity to attain desired adjustments.[613] "Always protective of its administrative and personnel autonomy," Grant writes, "TVA regarded the antidiscrimination directives from the FEPC not only as regionally insensitive but also as an unwarranted intrusion from an outside governmental force."[614] This stance was a major attribute of the frontier masculinity frequently expressed at the TVA, as we will see in the chapter that discusses frontier masculinity.

In October 1941, the FEPC informed the TVA of several complaints of racial discrimination in hiring, including its refusal to hire Black laboratory assistants, Black machinist helpers, or Black journeymen in skilled craft jobs. The TVA replied that it did not employ Black laboratory assistants because the position "was a stepping stone for"[615] promotion to lab technician, and employment of the latter was "a departure from the employment patterns in the area and therefore present[ed] problems of time and efficiency

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[611] Kampmeier, interview, 51–52.
[612] Grant, *TVA and Black Americans*, xv.
[613] Grant, *TVA and Black Americans*.
[614] Grant, xvii.
[615] Grant, 140.

of the unit."[616] Hiring Black journeymen and machinist helpers would have alienated the white workers whose skilled craft unions maintained exclusionary clauses.[617]

This began a correspondence between the two institutions that lasted for the existence of the FEPC. Throughout, the TVA invoked objectivity and sought to place responsibility for racial exclusion on societal context. Citing the merit and efficiency clause in its 1934 *Employee Relationship Policy*, for example, the TVA clarified that a candidate's individual ability determined merit; however, efficiency was determined not by work performance but by the degree of efficiency the candidate would add to the work unit. Policies influenced by the exclusionary status quo, then, "are not felt to be discriminatory in a placement program based upon individual merit and efficiency of operations."[618] The TVA also cited its priority to establish trust and support in the community, as a regional agency.[619]

Despite the FEPC's efforts, little changed with respect to the TVA's discriminatory policies. Partly due to war shortages, the TVA hired its first Black building guards in 1943.[620] In 1942, it reversed its policy of excluding Black employees from dam construction in areas with low percentages of them in residence.[621] It also hired its first Black chemical plant operator trainees in 1942 (as mentioned above), and its first Black apprentice and personnel clerk in 1943. It also began to keep careful record of Black employment, including training programs; hiring, promotion, and firing patterns;

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[616] Lawrence Cramer to George Gant, October 1941, TVA Files, qtd. in Grant, 140.
[617] Grant, 140.
[618] George Gant to Lawrence Cramer, 8 May 1942, TVA files, qtd. in Grant, 141.
[619] Grant, 141.
[620] Grant, 142, 144.
[621] Grant, 144.

complaints of harassment; and lists of "firsts or breakthroughs" in previously exclusive fields.[622]

Overall, however, the employment picture remained roughly the same for Black TVA employees. The percentage of Black employees at the TVA rose from 7.8% to 11.1% from 1942 to 1943 through a rise in temporary labor positions, while the percentage of Black clerical, administrative, and professional employees stayed almost constant. [623] An anonymous TVA employee expressed frustration over the tenaciously limited job opportunities to Roy Wilkins of the NAACP in 1942, noting that, despite the years fighting for greater opportunities, "the only tangible result…was that George Gant called all the camp managers together and advised them to hire 'more Negro cooks in the future.'"[624]

4.10.7 Truman Administration (1945-1952)

The FEPC dissolved in 1946, once the war ended, and there was no Federal organization committed to fair employment review until 1948. Private and Federal institutions regressed into former discriminatory patterns, terminating Black employees in "last hired, first fired" reductions (and when reemploying white veterans), and offering various rationales for refusing to hire them.[625] Postwar Black unemployment reached dramatic levels and was noted as "alarming" in the FEPC's final report, which observed that wartime gains in Black employment had been lost.[626]

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[622] TVA, "TVA's Employment of Negroes, 1933-1964," staff report, TVA files, qtd. in Grant, 144.
[623] Grant, 144.
[624] Anonymous TVA employee (personnel officer) to Roy Wilkins, 1942, qtd. in Grant, 63, 145; Grant, 187.
[625] Grant, *TVA and Black Americans*, 151–52.
[626] FEPC, "Final Report," 1946, FEPC Papers, National Archives, Washington, D. C., qtd. in Grant, 152; Grant, 151–52.

For the TVA, disarmament marked a shift away from dramatic rates of construction for the first time in its history. The workforce made a correlated shift from "thousands of temporary laborers" to a relatively small, stable population of technicians, skilled craftsmen and career bureaucrats.[627] An influx of returning white veterans and new white residents also impacted the TVA's wartime demand for Black employees in nontraditional fields. From its high point of 11.8% in 1941, the percentage of TVA employees who were Black decreased to 8.9% in 1946 and 6.2% in 1963, and the vast majority remained in the three lowest pay grades.[628]

In 1950, TVA recorded a second Black Employee in its Professional Service: a "Research chemist II" joined the rank that had previously held only the head of Negro Training. That same year, seven Black employees worked in the Sub-Professional Service: one "Draftsman II," one "Materials tester I," one "Materials tester II," one "Biological aide I," one "Chemical aide II," and two "Laboratory aides."[629] In 1952, TVA hired six Black engineers from Howard University's School of Engineering. By 1953, all six had left the TVA, citing workplace harassment as well as offers for better jobs in desegregated urban areas of the North.[630]

Walter Emmons was Assistant Chief of the Civil Design Branch in this period. "[T]he idea that they were going to integrate was accepted by the management without any particular problems," he said when queried about President Truman's order racially integrating the Federal government, "But there were individuals that…would say…if this

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[627] Grant, *TVA and Black Americans*, 152.
[628] Grant, 152.
[629] "Table I. Blacks Employed by TVA, by Service and Classification Title, 1950," cited in Grant, 153.
[630] Grant, 154.

happened they would quit and that, this and the other."[631] His interviewer, Mark Winter, wanted Emmons to elaborate on those who threatened to quit.

"Were they management individuals or employees?" Winter asked.

"They were very low men," Emmons replied, "you know, squad leaders and things like that or the head of some small group of people… not all from the South, either. Some of them were, they just didn't want to do it. It was just against their principles…"[632] Emmons, however, also recalled "that one boo-boo where one fellow…higher up…came in and …told these fellows that they [Blacks] weren't going to be a threat to them because they [Blacks] weren't going to go anywhere. But I don't know if that helped or not. It might have, because we had had these threats, but we never had anybody as far as I know who really walked out."[633] Emmons himself recalled his father's training and promoting Black employees to traditionally-white jobs in his New Jersey cafeteria. As a result, Emmons felt, integration "was not anything new to me. I knew I'd known all these fellows, knew that there was gradation just like there are in any group of people. Some are hard workers, some of them are not. You have to weed them out. Of course, you do that in any organization." Emmons believed that more TVA engineers were from the North than the South, so integration emotionally "affect[ed] a comparatively few people."[634]

In 1951 the TVA began an 11-year process of desegregating bathrooms and drinking fountains from its facilities, at the behest of pressure from Presidential

[631] Emmons, interview, 23.
[632] Emmons, 23–24.
[633] Emmons, 24.
[634] Emmons, 25.

administrations, Supreme Court decisions, and inquiries from liberal leaders.[635] John Oliver explained the Agency's segregated facilities to Senator Paul Douglas of Illinois in October 1951 as "one way of ensuring that the projects would be visited by all of the people," and a low priority compared to progress in employment. "TVA inaugurated and maintained a policy of nonsegregation in the more basic matter of employment and wages, on the ground that economic equality is essential to the eventual elimination of conditions under which segregation prevails," he wrote, "We deliberately tried to avoid sharp issues over surface manifestations."[636] The Powell Building cafeteria in Chattanooga was the last TVA facility to desegregate, doing so in 1962.[637]

Mechanical engineer Floyd Thomas was superintendent of Johnsonville Steam Plant around the time that TVA began desegregating its facilities. He recalled in 1981 that President Eisenhower had issued an executive order to desegregate bathrooms and require certain equal rights programs. "TVA has done a very good job of implementing these programs," Thomas said, "We haven't seen anything unreasonable about them."[638]

4.10.8 J. Max Bond as a reflection of TVA values

J. Max Bond, Sr., the head of TVA Negro Training from 1934 through 1938,[639] gives us an interesting example of the ways in which traits of white-collar masculinity were

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[635] Grant, *TVA and Black Americans*, 154–55; Thomas, interview, September 1, 1981.
[636] John Oliver to Paul Douglas, 10 October 1951, TVA Files, qtd. in Grant, *TVA and Black Americans*, 155.
[637] Grant, 155.
[638] Thomas, interview, September 1, 1981, 23.
[639] Both Bond and "Negro Training" went through superficial title changes during this period, so he is most typically referred to simply as 'head.' "J. Max Bond Sr., 89, an American Who Headed Liberian University," *New York Times*, December 18, 1991, National edition, sec. D; Grant, *TVA and Black Americans*.

performed as well as how they helped limit culture and policy to the status quo. A Black native of Nashville and son of a Congregational minister, Bond had studied at the Universities of Pittsburgh and Chicago, and he completed work on a Ph.D. in sociology and economics at the University of Southern California the year he joined the TVA.[640] On paper and in public record, Bond supported TVA racial policies.[641] What critique he directly offered showed the great pains Bond took to remain acceptable to his TVA counterparts and superiors, and it was generally ignored. The only solution, he concluded, lay in informing and encouraging the NAACP to do the "militant" work that he could not personally afford.[642] As Grant writes, "There were two sides to Bond."[643]

The 'official' side of Bond can be seen in the conciliatory and motivational speech he gave to the Personnel Division Conference in September 1934. He opened with a joke about his experience writing correspondence for a cook who asked him to apologize in each postscript for "'the bad writing and take it all for love.'" Bond then transitioned. "Now, if some of the views that I advance tonight are not in accord with the philosophy that has existed in the past, I hope you will take all for love and think through some of the things that may be said here."[644]

Bond detailed progress with the Black housing he and other employees occupied at Wheeler Dam, which "present no real problem now, although many questions came up at first." Without direct mention of meager wages, Bond explained how he had demonstrated

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[640] "J. Max Bond Sr."; Morgan to White, June 22, 1935.
[641] Grant, *TVA and Black Americans*.
[642] Bond to Clement, February 25, 1935; Lowitt, "The TVA, 1933-45"; Grant, *TVA and Black Americans*.
[643] Grant, *TVA and Black Americans*, 114–15.
[644] J. Max Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 15.

to his Black neighbors "that there was no need to do without furniture" when he commissioned construction of willow furniture "to furnish my house as cheaply as possible." People visited to see his furniture, and "The men have started making this type of furniture for their own homes. You see it is a great saving."[645]

Bond's presentation of the Black education program to date was similarly positive. "We can't afford to go in for formal education," he noted, explaining that the schools being organized hoped to teach "the fundamental trades" such as "home making to the men, to teach them how to repair their homes" as well as "budgeting, wise expenditure of funds and other things that the women in that district need to know to live successfully," taught through a ladies auxiliary, in addition to the basics of reading, writing, and arithmetic. "What we really need is a continuance of this program," Bond claimed, labeling it "one of the greatest opportunities in many years. Not [seen] since Booker T. Washington…"[646]

According to Bond, about 10 Black college students had been employed as TVA laborers that summer (likely as part of the 100-intern initiative mentioned above), and they were organized into a teachers' club to teach Black laborers a variety of basic skills "that we thought would help them."[647] This included skills like using a ruler. "The foreman complained that many were good drillers but could not measure," Bond explained, "and so we took the rule and taught them how to read it."[648] Other skills involved safety and public health, like how to lift things and do manual work without physical strain; how to avoid accidents off the job; and shoe care. "…most of the fellows somehow or another don't wear

[645] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, 16.
[646] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, 17.
[647] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, 37–38; Grant, *TVA and Black Americans*.
[648] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 37.

good shoes. They get a pair of shoes and cut them up," Bond noted, "So we put on a campaign advocating not bigger shoes but better and safer shoes."[649] Other lessons came by direct request. "Some wanted to learn how to talk, how to write a good letter. Some wanted to learn how to make out a check, some how [sic] to make out a money order. We tried to show them. In fact we took the very simple things in everyday life and got our college men to teach them."[650] Not all of his 'college men' cut muster, however. "One man thought he could teach arithmetic, but I found out that he couldn't," Bond recounted to the white crowd, "The only thing left to do was to make him Superintendent of the school. The school superintendent is only required to have a loud voice and to know how to tell time. He went through the halls before classes and rounded up everyone and kept the time."[651]

Bond also expressed great pride in the "Welfare Association of the Tennessee Valley Authority," or "WA of TVA," a small 100-man dormitory that was highly regulated and disciplined, from where one could leave one's clothes to prohibitions on drinking and gambling. Although he claimed that "We have created…control through public opinion, not through force," he also pointed to a president, seven commissioners, and a commission of police who were all in charge of organizing the dormitory and keeping order. Those positions, in addition to a commission on recreation, were entirely staffed by volunteers, he emphasized, "and the men are anxious to do some little thing."[652]

Bond's broader remarks to the conference also grouped him with the white-collar men to whom he spoke through its explicit concern for status and its stance of magnanimity

[649] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, 37–38.
[650] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, 38.
[651] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, 37.
[652] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, 38.

to white and Black alike, even as he sought to 'push the envelope.' "They say that status is the rating that we give other people, and that status is the most vital thing in life. A man will not only fight for it but die for it," Bond asserted, "In considering the racial problem that confronts us, it resolves itself into a matter of status." Despite claims to the contrary, Bond claimed, "…you don't understand the Negro, you understand the place you have given the Negro."[653]

"When you give the Negro low wages, they are given jobs previously held by Whites at higher wages. The Whites in order to live are forced to accept low wages too. In lowering the status of the Negro, you lower the status of a large group of underprivileged white people," Bond explained, "So if we are to change the situation, if we are to lift this great group of underprivileged white men we must raise the status of the Negro. That is the problem of the Tennessee Valley Authority. Unless that is done the large group of poor whites in the South may never be raised beyond an impoverished group." Fortunately, Bond claimed, "The TVA is meeting this situation for the first time. The Negro is receiving a wage similar to the white person's."[654]

Given that Bond had been in this post for a matter of months by the time of that 1934 speech, he may have been more optimistic and conciliatory than he would be later; however, he continued to effort a similarly conciliatory front even as he worked behind the scenes for the TVA's accountability. In February 1935, Bond secretly wrote Mr. Rufus Clement, describing the dire housing situation for Black workers at Wilson and Pickwick Dams and requesting intervention by the NAACP. "Now, I've done all that I can do to

[653] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, 15–16.
[654] Bond, qtd. in Tennessee Valley Authority and F. W. Reeves, 16.

remedy these gross preversions [sic] of the plans proposed in Knoxville: conferences, protests are availing us nothing," he wrote, "The white southerners in charge go on unheeding. They feel that they can 'get away' with anything. The Negro public is asleep."[655] The situation, he concluded, required NAACP investigation—but nominally at Clement's request to NAACP Secretary Walter White, rather than Bond's. If the TVA discovered his involvement, he predicted, "There'd be no more 'Bond' in the TVA. Now for myself, I wouldn't give a d--- but what would become of the Negro Program? Some weakling would be put in my place and the Negro in the TVA would be 'sold out.'" He disliked the underhanded approach he found necessary, he wrote, "but any other procedure is like butting my head against a wall. My lone voice goes unheard and unheeded."[656]

Through his tenure, Bond continued to pass information of injustices and broken promises to the NAACP.[657] In parallel, he maintained an official correspondence with NAACP that presented him as a TVA supporter ignorantly distant from NAACP's inner workings. For example, Bond penned an official letter to White on August 1, 1935, and sent it first to TVA Headquarters in Knoxville (cc: Clapp and F. W. Reeves), requesting that they forward the letter to White "If, in your opinion, it is wise to send such a letter." In this official letter to White, Bond mentioned a recent conversation with "Attorney Cowan, who, as far as I can learn, is the legal representative for the" NAACP. "It is my impression that Attorney Cowan, in some way, felt that my answer was intended to avoid the questions that he had asked," wrote Bond, referring to previous correspondence. "It

[655] Bond to Clement, February 25, 1935.
[656] Bond to Clement.
[657] "Report on a Meeting in Mr. Bond's Office"; Lowitt, "The TVA, 1933-45"; Grant, *TVA and Black Americans*.

was my good pleasure, however, during our conversation, to thoroughly convince Attorney Cowan that I was perfectly sincere in my response to his letters," which Bond was likely much more able to do behind closed doors. Because Cowan had discussed the likelihood of a lawsuit by the NAACP against the TVA, Bond was writing in official capacity to urge the NAACP against "any legal action against the Authority," believing that it "would do nothing more than crystallize public opinion against the Negro."

In the same letter, Bond complimented the TVA's race relations efforts to date, while trying not to go suspiciously far in the effort. "In all fairness to those who are directly in charge of the program features in which some feel that the greatest neglect has occurred, allow me to say that I conscientiously believe that these men are sincere in their desire to see that justice is done," Bond wrote, "As proof of their fair mindedness, I point to the manner in which I have been able to survive as a worker in this organization." While it theoretically would have been easy for TVA to install a mere 'yes man' in his position, Bond noted, "I have continuously pressed my claims as they relate to the general welfare of the Negro. I can say in all truthfulness that some of these claims have been recognized, while others still hang fire, but I feel reasonably assured that when I am able to place myself in a position where I can deal first hand [sic] with my immediate superiors, many more of these claims will be granted." He ends with what could easily have been further code: "When you read this letter, I hope you will keep in mind the fact that this statement has only been inspired by the desire to see a type of approach worked out that will, in its application, insure the greatest benefit to the Negro."[658]

[658] Bond to Seay, Clapp, and Reeves, August 1, 1935.

4.11 Conclusion

The TVA and its engineers strongly associated themselves with traits of white-collar masculinity in the Agency's first two decades. They tended to have strong academic training and showed expertise in their fields. Some sought intellectual breadth, as well, showing interest in other STEM fields and in the humanities. Their morale on-the-job was often closely linked to intellectual interest. It was also linked to idealism and perceived magnanimity, which included belief in the objectivity and apolitical nature of their work and a willingness to accept relatively low wages. TVA engineers frequently filled administrative positions, advertising expertise as well as higher socioeconomic class. They were often fathers and husbands, and TVA and engineers both fulfilled familial symbols. We saw evidence of many of these elements in depictions of the first TVA Board's members and their feud as well as in recollections of TVA's Washington Office Director Marguerite Owen.

TVA engineers were relatively free to fashion themselves meritocratic in part because bias at that point was largely systemic, excluding non-whites, non-men, and most in the lower class from a chance at competition with such men. They were able to present their work as magnanimous because they separated their personal responsibility from broader currents of racism and misogyny in their professional and sociopolitical context.

CHAPTER 5. PHYSICAL MASCULINITY AT THE TVA

This chapter draw primarily on 1980s oral history interviews with engineers and some administrators to explore expressions of physical masculinity at the TVA from 1933 to 1953. It concentrates on several traits of physical masculinity that appear to have been commonly performed at this time, including several ways in which the TVA and its engineers and administrators associated themselves with blue-collar culture. It shows examples of how this masculinity was performed (and limited) in the case of Roland Kampmeier and G. O. Wessenauer, engineers who headed the TVA Power Division.

5.1 TVA and Physical Features/Bodies

Generally young and healthy, and all male, TVA engineers in the 1930s 'fit the bill' for bodies associated with physical masculinity, and they valued athleticism associated with that. Multiple observers noted the youth of the early TVA staff, especially relative to those in other public and private institutions.[659] A 1936 report by the Personnel Division reported "553 men under 27 years of age in the employ of the Authority on an annual basis."[660] The TVA's 1943 "Study of Experience Backgrounds and Earnings of TVA Administrative and

[659] George F. Gant, interview by Mark Winter, September 7, 1983, Box 4, folder 4; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Richard Lowitt, "The TVA, 1933-45," in *TVA: Fifty Years of Grass-Roots Bureaucracy*, ed. Erwin C Hargrove and Paul Keith Conkin (Urbana and Chicago: University of Chicago Press, 1983), 35–65.

[660] Personnel Department, "The Employment and Training of College Graduates in the Tennessee Valley Authority" (Tennessee Valley Authority, August 1936), Box 966, folder 3; Administrative Files, 1933-1957; Record of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); For perspective, this would have been 20% of all TVA employees in the Knoxville area (annual or wage labor) at the time. Gordon R Clapp, "Progress Report for the Personnel Division for the Period June 1-30" (Tennessee Valley Authority, July 6, 1936), Box 839, folder 2; Administrative Files, 1933-1957; Record of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

Executive Personnel" noted that the average employee in the Professional Service group (most of whom were engineers) joined the TVA between 1934 and 1937 at approximately 40 years of age.[661]

Some were athletic, and others made note of their peers' athleticism. Mechanical engineer Floyd Thomas played football in college on a football scholarship. He transferred schools to study engineering and attended Mississippi State "because it had a friendly campus and I liked the athletic program."[662] Upon graduating, Thomas turned down three opportunities to coach college football in order to join the TVA as an engineering aide.[663] While at TVA engineers were involved in organizing and playing on teams for various sports, from softball to bowling.[664]

They noted others' athleticism, as when Donald Mattern used part of his 1983 interview to describe Red Wagner: "All the way up the line Red was a hard worker and a

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[661] Personnel Department, "Study of Experience Backgrounds and Earnings of TVA Administrative and Executive Personnel" (Tennessee Valley Authority, September 1943), Box 397, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Gordon R. Clapp to David Lilienthal, Harcourt Morgan, and James Pope, "Study of Experience Backgrounds and Earnings of TVA Administrative and Executive Personnel," memorandum, September 24, 1943, Box 397, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[662] E. Floyd Thomas, interview by Mark Winter, February 18, 1983, 1, Box 11, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[663] E. Floyd Thomas, interview by Mark Winter, September 1, 1981, Box 11, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Thomas, interview, February 18, 1983; TVA Oral History Program, "Biographical Sketch [E. Floyd Thomas]" (Tennessee Valley Authority, September 1, 1981), Box 11, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[664] Aubrey J. Wagner, interview by Mark Winter, June 27, 1983, Box 12, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

darn good softball player, short stop."[665] Others also noted Wagner's reputation as a softball player, as well as former Director of Health O. M. Derryberry's past as an end on the Tennessee football team.[666] Wagner himself recalled organizing a TVA bowling league, as well as some of the pride the staff associated with performance:

> …I got a ten pin [bowling] league started in TVA. I remember the legal division had a team. James Lawrence Fly was our General Counsel at the time and they asked him to bowl with them one night and he averaged 87 or something like that for the night. He hadn't bowled before; he just came out to fill out [the team]. I used to keep the record and I'd publish the averages every week and circulate them around the TVA. I think Bill Fitts, who ultimately became General Counsel, came in one day and said: 'Red, how about leaving Mr. Fly's average off that list. When he agreed to come out and help us he didn't agree to be held up for ridicule for the rest of his life.' So I took his name off the list.[667]

It was not uncommon to mention others' physical attributes like size, strength, or facial hair in interviews, correspondence, or in speeches honoring them.[668] Physical aspects also appear to have been considered in hiring engineers. One 1935 memo discussing a candidate for the head of the Electricity Department's Operating Division notes that "age

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[665] Donald H. Mattern, interview by Mark Winter, July 27, 1983, Box 7, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[666] Wagner, interview; Dr. Harry L. Case, interview by Mark Winter, April 5, 1983, Box 2, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[667] Wagner, interview, 9.
[668] Case, interview; Harry A. Curtis to Mr. John R. Kuebler, September 21, 1958, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; John P. Ferris to Mr. Lloyd L. Huntington, March 17, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; W. H. MacIntire to Harry A. Curtis, February 12, 1949, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to John R. Kuebler, June 27, 1958, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Walter J. Murphy to Dr. Harry A. Curtis, August 10, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Dr. Harry A. Curtis to Dr. Icie Macy Hoobler, July 22, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Gustavus J. Esselen to Dr. Harry A. Curtis, July 21, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

and physical energy are in his favor."[669] Policies for physical examination of all employees at dam sites and placement of those with "definite physical defects" were implemented from early 1934,[670] and those policies involving physical handicap changed after World War II.[671]

In practice, physical capacity was relevant but not definitively vital to an engineer's ability to work. Roland Kampmeier, for example, was physically handicapped by polio within his first two years of TVA employment; he rose to head the Power Division nonetheless.[672] We also see this in Wagner's account of his promotion to Chief of Navigation. After working his way up to associate engineer, Wagner recalled in his 1983 interview, he "worked closely with Cliff Barker," the Chief of the Navigation Transportation Branch at the time. When Barker "had bad health and was out of the office for an extended period," Wagner took over as Acting Chief "and filled in for him and finally he came back to work." Barker's health must have still been poor, however. "They decided that he couldn't carry the load full-time," Wagner remembered, "and so they made

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[669] A. S. Jandrey to C. L. Richey, "Candidates for Head of Operating Division, Electricity Department," memorandum, December 9, 1935, Box 397, folder 10; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[670] E. L. Bishop, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report of the Personnel Division Conference Held at The Andrew Johnson Hotel Knoxville, Tennessee September 29-30, 1934," 1934, 30–31, Box 896, folder 10; Administrative Files, 1933-1957; Record of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[671] Personnel Department, "Wartime Personnel Administration in the Tennessee Valley Authority" (Tennessee Valley Authority, June 30, 1943), Box 839, folder 5; Administrative Files, 1933-1957; Record of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Harry L. Case to Aubrey J. Wagner, "Employment of the Physically Handicapped," Office memorandum, October 21, 1955, Box 397, folder 20; Administrative Files, 1933-1957; Record of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[672] Roland A. Kampmeier, interview by Mark Winter, February 15, 1983, Box 6, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

me Chief…and he was kind of a senior consultant to us on the staff." Despite his reduced capacity and title, Barker continued to work. [673]

TVA engineers also likely did not consider physical limitations the worst constraints to have. When Walter Emmons was asked in his 1983 interview about his reasons for retiring early from his post as Chief Design Engineer and Director of the Division of Design, he danced around an uncomfortable admission of problems with his "nerves," preferring to label it a physical condition: "I wasn't feeling too good physically or I say physically, maybe it's physically, it's nerves, I don't know. I had some problem with that at that time." Emmons moved on to mention his financial security as well as the blooming complications of TVA's "getting into the nuclear work" around the time of his 1967 retirement as additional reasons for his retirement. He then circled back to the initial issue. "… [A]nd so that plus the fact that I wasn't feeling too hot physically," he mused, "it wasn't physically, it was really more or less nerves. I've never been a very nervous guy, but a couple of times I got overanxious and so I decided that I'd better quit while I was ahead."[674]

5.2 TVA and Physical Construction/Work

The employee morale discussed in the chapter on white-collar masculinity at the TVA did not always come from intellectual interest or a sense of magnanimity; rather, for engineers it was often rooted in one's connection to physical products or results. Harry Case generalized about this, claiming that "an organization which is physically building

[673] Wagner, interview, 5.
[674] Walter F. Emmons, interview by Mark Winter, September 8, 1983, 50–51, Box 3, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

things has a great advantage in morale over an organization, generally speaking, that is dealing with abstractions, keeping records."[675] He posited, "there are, no doubt, organizations with great morale who aren't doing anything visible although I don't think of one." He listed several counter-examples—the space program, the Forest Service, the Public Health Service—only to admit that each did, indeed, produce something "to show."[676] As for the TVA, Case elaborated, "I don't recall any time when we weren't building anything… if you're just shuffling papers you would have nothing to show for it, but if it's concrete—nothing should be more concrete than a concrete dam—we had a very concrete thing…All of this, I think, has an effect on morale of the organization."[677]

Recollections of TVA engineers agree with this sentiment. Emmons focused on this as the most satisfying part of his job, tying it to direct physical labor. "The biggest kick I got out of anything was seeing a job completed, and see it work," Emmons explained, "Just like you were in your back yard digging a hole or something and you wanted to drain water out into the stream and it does. . . . I get a feeling of accomplishment when I see one of those jobs start up and get going…I'm real proud of that."[678] Chemical engineer Ray Copson recalled that morale in his division "was very good," noting the new plants and processes they created.[679]

Like Copson, chemical engineer Travis Hignett took great pride in the useful fertilizer production processes he originated or developed. "Our *products* didn't really get

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[675] Harry Case, interview by Charles Crawford, qtd. in Case, interview, 24.
[676] Case, 25.
[677] Case, 24.
[678] Emmons, interview, 51–52.
[679] Dr. Raymond L. Copson, interview by Mark Winter, September 7, 1983, 12, Box 2, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

into use except by TVA," Hignett explained, "I liked to develop a *process* that a small manufacturer in Kansas, Iowa, or Illinois could use. And that was one of the satisfactions of the results of our research."[680] Hignett's record boasted at least 15 patents and 101 publications or major lectures;[681] however, when asked about his influence on TVA and chemical engineering more broadly, Hignett emphasized not theory or cutting-edge discoveries but direct material utility. "I suggested most of the processes that have become useful in fertilizer production. Some of them I have patents on… I participated in bringing our research into active use in industry… [and] develop[ed] projects that were useful to the manufacturers."[682]

Even when Hignett claimed not to feel disappointed in the absence of utility or hands-on work, he still spoke in terms that valued it highly. When discussing his involvement in two major WWII-era projects that became uneconomical, [683] Hignett lamented that "a considerable amount of my work resulted in processes that were not useful."[684] When asked how he felt about that, he replied, "it didn't bother me, because I was doing . . . the work that I was assigned, and I could see the need for doing the work especially during the war time, that it is insurance really against the things that were going on in the war. So I felt that doing the work that I was assigned and doing it well was an end

[680] Emphasis mine. Travis P. Hignett, interview by Mark Winter, April 13, 1983, 20–21, Box 5, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[681] "Travis P. Hignett: Publications and Patents--As of March 1973," n.d., Box 5, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[682] Hignett, interview, 20–21.
[683] Coke became too expensive to use for phosphorus production, and it became uneconomical after WWII to extract aluminum from domestic ore. Hignett, interview.
[684] Hignett, 5–6.

in itself…"[685] Later, when asked, "Have you ever missed doing the hands-on work?" the former Director of the Division of Chemical Development replied,

> Yes, I did. I like[d] running pilot plants, I liked working in the laboratory and I did miss that, but I took an interest in helping people who were working on projects, not physically, but making suggestions now and then. And I got interested in planning, so after a while I didn't miss the actual work so much.[686]

Also in Chemical Engineering's Process Development Branch, A. B. Phillips echoed Hignett's sentiments on those projects abandoned at the end of WWII. I would have liked to have seen them adopted, of course, and used…" Phillips admitted, "But I understand that it wasn't economical…And I guess during wartime we do a lot of things like that that really don't work out but they've really got to be done for backup and so on." He contrasted this with his peacetime work by adding, "Certainly one of the joys of working out there later was seeing some of the fertilizer things adopted and used widely."[687] Witnessing 'work in use' also impacted morale during the 1960 merger of the Chemical and Agricultural Relations departments, according to Phillips. "[T]he researchers, they see the stuff being used out there and what's happening so that inspires them," he explained, "They see, well, something is happening from what I'm doing here."[688] When asked about innovations or creative ideas for which he was responsible while at the TVA, Phillips replied purely in material terms, pointing to things that were

[685] Hignett, 5–6.
[686] Hignett, 9.
[687] A. B. Phillips, interview by Mark Winter, April 14, 1983, 4, Box 9, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[688] Phillips, 13–14.

developed when he was chief of the process development branch, despite admitting he wasn't "responsible for them."[689]

When former Manager of Power Operations Floyd Thomas was asked in 1981 to consider "any difference in employees [sic] attitudes or dedication between the plant level and the administrative level,"[690] his answer touched on materiality as well as the centrality of those in the plant. "At the plant you have specific things you can walk out and lay your hand on," Thomas explained, elaborating that an issue with a turbine or boiler was observable and soluble after considered discussion, at which point, "You conquered that problem. You have a feeling of mission accomplished." Thomas then offered a point of contrast. "When you come out of the plant and into a central office position where the staff work is planning, engineering, and administrative--that's all paperwork…Many…have trouble visualizing the problem. We have attempted to correct this by more field trips and rotation of field and central office people."[691] Office engineers and administrators were not only spatially auxiliary to this point of action, according to Thomas, but merely support for the work:

> I have always felt that the people in the central office were an extension of the plant people with certain fields of expertise and who's [sic] objective is to help the plant people accomplish their work. It is those people out in the field that are going to keep the cost of electricity down. The central office staff gives guidelines and policy. The field people are the ones who implement programs, procedures, and policy. They're the ones that really make or break your program.[692]

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[689] Phillips, 26.
[690] Winter, qtd. in Thomas, interview, September 1, 1981, 13.
[691] Thomas, 14.
[692] Thomas, 14–15.

Another expression of their link to physical construction appears in their focus on material tools and spaces. Travis Hignett, for example, discussed a further element of employee morale by linking it to one's equipment. "I found that when I came to TVA the atmosphere was quite different from the Department of Agriculture," he began, comparing his two former employers,

> At that time, money was rather short, of course, and the Department elected to keep all of its employees, but they could not furnish them with equipment. So the word went out unofficially that if you can do anything with equipment that they have already on hand, very good. If you can't, perhaps you can write up something, but in any case try to look busy. When I came here I found that everybody had a well-defined job and was expected to do it as promptly as possible and as efficiently as possible. That . . . impressed me more about TVA and anything else.[693]

The different approaches in the late 1930s clearly impacted Hignett's approach to administration: Hignett recalled that, as part of the Eisenhower Administration's budget cuts to the TVA in the early 1950s, "there was some reduction-in-force. Probably tried to keep in balance the funds for the equipment and funds for personnel so that the personnel that were left would have something to work with."[694]

Without prompting, others often discussed the research labs and instrumentation they used during their time at the TVA. Those in the chemical division often described the old machine shops, factories, and equipment they inherited at Muscle Shoals, where they established their laboratories and pilot plants.[695] Copson noted "these facilities" as one

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[693] Hignett, interview, 4.
[694] Hignett, 12.
[695] Copson, interview; "Dr. Harry A. Curtis Dies Here At 79," *The Knoxville Journal*, July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

"thing that made working down there interesting to a chemical engineer."[696] He also noted his involvement in designing the first research laboratory newly constructed for the TVA at Muscle Shoals, a project that began towards the end of World War II, when they began to feel that chemical R&D "ought to have a modern laboratory building in which to work."[697] Floyd Thomas, recalling his time in Power Operations, made a point of the fact that "instrumentation then was very meager" around the 1939 start of his TVA career, and that he had responsibility over instrumentation and control as they modernized plants.[698]

> This, of course, developed on until the 1950s when we went to much more sophisticated controls which today would be very elementary…We went from pneumatic controls and analog control, to electronic controls, and digital and computer applications. It has been very interesting to see the changes that have taken place not only for simplifying the operator's work but for obtaining higher and higher efficiency.[699]

The value of physical construction influenced their free time, as well, as Red Wagner reminisced when asked to reflect on the first three decades of TVA overall:

> One thing stands out in my mind: When we first came down here, we used to go to Norris Dam after work in the evenings or on weekends to watch the construction. A lot of TVA people did the same thing… You knew something was happening and wanted to see it and be a part of it. … We also watched them make the sand for the Norris Dam. … It was fun to watch that going on.[700]

5.3 TVA and Blue-Collar Culture

There is evidence that blue-collar workers and their culture had some impact on TVA culture more broadly and engineering culture and identity in particular; however, this

[696] Copson, interview, 24.
[697] Copson, 25.
[698] Thomas, interview, February 18, 1983, 3.
[699] Thomas, 3–4.
[700] Wagner, interview, 31.

source was filtered (by limiting it to white, unionized skilled and semiskilled workers), and it was idealized through retelling from one administrator to others. In summer 1934, 107 college undergraduates worked as laborers at Norris and Wheeler Dams. Many of them interviewed for (likely professional) positions the following year.[701] In his 1934 address to the Personnel Division Conference, A. E. Morgan used this program to illustrate the influence of "the actual rank and file" on TVA attitude and performance. The students summarized "their impressions" of the summer experience in "essays or little reports," which, according to Morgan, reflected a wide range in the levels of morale they had absorbed on the job. "A good many students say they never worked with a finer lot of labor, where there was such a fine spirit of cooperation on the job," Morgan claimed,

> On the other hand, some were not so fortunate, and say that when on the job they heard that this Tennessee Valley Authority business is all bunk. That attitude was drilled into some of the boys from the day they got here. The laborers you pick are determining whether the tempo that runs through that work…is the tempo of goodwill and social-mindedness, or whether the tempo is of exploiting the job for all we can get. There isn't a man on this job but is helping to make the tempo of the Tennessee Valley Authority…We are not just getting carpenters, foreman, electricians, accountants, etc. We are setting up a type of society, a way of work…[702]

Morgan believed that the students not only reported but internalized laborers' sentiment. "Some of them came to the conclusion it was the greatest place to work in the world," he reflected, "Others went back cynical, saying, 'T.V.A. is just like any other government work.'"[703]

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[701] Personnel Department, "The Employment and Training of College Graduates," 6.
[702] A. E. Morgan, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 6.
[703] A. E. Morgan, qtd. in Tennessee Valley Authority and F. W. Reeves, 9.

The relationship between student summer employee and laborer was not the simple blue-collar apprenticeship that A. E. Morgan represented for the sake of argument, however. Those undergraduates attended weekly lectures and discussions organized on the TVA program, conducted by committees of students, with topics ranging from dam construction to regional planning and social and economic problems.[704] Those extra seminars and terminal reports suggest the students were perceived and treated as a separate group however much they might have learned alongside laborers. Further, one staff member at the 1934 conference reportedly shared "…the hope…that we might be able to bring in a group of college students as common labor again next summer," not only to promote TVA and New Deal "philosophy," but also "because it was felt that this group offers a certain inspiration for self-improvement among the workers with whom they were associated."[705]

Returning to A. E. Morgan's speech, the Director theorized another way in which blue-collar workers might impact TVA attitude: upward mobility. "The man you pick as a carpenter helper may have real quality," Morgan offered, "He may a few years later be head of a construction force and dictating the attitude of the Tennessee Valley Authority toward a good many people. You pick him for one job, but every time you pick a man you ought to be picking him with the idea that there is a possibility for larger functions."[706] Given the TVA's patterns of internal promotion, this was a realistic scenario; given that

[704] Personnel Department, "The Employment and Training of College Graduates," 9.
[705] Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 24–26.
[706] A. E. Morgan, qtd. in Tennessee Valley Authority and F. W. Reeves, 6.

most promotions were limited to white employees,[707] A. E. Morgan was clearly envisioning a specific kind of blue-collar man.

The evening after A. E. Morgan's address saw brief talks by the heads of various sections of the Personnel Department, including one Mr. Killen of Labor Relations.[708] His idealized presentation of unionized workers reinforced Morgan's vision of quality laborers aspiring to greater things. Describing four historical stages through which U.S. labor organization had passed, Killen claimed that they were currently in the fourth stage, "where workers think and act in terms of social good and not personal gains."[709] The skilled and unskilled workers with whom Labor Relations mainly worked—from operating engineers and electricians to painters, "stone cutters, stonemasons, laborers, etc."—had, in his eyes, "proved to the Personnel Division that organized workers could contribute something to the whole development—contribute something to the fine ways of living," Killen explained, adding, "I think these fellows are really carving history."[710] With pun possibly intended, Killen immediately went into an example of stone cutters—"artists" unemployed from their fine marble work after "the crash"—who negotiated competitive prices on small TVA projects; used "self discipline" by firing slow workers to meet their goals; and accepted the appointment of Black laborers to one project despite Killen's hearing "it was impossible to consider the use of Negro labor in the city of Norris."[711]

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[707] Nancy L. Grant, *TVA and Black Americans: Planning for the Status Quo* (Philadelphia: Temple University Press, 1990).
[708] Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report."
[709] Mr. Killen, qtd. in Tennessee Valley Authority and F. W. Reeves, 18.
[710] Killen, qtd. in Tennessee Valley Authority and F. W. Reeves, 18.
[711] Killen, qtd. in Tennessee Valley Authority and F. W. Reeves, 19.

Several engineers personally identified with blue-collar workers through recollections of their own personal backgrounds. Born in 1916,[712] Floyd Thomas recalled, "I grew up during the Depression in north Alabama…[N]orth Alabama was hit as severe as any part of the country with the Depression. It got pretty tight in those days on food and everything else--jobs just weren't."[713] The son of a dentist[714] personally witnessed the impact of plummeting electrical rates when TVA began providing power to his city. "That was great!" he explained, "Then you could burn all the electric light bulbs you wanted. You could even think about electric water heaters. You could even heat your house, that is if you had the money to buy the stoves, the heaters, etc."[715] That money appeared when industries moved in, "[a]ll across north Alabama…and there were jobs and people started going to work. Then they could get rid of those old wood burning stoves…"[716]

Red Wagner recalled a childhood "without electricity and I knew what it was like to be without it,"[717] and this likely informed the social aspects of his field research as head of Navigation. "I'd get out in the reservoir area where we were going to make a navigation channel, and I would talk with the people who lived in the area," Wagner explained, "You'd see their problems and get to understand them pretty well. By the time I got in the General Manager's office I knew the Valley from one end to the other," a thing he valued highly.[718]

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[712] TVA Oral History Program, "Biographical Sketch [Thomas]."
[713] Thomas, interview, September 1, 1981, 1.
[714] Thomas, interview, February 18, 1983.
[715] Underlining in the original. Thomas, interview, September 1, 1981, 3.
[716] Thomas, 3.
[717] Wagner, interview, 15.
[718] Wagner, 17.

Others remembered growing up on farms or in farming communities, contributing to a worldview discussed as part of 'frontier masculinity.'[719]

5.3.1 The Great Depression and Monetary Concerns

The negative impacts of the Depression on personal income and employment status contributed to a resurgence in physical masculinity as it related to a common blue-collar concern for money and 'breadwinner status.' Many engineers who by default might have prioritized intellectual interests and philosophies over wages were now more likely to focus on earning what money they could. As a result, the importance of TVA wages at this time goes hand-in-hand with the desire for an association with physical masculinity, an archetype that might appeal more to one when he doesn't have the luxury to pursue white-collar status symbols.

By 1930, civil engineer Walter Emmons had parted ways with his Ohioan employer because he had refused to work directly for the Russian government. Initially planning to work for his employer on their project in Russia, Emmons resettled his family their home state of Florida for the project's duration before he discovered the change in employer. Although Emmons hinted at some concerns relating to job security in the face of a largely unknown employer, this effective resignation was not the decision of a man who was desperate for work at the time. He joined his family, however, "just when the Depression had a really come in, settled in. And so I couldn't get any work at all in Florida…"[720] He found small jobs repairing buildings and used his personal network to get occasional work

[719] Wagner, interview; Harry A. Curtis, "Handwritten Autobiographical Account," 1962, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Hignett, interview.
[720] Emmons, interview, 2.

with his city. He applied to TVA in 1935 but initially received no answer. "…I did a number of different jobs that year…." he said, "I worked for anybody that wanted anybody to work, I worked." The telegram Emmons received from the TVA the following February requesting he report to Knoxville in four days seemed a vivid stroke of luck.[721]

Others referenced the value of the income more briefly. Rates engineer Edward Falck recalled leaving his Ph.D. program before writing his dissertation in order to hunt for a job, explaining, "It was 1933. I was very anxious to start making a living."[722] When Red Wagner was offered an engineering aide position at the TVA in 1934, "I said I would accept the job if it looked like it would last as much as a year," desiring some baseline level of security.[723] When he got word that he would be employed at least a year—"after that depending on whether I could handle it or not"[724]—Wagner joined the Agency "for $150 a month. That was a pretty good salary at the time."[725] He believed that "the fact that salaries were pretty good in those days," factored into employee morale, generalizing that "The people who came here had been looking for work or had been doing work that was below their capability."[726]

Even after the worst of the Depression, salary and benefits were considered worthy of note, as when chemical engineer A. B. Phillips remembered that, in 1942, "I did get an offer from TVA and it happened to be about, oh, I guess $15 or $20 a month more than the

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[721] Emmons, 2–3.
[722] Edward Falck, interview by Mark Winter, May 5, 1983, 1, Box 4, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[723] Wagner, interview, 1.
[724] Wagner, 1.
[725] Wagner, 7.
[726] Wagner, 7.

others. So I decided I'd take them up on it."[727] Floyd Thomas used TVA's low salaries in the 1950s and beyond as evidence that plant superintendents supported the Agency's mission; however, he noted alternate material benefits in the same breath as this idealism. "[W]e had superintendents who liked TVA, they liked the program, they liked the retirement, they liked the annual leave, the sick leave…" Thomas explained, "TVA's fringe benefits have always been better than private power companies."[728]

5.3.2 TVA and Practical Experience (vs. Intellectuals/Academics)

Despite the strong association with academic and intellectual pursuits noted in the chapter on 'white-collar masculinity at the TVA,' engineering and administrative culture also valued practical experience and foci, sometimes more highly than knowledge. Harry Case generalized on this theme:

> The professional liberals had their own ideas about what TVA ought to do, but it didn't come out that way. It wasn't a place run by professional liberals by any stretch of the imagination. Now whether it would have been better or worse if it had been, I don't know. But it wasn't and the professional liberals sort of disappeared from view altogether. Also, we never had any trek with economists….Nowadays you couldn't plan anything, you couldn't plan a privy without an economist…there are those who said if we had an economist around here we never would have got the first dam built because they would have been able to prove that the cost-benefit ratio didn't work. We never found a place for economists. Now maybe they have in these later years, but we tried to get a chief economist and we did get a couple in there, but they weren't very comfortable and people didn't listen to them as much as they thought they should. So they went their ways.[729]

In simultaneously opposing the intellectual idealism of "professional liberals" and the money-focused models of economists, Case presents an image of the TVA with one foot

[727] Phillips, interview, 1.
[728] Thomas, interview, February 18, 1983, 20.
[729] Case, interview, 21.

in each physical and white-collar masculinity. The rejection of theoretical expertise is apparent, but he also taps into the white-collar idea that the TVA and its population had a magnanimous rather than a monetary focus.

Others deprioritized intellect or academic background more subtly. Travis Hignett graduated from Drake University in Iowa in 1929 before his employment at the Department of Agriculture's Fixed Nitrogen Research Laboratory (FNRL).[730] When the FNRL was involved in a TVA contract to study the feasibility of a blast furnace process for making phosphorus, Hignett recalls, "I worked on it and I became a chemical engineer at that time."[731] When asked to describe his leadership style while at the TVA, he emphasized practical goals, particularly "the idea that we ought to be working on things that were of more immediate use…" In contrast with previous TVA projects "quite different from anything the farmers have ever used or the industry has ever made," when Hignett rose through the Chemical Development Section, "I felt that we ought to take what industry was working on and see where it could be improved to the point where it would be cheap enough for farmers to use widely…And to develop processes that small fertilizer plants could use…"[732]

A common interview question asked subjects to describe what they looked for in the managers they hired. "Mainly the first, of course, you're looking for experience because

[730] Hignett, interview; Hignett's degree was probably in chemistry. See "The Travis P. Hignett Memorial Library," IFDC, 2021, https://ifdc.org/about-us/the-travis-p-hignett-memorial-library/.
[731] Hignett, interview, 3.
[732] Hignett, 17–18.

you wouldn't even be considered without experience," answered civil engineer Walter Emmons.[733]

Hignett took the question as an opportunity to emphasize that engineers did not need writing skills. "… I tried to place people where they could utilize their strong points," he explained:

> If an engineer couldn't write a good report, some people felt that he ought to be trained so he could. But my experience was that if he didn't have that ability it didn't help very much. And so maybe he was just as good at making things work. He could go out to a pilot plant and make things run that other more intellectual people couldn't. So fine, let him run the pilot plant and let somebody else write the report. We did have training programs, of course…but people, engineers and chemists have their own strong points and weak points and training is not always the answer.[734]

5.3.3 Speaking bluntly/rough personality

While answering the interviewer's query about desirable qualities in a manager, Walter Emmons also discussed "their understanding of people" and admitted to a trait within TVA that was foreign to him.[735] "I've had some managers that were tough and I didn't think they understood people, but the people, they were very strong personalities and the people were back of them anyway. And that always amazes me because that's not what I looked for," Emmons explained, "I always looked for people who tried to understand other people and to be able to give and take. But I've had some of the other

[733] Emmons, interview, 47.
[734] Hignett, interview, 18–19.
[735] Emmons, interview, 47.

kind and they got along, too. And they had a backing of a great number of their own people. And they were tough, too."[736]

Praise for traits that Emmons considered "hard-boiled" appears occasionally.[737] Chemical engineer Harry Curtis rose to the TVA Board amid celebration of his "toughness," with employees reportedly forming a "cussed by Curtis" club.[738] Colleagues and friends of Marguerite Owen expressed affinity for her frankness and boldness.[739] A. B. Phillips suspected that he was promoted because he treated a new colleague as his equal, ignorant of the fact that the man was hired as his superior.[740] Phillips also recalled TVA Director Frank Smith as one who "ruffled a lot of feathers" and "had the darndest temper of anybody I've ever seen"—not exactly praising the man, but providing evidence that someone like that could and did direct the TVA.[741]

5.3.4 Hard Work as Tests of Endurance

From the start TVA engineers' work was not particularly dangerous, particularly relative to the high likelihood of accidents and chemical contamination faced by the Agency's

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[736] Emmons, 47.
[737] Emmons, 47.
[738] Edythe H. Taylor to The Honorable Harry S. Truman, Copy, February 4, 1966, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis, "Adventures in Faith" (Valley-Wide Meeting of the Joint Cooperative Conferences, Gatlinburg, TN, March 21, 1957); Julian Granger, "Dr. Curtis Still Tough Despite the Tears," February 12, 1960, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Powell Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis," *The Knoxville News-Sentinel*, March 10, 1963, sec. B-2, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[739] Case, interview; Gant, interview; John Oliver, interview by Mark Winter, June 16, 1983, Box 8, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[740] Phillips, interview, 16–17.
[741] Frank Smith joined the TVA Board after 1953. Phillips, 24.

semi-skilled and unskilled workers, and they were aware of this safety discrepancy.[742] Although obviously a good thing for their well-being, the result of this was the inability to claim physical masculinity through that aspect of their work. Instead, they followed a pattern common to professional men from the late 19th century onward of presenting the workplace as a metaphorical battlefield and an intense test of one's qualities.[743]

It was not uncommon for engineers or other administrators to describe the Agency's early struggles for legal authority and its midcentury funding disagreements in terms of military or mythical battles, as "a handful of Davids fighting a number of Goliaths…putting on shields and taking up swords," while "fighting off the invasions and the incursions of the Federal bureaucrats" and private firms.[744] Speeches honored Harry Curtis as "a first class fighting man," recalling "..the battles he's fought to bring TVA from those early formative periods to what we have today..."[745] Kampmeier spoke of the time the Acting Manager of Power was "seriously injured in a plane crash for a while and he was out of the battle for a while and I had to take over."[746]

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[742] Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report"; Hignett, interview; Copson, interview.
[743] Lisa M Frehill, "The Gendered Construction of the Engineering Profession in the United States, 1893–1920," *Men and Masculinities* 6, no. 4 (2004): 383–403; Angel Kwolek-Folland, *Engendering Business: Men and Women in the Corporate Office, 1870-1930* (Baltimore and London: Johns Hopkins University Press, 1994); E. Anthony Rotundo, *American Manhood: Transformations in Masculinity from the Revolution to the Modern Era* (New York, NY: BasicBooks, 1993); Michael S. Kimmel, *Manhood in America: A Cultural History*, 3rd ed (New York: Oxford University Press, 2012).
[744] Beverly Burbage, interview by Mark Winter, September 15, 1983, 6–7, Box 1, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Case, interview, 48; Gant, interview; Wagner, interview; Ray Copson, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[745] "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323, University of Tennessee Libraries, Knoxville, Special Collections.
[746] Kampmeier, interview, 38–39.

Far more often, however, TVA engineers detailed through interview and personal memoir the long hours and hard work they and their colleagues put in. This was presented with a mixture of pride, complaint, and detached observation. In the 1930s and 40s, Wagner recalled, TVA presented "a job that was a real challenge to all of us…The atmosphere was good and the job was good, the challenge was there and everybody just worked hard." As a point of example, Wagner mentioned more than once, "I don't know how long I worked here before I knew what the hours were." He added, "People would come in in the morning about seven thirty or eight o'clock and go to work and they'd work until they got tired that night," presenting a challenge of endurance, not to mention the half-days Wagner recalled he and his colleagues working on Saturdays.[747] Harry Curtis' former secretary recalled with awe the times she found him sleeping on his drafting table.[748] Donald Mattern remembered his first responsibilities as an associate engineer in the Engineering and Geology Division piling up "Since there were only two workers" in his position, "so we did a lot of odds and ends right off the bat. Incidentally, our working day was supposed to end, I think it was 4:30, and if any of us walked out at 5:00 we sort of felt guilty."[749]

By World War II, Mattern had transferred to the Division of Water Control Planning, and work "accelerated" with wartime projects. "In the first place, we worked 50 hours a week and got paid for 40," Mattern claimed when asked about wartime changes, "while Design worked 50 hours a week and got paid for 50 plus. That's the first thing that happened. We just accelerated our planning and investigational work." He outlined the

[747] Wagner, interview, 7.
[748] Edythe H. Taylor, "Edythe Helen Taylor Scrapbook," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[749] Mattern, interview, 2–3.

work for which his division was responsible on five dams under planning at the time. "That really was a madhouse at that time because we just had to make progress on all of them," he explained, "We worked on the one which was crying for help the most." The division hired more personnel, only to lose most of them to the draft; as a result, "We just worked harder, that's all."[750]

Roland Kampmeier had left TVA for an associate professorship in hydraulic and sanitary engineering at the University of Tennessee in 1939. By 1941, however, he observed declining student enrollment and plans for wartime production and concluded that "the challenge at UT looked like it might be diminishing and the challenge at TVA certainly looked like it was going to be growing."[751] Back at the TVA, he remembered,

> …the morale was exceptional and this despite the fact that during the war years we worked long hours and many of us had to let some of our annual leave expire….and many of us were working 50 or 60 or even 70 hours a week much of the time. There was never a Saturday that I wasn't in the office all during the war years. And I wasn't the only one there, there were a good many others …[752]

Later, Kampmeier claimed that high morale was often not in spite of, but directly due to, high demands on a limited staff. He philosophized on this while explaining his role in the cutbacks for which he was responsible as a TVA consultant in the 1980s. "If you're having to operate with a tight belt and limited financial resources and only the minimum necessary number of people, you may have to strain a little hard and work some overtime and so on. This is hard on people in some ways but it tends to be good for the morale. You get a good team spirit," He explained. By contrast, "When you have a feeling that some of your

[750] Mattern, 9–10.
[751] Kampmeier, interview, 14–15.
[752] Kampmeier, 25–26.

colleagues are sitting around without enough to do and not being very productive, I think that's when morale starts to suffer."[753]

Floyd Thomas likewise linked employee morale in plant operations during and after WWII with intense and lengthy work shifts. "Many times our employees are on continuous work assignment for 24 hours," he explained when discussing the morale involved in their process for problem solving, "Hopefully not often but when people become involved time passes quickly."[754]

When TVA engineers discussed former colleagues, they frequently complimented their hard-working natures.[755] They took particular pride in those who "came up through the ranks" of the Agency, implying that this was the harder and more honorable route.[756] As Floyd Thomas put it when discussing G. O. Wessenauer's rise from assistant hydraulic engineer to Manager of Power, "He dedicated his life to his work. He filled a job--a straight line job. He didn't jump off and go to some other political appointment or something else and then come back and [be] appointed to a high spot."[757] The fact that TVA Directors, specifically, were "political appointments rather than up through the ranks" frustrated some, whereas the anomalous example of Red Wagner's internal rise to Chairman was noted to boost morale.[758]

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[753] Kampmeier, 82.
[754] Thomas, interview, September 1, 1981, 14.
[755] Mattern, interview, 19; Wagner, interview, 17; Curtis, "Handwritten Autobiographical Account."
[756] Thomas, interview, February 18, 1983, 25; Wagner, interview.
[757] Thomas, interview, February 18, 1983, 24–25; Roland A. Kampmeier, "Gabriel Otto Wessenauer 1906-1990," Memorial Tributes: National Academy of Engineering, Volume 6, 1993, https://www.nae.edu/19579/19581/51314/51345/188783/GABRIEL-OTTO-WESSENAUER-19061990.
[758] Thomas, interview, February 18, 1983, 21; Wagner, interview; Gant, interview; Case, interview.

5.3.5 Engineering identity and non-engineers

Their reflections of skilled labor positions, including draftsmen and operating engineers,[759] show that TVA engineers were a distinct group from such skilled workers, but that they held respect for the latter for their direct interaction with the physical systems in question. In the 1930s, as Emmons recalls, newly hired design engineers initially worked as draftsmen, and this was a skill one might not master. "You started out drafting, you drafted for two or three years and then you got to where you were a checker or something like that. It was much slower than it is now…" he claimed in 1983, "I didn't work at drafting very long, though, because I wasn't a very good draftsman, I guess, but I got to be a checker…" promoted, as he presented it, partly for the skills he lacked.[760]

Raymond Copson's recollections of the initial setup of TVA's Chemical Engineering Division at Muscle Shoals in 1934 saw its engineers and chemists as a group "apart from those who were engaged in operating, working in the plant."[761] When A. B. Phillips joined the division as a junior chemical engineer in 1942, however, his duties involved both the design of experimental equipment and "shift work operating the pilot plants that we used to develop the processes."[762] As we have previously seen, Floyd Thomas considered the work of plant operators and others at "the plant level" as more central and important than that of "planning, engineering, and administrative…paperwork."[763] He returned to this theme in his second oral history

[759] Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 17.
[760] Emmons, interview, 5.
[761] Copson, interview, 10.
[762] Phillips, interview, 4.
[763] Winter, qtd. in Thomas, interview, September 1, 1981, 13; Thomas, 14.

interview, noting that "The people that maintain those units…contributed greatly to the overall control of costs."[764]

Perhaps a more notable expression of their association with a blue-collar identity and thus physical masculinity appears in TVA engineers' slights of administrative positions. As we saw in the chapter on 'white-collar masculinity,' several engineers became administrators and saw a fitting link between the two lines of work. Others, however, distinguished between the two, or they distinguished between different gradations of administrators. Mattern, for example, described a former colleague as "one of the real top engineers in the country. In my opinion he should have been chief engineer at one time, but he was too good a technician, I guess, to go that way."[765] Thomas likewise told of "undoubtedly…the best power plant superintendent" in the country: upper management "tried to get him to take the job as Manager of Labor Relations but he likes to be where the action is, that is, in the plants."[766]

Even Personnel Director Harry Case echoed this sentiment when noting the dynamics and relative power between different upper administrative positions. Noting G. O. Wessenauer as "[a] man who could have been a Chairman of the Board or a General Manager," Case continued,

> He didn't want to be General Manager. I don't know why anybody would want to be General Manager. Because it wasn't a real job—that's not quite true. Manager of Power…was a much better job than General Manager. You had more responsibilities. If you're the General Manager and had very powerful people around you, working for you, like Wessenauer…those were big men and you

[764] Thomas, interview, February 18, 1983, 15.
[765] Mattern, interview, 5. Mattern was referring to a Mr. James Bowman, who does not appear elsewhere in this dissertation.
[766] Thomas, interview, February 18, 1983, 37 Thomas was referring to J. C. Hammond, who does not appear elsewhere in this dissertation.

> couldn't supervise those people. You had to sort of coordinate them and sort of serve them…[767]

On the other hand, engineers clearly distinguished themselves from laborers and labor movements. They cooperated with unions; however, they did so by identifying with management rather than identifying and siding with organized labor. That is, working with labor unions should be seen as an expression of white-collar masculinity: it is a tactic of controlling unrest through cooperation rather than through the direct (and often violent) exercise of domination.[768] The TVA had a well-documented policy of cooperating with white labor unions during its first decades.[769] Harry Case's distinction between TVA engineers and labor clarifies the roles in a normal negotiation, however:

> "The personnel director is…kind of an umpire, a middleman, who tries to keep labor and management both happy although their interests at various points are in conflict, especially in costs….our engineers did, and our chemical people, cared about costs and that's where most of the money was spent…The labor people want benefits and salaries and they are obviously not going to see eye-to-eye."[770]

White-collar labor unions were generally absent or relatively inactive until after 1946, at which point they negotiated an agreement "along the lines and in terms of the philosophy which had been developed in the general agreement with the trades and labor employees."[771] Fears about postwar layoffs and abandoned TVA projects certainly factored into the timing of this agreement. In 1946, the president of the TVA Engineers Association

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[767] Case, interview, 23.
[768] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995); R.W. Connell, *Masculinities*, 2nd ed. (Berkeley and Los Angeles, CA: Polity Press, 2005); Akihiko Hirose and Kay Kei-ho Pih, "Men Who Strike and Men Who Submit: Hegemonic and Marginalized Masculinities in Mixed Martial Arts," *Men and Masculinities* 13, no. 2 (2010): 190–209.
[769] Case, interview; Grant, *TVA and Black Americans*.
[770] Case, interview, 46.
[771] Case, 45.

requested information on future prospects of the Engineering and Construction Departments. Chief Engineer C. E. Blee replied directly to put Association members at ease. "We can well appreciate your concern and know that this concern extends beyond the question of merely whether there will be a continuing job with TVA," Blee wrote, "Of more importance is the question as to whether there will be jobs which are interesting and stimulating…and whether the future with TVA offers opportunities for the professional development and advancement of the individual engineer."[772] He then provided a positive report of "current and future plans of the Engineering and Construction activities," outlining numerous projects that would partly be funded by the "considerable income" of the public corporation.[773]

"…[W]e had an engineers association, but it was not political at all," said design engineer Walter Emmons when asked about an engineering union. "What I mean by that is that…it was strictly technical, professional…And it was much later that they came along with the political and it never did, as far as I know, get real political." From Emmon's description, it functioned more as a professional society. "…[I]t certainly did give you a chance to get acquainted with a number of the people that you wouldn't have met otherwise, . . . working in your organization. And you could hear from them things that you wouldn't hear otherwise…"[774]

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[772] C. F. Blee to Frank D. Jones, letter, June 6, 1946, Box 482, folder 7; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[773] TVA Engineering and Construction Departments, "Engineering and Construction Activities of TVA," June 6, 1946, Box 482, folder 7; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[774] Emmons, interview, 27–28.

5.4 Example: Wessenauer & Kampmeier

G. O. Wessenauer and Roland Kampmeier, civil engineers who rose through the ranks to head the TVA Power Division, provide us with two examples of widely admired TVA engineers who strongly exhibited certain traits of physical masculinity, mainly in their aggressive competitiveness with other TVA divisions. They combined this with certain traits of white-collar masculinity, thus presenting images wholly laudable within TVA engineering culture. Occasionally referred to as 'twins' or a 'duo,' the two were noted for their similarities and were normally described or referenced together;[775] as a result, this section discusses them at the same time.

G. O. Wessenauer, known as "Wess" to professional acquaintances, hailed from Pennsylvania and earned a B.S. in civil engineering at the Carnegie Institute of Technology.[776] He spent eight years working at private power companies in West Virginia and Pennsylvania before joining the TVA as an assistant hydraulic engineer in 1935, at about 28 years of age. By 1941, Wessenauer had worked his way up to Assistant to the Manager of Power, and then Acting Manager of Power in 1943. He worked as Manager of Power from 1944 until his retirement in 1970, after which he worked as a consultant for TVA and other institutions.[777]

Roland Kampmeier, 4 years younger than Wessenauer and occasionally called "Kamp," was born in Iowa, and he earned a B.S. in civil engineering and a Master's in hydraulic engineering from the University of Iowa. After his 1933 Master's graduation,

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[775] Oliver, interview; Gant, interview; Case, interview; Wagner, cited in Kampmeier, interview; Wagner, interview.
[776] Kampmeier, "Gabriel Otto Wessenauer 1906-1990."
[777] Kampmeier.

Kampmeier spent a few months with the U.S. Bureau of Reclamation before joining the TVA as a hydraulic engineer.[778] He remained in that position until 1939, when he briefly left the Authority for a University of Tennessee associate professorship in hydraulic and sanitary engineering. In 1941, Kampmeier rejoined the TVA as Chief of the Power Economic Branch. He became the Director of Power Utilization in 1946, and in 1950 he was promoted to a dual position as Assistant Manager of Power and Director of Power Supply. Kampmeier resigned from this position in 1961 to work as a private consultant, advising on hydroelectric development in 24 different countries over the following 23 years.[779]

It is clearly documented that TVA resources and the Agency's agenda shifted over this period to focus more and more on the production of electrical energy, and less on its other initial projects like land reclamation and flood control.[780] There were clearly a number of reasons for this decades-long shift, from economic to political to idiosyncratic.[781] This section reflects on the personalities involved in the dominance of the Power Division as salient personalities in the TVA, without contending causality in any direction.

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[778] "Kampmeier, Roland August," Chattanoogan.com, September 3, 2003, https://www.chattanoogan.com/2003/9/3/40491/Kampmeier-Roland-August.aspx; TVA Oral History Program, "Biographical Sketch [Roland A. Kampmeier]" (Tennessee Valley Authority, February 15, 1983), Box 6, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[779] TVA Oral History Program, "Biographical Sketch [Roland A. Kampmeier]"; "Kampmeier, Roland August"; Kampmeier, interview.
[780] Erwin C Hargrove and Paul Keith Conkin, eds., *TVA: Fifty Years of Grass-Roots Bureaucracy* (Urbana and Chicago: University of Chicago Press, 1983); Erwin C Hargrove, *Prisoners of Myth: The Leadership of the Tennessee Valley Authority, 1933-1990* (Princeton University Press, 1994); Grant, *TVA and Black Americans*.
[781] Thomas K McCraw, *TVA and the Power Fight, 1933–1939* (Philadelphia: JB Lippincott, 1971); Hargrove and Conkin, *TVA: Fifty Years*; Hargrove, *Prisoners of Myth*.

Regardless of cause or effect, then, it was widely observed that Wessenauer and Kampmeier were aggressive in pushing the agenda of the Power program—frequently summarized as providing low-cost electricity—throughout their administrative careers.[782] Red Wagner, for one, believed that this approach impacted the centrality of the Power Division. "The rise and fall of divisions depends a great deal on individual personalities," he claimed,

> Wess and Kamp believed in arguing for their viewpoint as hard as possible. They believed in their program and felt it was the responsibility of any other division director at odds with Power over some issue to fight just as hard for his beliefs. They weren't going to help the other guy make his case before the Board. Of course, there were other division directors who were more willing to look for the common ground or valid points among the multiple purposes of TVA that the Board and General Managers have.[783]

Wagner's retelling of this method in his 1983 interview also implied that Wessenauer went on the offensive, as when "he expected to put in the case for Power and play it to the hilt and he expected people to defend themselves in their own programs and then let the Board decide..."[784] Whereas another division head would "fight like hell but once the decision is made he will live with it more willingly," Wagner noted, "Wessenauer and Kampmeier on the other hand never or rarely gave up."[785] Wagner considered this tenacious dedication to competition over cooperation "a pretty good way to work."[786]

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[782] Wagner, interview; Oliver, interview; Thomas, interview, February 18, 1983; Kampmeier, interview.
[783] Red Wagner, qtd. in Marc J. Roberts and Jeremy S. Bluhm, *The Choices of Power* (Cambridge, MA: Harvard University Press, 1981), 93; also qtd. in Kampmeier, interview, 32.
[784] Wagner, interview, 17.
[785] Red Wagner, qtd. in Roberts and Bluhm, *The Choices of Power*, 93; also qtd. in Kampmeier, interview, 32.
[786] Wagner, interview, 17.

When Kampmeier was queried about Wagner's interpretation of their approach, he replied, "I suppose that is probably a fair comment. We had a pretty tenacious staff." He defended the magnanimous intent behind the approach, however:

> I think that we would object to--I think I can speak for Wes as well as myself on this-- that we would object to anyone concluding that we didn't have TVA's overall interests at heart or a program that would be of maximum overall benefit to the Valley. But I think it is correct to say we felt that with the responsibilities assigned as they were that it was up to us to argue our position and somebody else to argue another position…[787]

"Now, Kampmeier has a steel-trap mind, and is a whale of a negotiator," John Oliver recalled, "I've always said that rather than trying to negotiate something with Kamp, I'd just go in and I'd say: 'Now look Kamp, be halfway decent on this darn thing,' rather than try to outwit him."[788] Because of his aggressive negotiations, Oliver believed, Kampmeier "engendered a lot of resentment" in the coal industry against the TVA. "If he hadn't been quite so zealous, TVA might not have had so much trouble later on," he mused, "But it would have paid much more for coal." Such 'zeal' included the deception involved in 'outwitting' others, as when Oliver recalled the head of the Kingston Steam Plant's expressing frustration about negotiating a long-term coal contract with Kampmeier. "This guy Kampmeier is something!" Oliver recalled the executive as saying, "You can go in and talk with him for a while and you think 'Well, things are coming along pretty well.' And you go outside his office and then you look down and you've lost your pants."[789]

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[787] Kampmeier, interview, 32.
[788] Oliver, interview, 11.
[789] Oliver, 10–11.

Wessenauer appears to have been more reserved than Kampmeier. Kampmeier himself described Wessenauer as "usually reserved" in the obituary of the latter.[790] "A lot of people in TVA found Wessenauer a kind of hard person to work with in that they didn't think he was very communicative…" Kampmeier said in his interview, "Some people found him a little . . . taciturn, I guess, would be the word. Not as loquacious as me anyway."[791] Oliver mentioned his generally being seen as "a grumpy appearing kind of a guy."[792] Wagner called him "a very hard worker."[793] A. B. Phillips provided a useful perspective of someone who "didn't know him very well": from what Phillips saw "at some of the early Board meetings and on the plane when we'd be going up to the Board meetings. He seemed like a pretty effective sort of person and pretty authoritative, strong, forceful type of guy. I think he had pretty good control of his organization. That was the impression I have."[794]

Descriptions of Wessenauer and Kampmeier were also woven through with values of white-collar masculinity. In his interview, Wagner offered his description of their argumentative tactics an example of Wessenauer as "an extremely fair individual." Wagner attended the same church as Wessenauer and "always thought he was a great man."[795] Three separate interviewees called Wessenauer "dedicated" at least five times, occasionally listing it simply as a virtue without clarifying to what the man was dedicated, as when Floyd Thomas called Wessenauer and Wagner "truly dedicated people who had

[790] Kampmeier, "Gabriel Otto Wessenauer 1906-1990."
[791] Kampmeier, interview, 77–78.
[792] Oliver, interview, 10.
[793] Wagner, interview, 17.
[794] Phillips, interview, 18.
[795] Wagner, interview, 17.

unquestionable integrity."[796] Oliver followed the descriptor with Wessenauer's interest in the Agency, his own work, and/or the end product: "…he's dedicated, and could have left TVA for ten times his salary, I'm sure. Well, let's say five times, easy. But he wouldn't have considered it. He loved his work. He was determined to keep rates down."[797] Boundaries between the TVA's general welfare and low electrical rates were similarly blurred in Thomas' account of Wessenauer as

> …the type of guy that was dedicated towards controlling costs so that the people would be able to enjoy electricity to the fullest…He was a truly dedicated person who was hard-nosed and wanted to be sure that any of the passing fancies that came along with some new rule and regulation had full justification for its existence before TVA would jump into some new program without good reason. In his era of guidance, the TVA prospered.[798]

Thomas further underscored Wessenauer's stoic magnanimity in later explaining that Wessenauer was "not given toward trying to take center stage or play the 'Prima Donna.' … [His] first intent was for the good of the people of the Valley."[799]

Kampmeier described one line that he drew in his code of conduct regarding their debate tactics. He expected those within the TVA to have the same "access to the Board that we had"; as a result, he did not limit himself when arguing against them. Because external institutions like "the power distributors or … the industries we sold power to or whatever" did not have that same Board access, Kampmeier believed, different rules applied.[800] "It was up to us in presenting anything to the TVA Board for approval to present the distributor's case as well as our own," he explained,

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[796] Thomas, interview, February 18, 1983, 25; Oliver, interview, 10; Wagner, interview, 17.
[797] Oliver, interview, 10.
[798] Thomas, interview, February 18, 1983, 24.
[799] Thomas, 25.
[800] Kampmeier, interview, 34–35.

> And if there was an argument between us, for instance, we couldn't just say to the TVA Board: 'These dumb distributors want to do something that's all wrong, and we think you ought to ram something down their throat.' We had the responsibility for telling the TVA Board what the problem was and what the pros and cons were of the position of TVA and the distributors…[801]

Similar rules seemed to extend to internal conflicts when the other party had a clear disadvantage. Oliver recalled a decision for which he was responsible as the TVA's new General Manager in 1951. He called a meeting with Wessenauer and the head of another division, allowing each side to present his arguments. Oliver recounted,

> The other fellows didn't seem to me to have much of a case, or didn't present it. I remember saying: 'Well, alright, our office will issue a memorandum on this matter this afternoon,' and everybody left for lunch. Along about 2:30, Wessenauer came back to my office, and said: 'You know, if there's a debate going on, I don't know any other way but to make the best case I can. These other birds didn't do their homework properly.' What he was really saying to me was that I'd be making a mistake if I've ruled completely in Power's favor. I've forgotten what the issue was, but have never forgotten Wes's performance. It takes a big man and a man who's secure in his own position to do what he did.[802]

Regardless of their qualities of white-collar masculinity, several impressions indicate that these men had very strong influence on Agency-level decisions, to the extent that the Board did not approve projects outside of the Power Division if Wessenauer or Kampmeier did not support them.[803] "You'd get, because of his [Wessenauer's] great strengths, some criticism from other places within the organization that we were being led around by the nose by Power," Oliver admitted of the perceived relationship between Power and the General Manager's office.[804] Oliver didn't explicitly deny this; on the

[801] Kampmeier, 35.
[802] Oliver, interview, 11.
[803] Winter, in Phillips, interview, 18.
[804] Oliver, interview, 10.

contrary, he went on to offer the above anecdote, an example of a decision that he made because of Wessenauer's suggestion.

At another point in Oliver's interview, he described the dynamic between Power and Agency-level managers and directors as a question of expertise, which displays values of white-collar masculinity, but also a product of the informality often associated with physical masculinity. In 1951,[805] when Oliver became General Manager, the Board consisted of Harcourt Morgan, former Senator James P. Pope, and Gordon Clapp.[806] Noting that "Clapp was very close to the Power program" and "Harcourt Morgan was, of course, an elderly gentleman by that time and agriculture was his forte,"[807] Oliver explained,

> Morgan and Pope pretty much deferred to Clapp on matters of power, and Clapp dealt pretty directly with the Power people—Wessenauer and Kampmeier…There was little organizational rigidity back in those days. I was certainly not disturbed when Clapp dealt directly with the Power people. He was very good about keeping me informed about what was going on and so were the people in Chattanooga. I wasn't the expert in the Power field, and did not pretend to be.[808]

This, according to Oliver, significantly impacted the TVA's decision to expand from hydroelectric power into coal-fired power after World War II.[809]

When asked about the claim that "people like Wessenauer tried to make their organizations dominate TVA,"[810] Harry Case interpreted it as "the failure, if you want to use that word, to move Wessenauer or Kampmeier…into general administration."[811] Case

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[805] Tennessee Valley Authority, "Biographical Sketch [John Oliver]," 1983, Box 8, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[806] Oliver, interview, 8–9.
[807] Oliver, 8–9.
[808] Oliver, 9.
[809] Oliver, interview.
[810] Winter, qtd. in Case, interview, 37.
[811] Case, 38.

noted that Wessenauer was initially "very active in the labor relations part of personnel administration" but speculated that, as "the job that he had to do" became more involved, Wessenauer focused his attention almost solely on the Power program.[812] "[T]hose operating people…had no desire to move into general administration, any of them," Case elaborated, "And they didn't because they thought of themselves as basically operators of specialized programs. Now those programs were big enough and the opportunities and challenges and responsibilities were sufficient to interest the talents of a very high-level person…there wasn't a bigger job in TVA for them."[813]

Their ambitions for the Power program itself were great. Circa 1967, Wessenauer reportedly claimed to a group of TVA power distributors "that history had never penalized utilities for thinking too big."[814] Floyd Thomas reflected in his 1983 interview, "There have been questions [recently] about the planning of the expansion of TVA's Power programs. In retrospect, TVA perhaps over-planned…"[815] Kampmeier's own 1983 reflection supported this:

> …I think maybe we got carried away a little bit too much with how much advantage we thought we saw in the larger units…I got to thinking in terms of how big it might be possible to make the units. We probably didn't give enough attention to the fact that the bigger you made a unit the more difficult it's going to be to keep it running at a high rate of availability and so on. But I don't think we got too far out of line either way. I think we were a little slow stepping up sizes and then stepped them up a little too fast, maybe. Maybe we changed a little too rapidly…And I take responsibility for whatever errors or judgments there were there because that was largely my responsibility to make those recommendations.[816]

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[812] Case, 37–38.
[813] Case, 38.
[814] Winter, qtd. in Oliver, interview, 23.
[815] Thomas, interview, February 18, 1983, 24.
[816] Kampmeier, interview, 40–41.

Kampmeier likewise recalled a meeting early in his TVA career--when he was still in his entry-level position as a hydraulic engineer—in which he "argue[ed] until nearly midnight" over the planned generating capacity for Norris. Kampmeier passionately tried to convince "some of the planning people" and the head of the design & construction of Norris "that they ought to make space for a third generating unit"; however, he was unsuccessful.[817]

This focused interest on the Power program for which they were responsible often put them in specific conflict with other TVA divisions, which can serve as examples of the conflicts on which the Board and General Manager made the rulings mentioned above. Kampmeier recalls a protracted disagreement between Power and the Department of Chemical Engineering "in the early years… about the prices that they ought to pay for electricity to operate their fertilizer works." According to Kampmeier, Chemical Engineering believed that the rates they paid for TVA-produced electricity should be lower than those charged external institutions; this would logically benefit the department by lowering the cost of the fertilizer they produced. The heads of Power, meanwhile, "thought…that they ought to pay the same price as an industry would pay and that then our books would stand on their own feet and their books would stand on their own feet…We said it wasn't fair to show low cost of fertilizer at the expense of a burden on the power system." This resulted in "a long drawn-out argument about that. And I think we [Power] finally prevailed, but we wouldn't have if we hadn't been pretty tenacious about it."[818]

[817] Kampmeier, 4–5.
[818] Kampmeier, 32–33.

Another illustration, also provided by Kampmeier, appears in bureaucratic boundary disagreements with TVA's Materials Division over coal procurement. This was a logical result of a rather aggressive 'DIY mentality' that Kampmeier explained as such: "…if there was any problem that was of major concern to our job of providing ample power at the lowest possible cost it was up to us to do whatever was necessary to see that we found the answers. And if we weren't getting those answers fast enough or well enough from someone else, then we'd better start providing some of them ourselves."[819] Once the TVA began to expand into coal-fired plants, the Power Division faced the need to rapidly expand its supply of coal. Citing this as one instance in which "I'm not sure…whether Wess would back me up completely," Kampmeier explained,

> I found that we just had to start getting a few key people who could become knowledgeable fast…We had to identify sources in terms of coal reserves… suppliers, mining companies…We had to find ways of interesting some of the bigger companies in selling coal to TVA…We had to look at the whole gamut of questions about coal supply… types of documents… kinds of contracts… Well this meant that we found ourselves stepping on the toes of the Purchasing people. And so there was kind of a running argument as to whether Power was muscling in on some of the jobs of the procurement people. I argued that this ought to be consolidated, integrated into one position and that it really ought to be in Power because it was such a big component and TVA's power costs…Paul Fahey, who was in charge of the Materials division, in charge of coal procurement, and I worked very well together and he's one of my best friends over the years… So it was a friendly argument. Nevertheless… Fahey had just as much access to the Board as I did and therefore if it was a knock down, drag out fight, so be it.[820]

Kampmeier also referenced "some pretty lively discussions" between his division and TVA Health and Safety. "They certainly had a point," he admitted, "We were inclined to think they were overly concerned and I think the truth was somewhere between the two

[819] Kampmeier, 37–38.
[820] Kampmeier, 33–35.

positions."[821] One might contrast this reflection and its conclusion with that of Floyd Thomas in Power Operations. "I think one has to be very careful in trying to examine his own objectives to make sure that he doesn't get too narrow in what he is looking at," Thomas mused, and he volunteered an example of his experience with O. M. Derryberry at the head of Health and Safety. "[I] had some problems…being able to visualize why we should spend money for an industrial nurse…" Thomas recalled, "Until I began to look at--well, look, that guy is trying to do the same thing that I am. He is trying to do something for our people. He is trying to control the cost where it fits in with maximum benefit. So we had industrial nurses in our larger plants."[822] Thomas did not limit himself to a compromise "somewhere between the two"[823]; he emphasized that Health and Safety were right.

5.5 Departmental/Divisional Competition

The Power Division was not alone in its competition with other departments, despite the degree to which it was seen as exceptional. Some recalled direct conflicts of interest, focus, or status between the Design Division and other departments or divisions. Donald Mattern frequently recalled feeling frustration with the Division of Design once he transferred to the Division of Water Control Planning in 1938, for example. Once a watershed was selected for development, Mattern recalled that his division would complete a project planning report, which was then sent to the Board for approval, and then "our report was

[821] Kampmeier, 29.
[822] Thomas, interview, February 18, 1983, 26.
[823] Kampmeier, interview, 29.

turned over to the Division of Design and they went into detailed design of the project. Their main object seemed to be to see how they could change our plans!"[824]

Later, Mattern discussed several state-of-the-art elements that the Water Planning Division proposed for dam designs before noting "that many of the things which we proposed were not accepted by Division of Design because they were much more conservative than we were… Numbers of times we thought they were overconservative on things." When the Flood Control Branch, for example, provided "floods that would have to be handled and we would layout dams for that," Design "would always want more freeboard," or more space between the maximum water surface and the top of a dam. "Of course, Design's comment always was: 'We're responsible for the safety of these things. You can propose them but we're the ones that have to say they're safe.'…" Mattern said, "We were always trying to build something as cheaply as we could and we accused Design of overbuilding at times. Personally I think they did." Mattern's previously mentioned recollection that, during WWII, his division "worked 50 hours a week and got paid for 40 while Design worked 50 hours a week and got paid for 50 plus" likewise indicates so much competitiveness or resentment that such a memory could remain salient until his 1983 interview.[825]

Like Mattern, Floyd Thomas recalled "some strong internal disagreements" between the Design Division and his own Power Operations. Thomas, however, presented Design's decisions as an example that "the cheapest thing wasn't always best." While one model of pulverizer for a boiler might have a lower purchasing price than another, he

[824] Mattern, interview, 6–7.
[825] Mattern, 9.

explained, "say you're going to burn three million tons of coal a year in this plant and it costs you ten cents a ton more in one pulverizer to pulverize a ton of coal in it than it does in another. That is one heck of a front end cost every year that you operate that plant. Then there is the differential in cost of maintaining it, as well as the availability of that pulveriser."[826] The example supports the idea that the different foci of Design and Operations call for input from both groups--specifically, from Thomas' point of view, more input from Operations. "There are many things that we as the operators have not had as much an input into the design and construction of as we needed to. We would like to have had more say about both fossil and nuclear plants," he said, "But I guess that's one of the good things in private power companies, the operating organization has final say on equipment and design. In TVA practice the Design group usually has the final say."[827]

Red Wagner recalled competition between the Agricultural program and hydraulic engineers, possibly at the level of the Power Division. When he became Assistant General Manager in 1951,[828] Wagner inherited responsibility for the Tributary Development Program, sometimes known as the Small Watershed Program, from John McAmis, Director of the Department of Agricultural Relations. "It had been something of a contest between the agriculturalists and the hydraulic engineers in TVA whether this was to be an agricultural program or a hydraulic development program," Wagner explained.[829] It had developed into an agricultural program while McAmis headed it; the project at Chestuee

[826] Thomas, interview, February 18, 1983, 40.
[827] Thomas, 40–41.
[828] W. F. Willis, "Aubrey J. Wagner 1912-1990," Memorial Tributes: National Academy of Engineering, Volume 6, 1993, https://www.nae.edu/19579/19581/51314/51345/188777/AUBREY-J-WAGNER-19121990.
[829] Wagner, interview, 10.

Creek "was largely a test demonstrations program."[830] Gordon Clapp, TVA Chairman at this point, "had some different ideas about what it ought to be. He felt that the tributary areas ought to be basically little TVA's, I think, with interest in the whole spectrum of resource development…"[831] A fundamental disagreement between the two sides involved water control, as Wagner explained:

> The agriculturalists felt that they could control the water by what they planted in the soil and the engineers said you have got to build dams or do channel straightening projects or something like that. Well, you really needed to do both of them, I guess, in most cases, but they were missing the point which was that the people in the area were not concerned about water control except if it affected their living.[832]

A streak of competition between divisions is also observable through how TVA engineers distinguished their own division from others. Interestingly, while some of the following examples display expressions of physical masculinity in their competitiveness and personal exceptionalism, the content or values on which they claimed superiority were generally those of white-collar masculinity.

The Chemical Engineering department saw itself as separate from the rest of TVA in large part due to its physical location, concentrated in Muscle Shoals, in north Alabama (and the adjacent towns of Sheffield and Florence).[833] Chemical engineers recalled even feeling separate from the Agricultural Relations department, despite their common focus on fertilizer production and implementation, until the two were combined at Muscle Shoals in 1960.[834] Engineers recall that the Chemical employees during the first decades of TVA

[830] Wagner, 11–12.
[831] Wagner, 11.
[832] Wagner, 12.
[833] Copson, interview; Phillips, interview.
[834] Phillips, interview; Hignett, interview; Wagner, interview.

were "a rather close-knit group" and that "[e]verybody at work actually cooperated" to a degree that surprised those newly hired or transferred to the department.[835] "[I]t was all teamwork," Hignett emphasized when asked about his accomplishments in the department.[836] Chemical also felt exceptional in its degree of community involvement and cooperation. As Phillips recollected,

> We always tried hard to be responsive to requests, comments, and so on, and respected them. We believed in cooperation. We were, had an advantage in TVA over some of the other divisions because we had so much contact with the public out there, the fertilizer industry, people that were interested in our work. And we were just geared to being responsive and that was the name of the game, to find out what was needed and respond to it… I think that spilled over to within TVA relations, too.[837]

Leland Allbaugh in the Agricultural Relations Division, however, recalled that the Chemical Engineering Division "pretty much dictated" what his division could do through which fertilizers the former produced,[838] and some in Chemical recalled their relative dearth of community input before the 1960 merger.[839]

Floyd Thomas in Power Operations also distinguished his department from the rest of TVA in the degree of its dedication to public service. "Folks thought TVA ought to be a servant to the people, to do something to try to help the Valley achieve its potential. In our operating plants this feeling of dedication still exists. Our operating plants are a little different [than the rest of TVA]," Thomas explained.[840] He believed that this was at least

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[835] Copson, interview, 9–10; Hignett, interview, 10; Curtis, "Handwritten Autobiographical Account."
[836] Hignett, interview, 9.
[837] Phillips, interview, 23.
[838] Dr. Leland G. Allbaugh, interview by Mark Winter, September 15, 1981, 16, Box 1, folder 4; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[839] Hignett, interview; Phillips, interview.
[840] Bracketed text appears in the original transcript, approved by Thomas. Thomas, interview, September 1, 1981, 8.

partly due to the relative importance and public attention placed on the Power Division overall. "I see Power as the most exposed of any TVA organization," he noted, pointing to press and public interest in any electrical rates change or "[i]f something abnormal happens in a nuclear plant regardless of whether the event is trivial or not…"[841] Recognizing the "important roles" of other TVA divisions, Thomas admitted, "I guess one tends to look at his organization's part as the most important. However, I think energy is one of the most important parts of any country's resources."[842]

Competition and disagreements arose within departments and divisions, as well. Emmons recalled passionate fights within the Design Division:

> They'd fight to the death on a point of design that they thought was right, that they had a difference of opinion on. We'd have it right up to the teeth on that….These projects were not just mechanical things, but they were part of their life. They took it home with you, too. A lot of times in the morning there was all this stuff that they'd done the night before trying to check out. They either thought they were more right than before or otherwise…they wouldn't say anything if they found out that they were wrong.[843]

Phillips likewise recalled some conflicts of interest between the Process Development and the Design branches within the Chemical Division. From the point of view of Process Development, Phillips explained, "there's so many times you think, well, if you go a little bit further maybe you could find out a little bit more….the people in the design branches say: 'You've got to stop here. Stop this development so we can design this thing and build it. Don't just keep developing and perfecting and then we've got to come back and change our designs and so on.'"[844] Floyd Thomas also remembered competition between different

[841] Thomas, interview, February 18, 1983, 39–40; Thomas, interview, September 1, 1981.
[842] Thomas, interview, September 1, 1981, 10.
[843] Emmons, interview, 30–31.
[844] Phillips, interview, 27.

power plants within Power Operations for records of continuous operation and capacity, though this may not have developed until the early 1950s.[845]

5.6 TVA and Private Industry

The struggle between the TVA and private power utilities in the first decades of the Agency's existence has been widely documented.[846] As a publicly-funded corporation, the TVA was generally derided in private industry and finance as "a socialist outfit" until the Self-Financing Act of 1959 allowed it to sell bonds to support itself.[847] The Agency trailed accusations of Communism well before and after the peak of McCarthyism.[848]

TVA operated in an adequately distinct fashion from private firms that it was not outlandish to speculate about differences in employment. One observes this in John Oliver's recollection of Harry Curtis' reaction to Oliver's 1954 resignation from the TVA: "I remember Harry Curtis...said, when I told him I was going to resign, that I ought to think hard about that…that I hadn't been out much in the world of business and it was a rough world; and maybe I'd better stay where I was."[849] Curtis was surely speaking out of self-interest to some degree, in not wanting to lose his General Manager; however, having spent several years in private industry himself, the man spoke from experience.[850]

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[845] Thomas, interview, February 18, 1983.
[846] McCraw, *TVA and the Power Fight, 1933–1939*; Hargrove and Conkin, *TVA: Fifty Years*; Hargrove, *Prisoners of Myth*; Aaron Wildavsky, "TVA and Power Politics," *The American Political Science Review* 55, no. 3 (1961): 576–90.
[847] Wagner, interview, 25, 24; Hargrove and Conkin, *TVA: Fifty Years*.
[848] Kampmeier, interview; Thomas, interview, February 18, 1983; Wagner, interview; Hargrove and Conkin, *TVA: Fifty Years*.
[849] Oliver, interview, 24.
[850] Tennessee Valley Authority, "Biographical Sketch [Oliver]"; "Dr. Harry A. Curtis Dies Here At 79"; "Dr. Harry Curtis," July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Jaques Cattell, ed., "Curtis, Dean Harry A(Lfred)," in *American Men of Science: A Biographical Directory* (Lancaster, PA: The Science Press, 1949), Box 1,

The TVA, however, acted as a private corporation in many regards, and through this the Agency and individual employees performed physical masculinity, most notably in relationship to competition. Again, however, we see several contradictory examples that stress TVA's concern for cooperation, now exercised in external relationships.

The TVA competed with industry for manpower recruitment. As we saw in a previous section of this chapter, TVA engineers occasionally accepted Agency employment because it offered them slightly higher wages; however, it seems that those white-collar employees who chose to join or remain at TVA more often did so for other material benefits or personal interest in their jobs.[851] Several engineers left TVA for jobs in private industry, including Raymond Copson.[852] Others, like Edward Falck, left TVA in hopes of continuing public work but found themselves in private industry regardless.[853] Blue-collar employees also frequently left for industry jobs when available and attractive, as we previously saw was the case for Black employees.[854]

During World War II, however, the TVA consciously tried not to compete on recruitment. In a report on the 1940-41 push to increase staffing the Personnel Department noted that they refused to hire employees of private agencies involved in national defense without getting approval from those employers.[855] A 1942 press release likewise noted that

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folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."

[851] Phillips, interview; Wagner, interview; Thomas, interview, February 18, 1983; Curtis, "Handwritten Autobiographical Account"; Falck, interview; Emmons, interview; Personnel Department, "Study of Experience."

[852] Personnel Department, "Study of Experience"; Copson, interview, 19–20.

[853] Falck, interview, 21.

[854] Grant documents migration of workers regardless of race. Grant, *TVA and Black Americans*.

[855] Personnel Department, "Recruitment of Personnel for an Anticipated Expanding Program of Construction" (Tennessee Valley Authority, July 1941), Box 400, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

the TVA used "appropriate safeguards against draining manpower from others essential for industry."[856] They may have received federal directive to take such "safeguards." None was mentioned in either case, however; the TVA presented itself as voluntarily dedicated to national defense. During this same time, TVA sought to keep its professional staff from leaving for private industry "by repeated survey and reclassification," in hopes that swift upward mobility might retain some.[857] They also noted that it had been helpful to know about planned layoffs from private organizations, which "have been productive of a number of applications and a few employments."[858] Limited relative to the private sector, the TVA sought unsuccessfully to recruit engineering personnel from state highway departments, and it tried to work with other public sectors to contact qualified engineers.[859]

Aside from manpower recruitment, TVA's relationship with private industry depended on the industry and its economic relationship to TVA. The TVA was most notorious in its competition with electrical utilities, and it also faced passionate competition from private fertilizer interests. Electrical equipment manufacturers, meanwhile greatly benefitted from the affordable electrical rates that the TVA introduced and cooperated with it. And when the TVA began construction of coal-fired plants, it did so as the coal industry's wily consumer.

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[856] Press release (Knoxville, Tennessee: Tennessee Valley Authority, April 17, 1942), Folder 001432-011-0308: Tennessee Valley Authority, 1941-1943; Group II, Series A, General Office File, Labor; Papers of the NAACP, Part 13: NAACP and Labor, Series A: Subject Files on Labor Conditions and Employment Discrimination, 1940-1955, Library of Congress, https://congressional.proquest.com/histvault?q=001432-011-0308&accountid=11107.
[857] Personnel Department, "Recruitment of Personnel 1941," 3.
[858] Personnel Department, 6.
[859] Personnel Department, "Recruitment of Personnel 1941."

The TVA competed with the electrical utilities already serving some portion of the southeastern U.S. not only through its much-touted 'yardstick rates,' but also in the court of public opinion, by distinguishing itself from private corporations. According to Edward Falck, "utilities were pretty much in the dog house" in the 1930s "because of the misdeeds of holding company management distantly located in cities like Chicago and New York." He continued,

> Very few people who are young today could really know the feeling of hatred and hostility that prevaded [sic] many small towns and rural areas because they felt that their lives were being dominated by unseen bankers and corporate manipulators housed in skyscrapers at Wall Street or Rector Street or in some huge office building in Chicago. What we kept emphasizing was that we were decentralizing authority and policy-making and getting at the grass roots level and letting the people decide their own fate and take responsibility for their own affairs.[860]

Falck admitted that they only followed through on that presentation to a certain extent, in that the TVA allowed each city to run its electrical distribution system, "but only within the framework which we established."[861]

The TVA was also quite consciously distinct from private utilities in its approach to competition, specifically due to its public status. Rates engineer and TVA Director of Rates and Research Edward Falck recalled, "I was quite candid…that nobody should say that what the TVA was doing should be adhered to precisely by the electric utilities because they were institutional differences" such as tax and interest rate differentials. Despite this,

> Friends of TVA might make claims about the yard stick or the universal applicability of TVA rates which went beyond with more precise people who were technical members of the staff, such as myself, [said]. We would hedge our statements with qualification and saying 'other things being equal' and so forth,

[860] Falck, interview, 17–18.
[861] Falck, 18.

> but politicians…weren't that conservative in their speeches or their metaphors…[862]

In this presentation, it was the fiery politicians who "got the privately-owned electric utilities very furious," despite the cool-headed logic of TVA engineers, such as when Mississippi Congressman John Rankin put the difference between TVA and private rates in the *Congressional Record* and demanded that industry charge "precisely the same rate level for the same class of service as TVA…"[863] Falck also believed that TVA's 'yardstick rates' were successful partly "because that's what the newspaper people like to write about," turning "lots of publicity" on any town that received TVA power and "how it was rejuvenated."[864]

Further, TVA's *response* to private utilities' lowering electrical rates was hardly competitive. "We were very pleased," Falck said when asked how the TVA felt about surrounding utilities lowering their rates in response to TVA rates. "We felt that TVA was accomplishing its mission and we were happy to see that the Southern Company subsidiaries were following our example and putting in promotional rates….We used to use an expression that TVA was the yardstick, competition by example."[865] Likewise, Kampmeier claims that the TVA did not "promote the use of electricity in the ways that some people later assumed that we did" in order to create more business, as a private utility might have at the time. "We knew that people were going to increase their use of electricity very rapidly," he added.[866]

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[862] Falck, 8–9.
[863] Falck, 8–9.
[864] Falck, 16.
[865] Falck, 18.
[866] Kampmeier, interview, 44–45.

Chemical engineer and Chief of the Process Development Branch A. B. Phillips recalled that "the industry looked on us as competitive in the early years," and "I think for a period we certainly were…" He explained that, until 1960, TVA Chemical and Agricultural Divisions operated as manufacturers rather than "really truly trying to test the production and give the information to industry":

> We developed something, then we put it in a larger scale production, quite a few tons a year, and we would sell that to co-ops in the industry and so on to develop a market for the new material and get some experience and so on. But for a lot of years out there we were making way too much of too few things. And we were in competition with industry. They had adopted some of these things already and they were producing it and we were producing it, and we were out there and they got real mad at us, and understandably.[867]

Leland Allbaugh, Director of the Division of Agricultural Relations, claimed that he "was ready to retire" by the time of his 1961 forced retirement, in part "because of the National Fertilizer Association. I am not the kind of person to fight with that kind of an organization…"[868] Phillips speculated that the newly-combined department's post-1960 shift to a less competitive R&D focus "was very key to the survival, really, of the organization during some hard budget times and so on because then the industry would come back and supported [sic] it whereas before they would [have] pulled the rug out from under us."[869]

By contrast, Falck noted that "we did have the cooperation of manufacturers" of electrical equipment from TVA's earliest days. "…General Electric and Westinghouse

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[867] Phillips, interview, 7.
[868] Allbaugh, interview, 32; Tennessee Valley Authority, "Notes on Leland Allbaugh," 1981, Box 1, folder 4; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[869] Phillips, interview, 8.

were very much interested in exploiting, I might say exploiting in a nice way, I don't mean to use it as a term of denunciation, but being merchandise people they're interested in selling…electrical appliances," Falck explained, "Sales resistance was practically nil once TVA rates were put into effect because those appliances could be operated much more cheaply on electricity, TVA style, than accomplishing the function in any other manner."[870]

As Kampmeier explained, the TVA cooperated in turn, partly by helping its direct customers—local power distributors—on the issue of electronics "in the early years." The Agency encouraged its distributors to employ home economists "so that if people came in [with] . . . questions about electric ranges or what not they could answer them," as Kampmeier recalled. Aware that many of the small distributors were unable to staff such representatives quickly, or at all, "we tried to keep in our district offices small numbers of home economists and people who were expert in commercial use of electricity, air conditioning, this sort of thing…people who could sort of pinch-hit anywhere in the Valley where they might be called on."[871]

Meanwhile, Kampmeier explained, the TVA "tried to encourage . . . the manufacturers and distributors of different kinds of electric heating equipment . . . to compete with one another on demonstrating which was the better type of product…" This included an early "program to encourage the manufacturers to offer much less expensive refrigerators and freezers than had been on the market" and the involvement of home demonstration agents.[872]

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[870] Falck, interview, 17.
[871] Kampmeier, interview, 47–48.
[872] Kampmeier, 45–46.

As a consumer, the TVA also logically celebrated and encouraged competition in the coal, transportation, and large power equipment industries. During "a period of two or three years" in which TVA's annual coal consumption skyrocketed from 2 million to about 20 million tons, Kampmeier recounted, he headed a push for more numerous coal suppliers to bid on contracts and for the removal of middleman agents. "I got called a few hard names by some of the coal people…" Kampmeier claimed, "They thought I was too hard on them. And maybe I was. I don't know, but I was trying to insist that we were going to get competition."[873]

In the same era, Kampmeier remembered that the Material and Power Divisions "had extensive discussions…with the railroads, with the barge lines, about how it should be possible to get costs down. For instance, I spent a fair amount of time over a period of a year or so trying to persuade the L&N Railroad that they ought to go in for…unit trains…" or trains solely devoted to transportation between coal mines and power plants, which shortened turnaround time, as well as "new cars that would be larger-capacity . . . and quick-dumping…"[874] Kampmeier was so "successful" in these negotiations that the L&N Railroad offered him a position when he resigned from TVA. "I said: 'Why would you want me, I'm not a railroad man,'" Kampmeier told of his conversation with the L&N officer, "He said: 'I think you know more about how to move coal at the minimum cost than anybody else in the United States.'"[875]

[873] Kampmeier, 72–73.
[874] Kampmeier, 35–36.
[875] Kampmeier, 37.

Kampmeier also recounted interactions with large power equipment manufacturers that took place after the time period covered in this dissertation, but they followed a similar pattern of seeking out a wider range of potential suppliers and pushing former suppliers to lower their prices.[876]

5.7 TVA Recreation

TVA engineers and other employees pursued a wide range of activities for recreation. These activities generally exhibited traits of physical masculinity, as was custom: From the late twentieth century onward, men often expressed traits of physical masculinity through recreational pursuits. The mixture of pastimes, however, show a strong connection to white-collar masculinity, as well.

TVA employees organized teams for sports including softball and bowling. "In the early days we had a softball league among the different divisions of TVA," Donald Mattern recalled.[877] In the summers, teams would play after work roughly two or three nights a week at a "low depression" intown commonly referred to as the 'Rose Hole.'[878] "There were other softball leagues too," Red Wagner recalled, "and we played with them for championships."[879] Engineers like Wagner were remembered decades later for their athletic ability on the field.[880] "It was a great morale builder, really…" Wagner added, "Softball was fun."[881]

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[876] Kampmeier, 67–70.
[877] Mattern, interview, 19.
[878] Mattern, interview; Wagner, interview.
[879] Wagner, interview, 10.
[880] Mattern, interview; Winter, in Wagner, interview.
[881] Wagner, interview, 9.

Wagner claimed credit for organizing the TVA ten-pin bowling league. When he arrived in Knoxville in 1934, he recalled, "they were bowling old duckpins, little pins, you know. There was one alley on Commerce Avenue that had ten pins but nobody bowled them much." Divisions formed teams to compete, and Wagner kept record of the scores, "and I'd publish the averages every week and circulate them around the TVA," to the delight or ridicule of participants.[882] "I really got ten pin bowling started in Knoxville, I think," Wagner speculated, "because other people took it up then and now it's going great guns, of course."[883]

Poker was another pastime that encouraged bonding, and sometimes social isolation of non-players. Allbaugh remembered that it stymied his bonding with his Agricultural Relations employees after he joined TVA in 1946.[884] "A lot of my men got together at a poker party once every two or three months, and so forth," he explained, "I never played poker. I didn't intend to. I didn't participate. So I didn't get well-acquainted."[885] On the other side of the coin, Harry Case inferred that a certain administrator's poker 'buddy' expected to receive a TVA position as a result of that relationship.[886]

Employees also pursued active and outdoor pastimes like attending dances, riding horses, and getting involved in scouts, forming close friendships with those who joined in.[887] As mentioned above, Wagner recalled that he and several other early employees went

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[882] Wagner, 9.
[883] Wagner, 10.
[884] Allbaugh, interview; Tennessee Valley Authority, "Notes on Leland Allbaugh."
[885] Allbaugh, interview, 28–29.
[886] Case, interview, 15.
[887] Burbage, interview; Allbaugh, interview; Gant, interview; Mattern, interview.

out on the evenings and weekends to watch the construction of Norris Dam and the sand-making process at the dam's quarry.[888] Leland Allbaugh recalled picnicking as a pastime, including the annual picnic for Agricultural Relations employees on a farm that a Division employee owned. One employee, "from West Tennessee, knew how to handle the 'spit' better than any other person, so he always took care of the barbecuing."[889]

Some engineers and other TVA employees also enjoyed socially drinking alcohol despite a patchwork of temperance laws still in effect after the 1933 repeal of the Eighteenth Amendment.[890] Walter Emmons, a structural engineer at TVA from 1936 to 1967, recalled socializing with some TVA workmen during their house call to hook up a washing machine in his Norris, TN, home by drinking beer and talking with them. "Well, we got to talking then, so I got out some beer. We had two or three beers," he remembered, "So then about the next week I got the bill. And I guess they were there about six hours….I had to pay for all the hours when we were talking and drinking beer. Two or three men … I learned after that not to interfere with the workers."[891]

Non-engineers also made brief mentions of alcohol that suggest engineers may also have been part of a culture of 'drinking on the sly' when alcohol was banned or not readily available. TVA counsel Beverly Burbage recalled of his friend Ken Cameron, "His Dad sent him a case of whiskey about once every other month…of course, Knoxville was dry at the time, [so] that made Ken socially acceptable if nothing else did."[892] Harry Case of

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[888] Wagner, interview.
[889] Allbaugh, interview, 28.
[890] "Prohibition in Tennessee" (Knox County Public Library), accessed April 23, 2021, https://www.knoxlib.org/sites/default/files/prohibition_in_east_tn.pdf.
[891] Emmons, interview, 18.
[892] Burbage, interview, 18.

the Personnel Department and General Manager's office told of his time escorting Prince Bernhart of the Netherlands to a party when the head of state visited TVA. "The poor guy hadn't had a drink for several hours, and we were going out to this dinner in Norris and there wasn't going to be anything to drink," Case remembered, so the two of them drank out of micro-bar bottles that the prince had on hand.[893]

Accounts on the insularity of early TVA recreation were mixed. Edward Falck recalled that, before he left the Agency in 1937, TVA employees

> had very little contact with people in the community, that is, TVA people ate with each other morning, noon, and night and played with each other on weekends and there was very little, at least at that time, very little mixing between TVA people and the people in the valley and cities like Knoxville and Chattanooga and also Muscle Shoals, Alabama. It was almost like being shipboard where the only people the passengers talk to are other passengers.[894]

When Donald Mattern was asked about community involvement in the mid-1930s, however, he claimed that "the TVA people became involved in the local activities" from scouts to "the Civic Music association" to religious activities, when many TVA employees "became very staunch members…and did a lot" for local churches.[895] Mattern also noted an activity imported with TVA employees: "We, started…the TVA Players. A group of TVA people who'd been in theatrical work in other parts of the country got together and started a little organization and put on plays." TVA employees, he claimed, "got into all different things and numbers of the local people who'd been content with things just going along, you know, they weren't very happy… But over the years TVA people were absorbed

[893] Case, interview, 17.
[894] Falck, interview, 13–14.
[895] Mattern, interview, 24–25; Wagner and Allbaugh also mention commonplace church attendance. See Wagner, interview; Allbaugh, interview.

more or less."[896] Mattern, who remained at the TVA until 1970, may have been remembering activities that stretched beyond or started after the 1930's. For example, the Civic Music Association he remembered may have been the Oak Ridge Civic Music Association, founded in 1947 to support the Oak Ridge Symphony Orchestra after the 1944 formation of the latter.[897]

5.8 Conclusion

In addition to their strong association with white-collar masculinity, TVA engineers in this period performed and praised several expressions of physical masculinity. They exhibited male bodies--and generally healthy, relatively young ones at that—and several were noted as athletes. Through recreation, they often exhibited their value of physical activity and skill; the outdoors; and other interests associated with physical masculinity, like drinking alcohol. Despite this, they were often isolated from lower-class locals in their recreation. They showed a great interest in physical constructions, machines, and products as part of and beyond their jobs. TVA administrators and engineers alike showed respect for nonprofessional workers and laborers in various ways, and several shared memories of lower-class childhoods. Several expressed or recalled concern for wages, partly due to impacts of the Great Depression. They also valued practical experience, sometimes more highly than formal training or intellect.

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[896] Mattern, interview, 24–25.
[897] Meyer Silverman, "A Short History of the Oak Ridge Symphony Orchestra 1944-2004" (Oak Ridge Civic Music Association, December 2004), https://orcma.org/sites/default/files/history/HistoryofORSO.html; The Knox County Symphony was not established until 1965. See Knox County Symphony, 2021, https://www.knoxcountysymphony.org/.

TVA engineers also lauded several ‘passionate’ traits associated with physical masculinity. They occasionally celebrated ‘uncivil’ discourse and actions, like cussing and verbally combative natures. Although they rarely risked their safety on the job, engineers claimed strenuous tests of endurance through long hours of hard professional work. They showed a competitive spirit to some degree in dynamics between departments; however, the competition was most often expressed in ways that associated them with traits of white-collar masculinity. Similarly, the TVA as an institution often acted as a savvy market participant (as competitor or consumer) when interacting with private companies; however, interviewees generally underscored its underlying goals as white-collar traits. We saw many expressions of the above traits, but also the degree to which they were limited/reined-in, through examples of G.O. Wessenauer and Roland Kampmeier at the head of the Power Division.

CHAPTER 6. THE TVA AND 'MEN OF THE BORDER': FRONTIER AND MILITARY MASCULINITIES

The TVA and its engineers adopted themes of frontier masculinity from the creation of TVA onward. With the onset of WWII, association with the military and war effort gained importance to TVA engineers; however, most traits unique to military masculinity did not 'take hold' of TVA engineering culture or identity. This chapter draws primarily on 1980s oral histories of TVA engineers and a few administrators to explore the performance of traits unique to frontier masculinity and military masculinity, having discussed the traits found in common with white-collar and physical masculinities in the previous two chapters. Most of the interviewees who worked at TVA between 1933 and 1953 also had personal opinions of General Herbert Vogel that illustrate the power of the hybridity of military masculinity within their institutional identity, so the chapter ends with an example of Vogel's eventual acceptance as TVA Chairman after 1954.

6.1 Frontier Masculinity at the TVA

6.1.1 The Tennessee Valley as a Frontier

6.1.1.1 TVA depicted the Valley as a frontier

In its first decades, the TVA took part in a broad national trend of depicting the Appalachian region as a physical and cultural frontier, not least in wide-ranging efforts to settle outside authorities in the region and develop it, effectively colonizing it.[898] As Erwin

[898] Jane S. Becker, *Selling Tradition: Appalachia and the Construction of an American Folk, 1930-1940* (Chapel Hill: University of North Carolina Press, 1998); Matthew L. Downs, "Creating a 'Different

Hargrove put it, "The memory of Daniel Boone opening up the Cumberland Valley was refreshed in a new form."[899]

In a 1937 commencement address to the University of South Carolina, TVA Director David Lilienthal described the challenges and potential of the South writ large, informed by his experience with the Tennessee Valley. "We stand on the new frontier of the nation," he declared.[900] Despite the bleak status of recent income statistics and the fact that "the causes, the reasons, lie way back—long before our time" (with no mention of the national economic depression), Lilienthal pointed to the area's "almost unparalleled natural resources" as a source of optimism.[901] Through investment in soil retention, crop diversification, manufacturing, industrial research, and education, the region's spendable income would rise and the "migration of the aggressive, trained youth of the South" toward Northern and Eastern industries would be staunched.[902] "Of the total of new investment in the past few years in the processing industries of the United States," he noted, "a high proportion has been expended on plants in the South."[903] Despite this, Lilienthal witnessed

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Citizen': The Federal Development of the Tennessee Valley, 1915-1960" (University of Alabama, 2010), https://ir.ua.edu/handle/123456789/748; Nancy L. Grant, *TVA and Black Americans: Planning for the Status Quo* (Philadelphia: Temple University Press, 1990); Michael J McDonald and John Muldowny, *TVA and the Dispossessed: The Resettlement of Population in the Norris Dam Area* (Knoxville: Univ. of Tennessee Press, 1981); Dwight B. Billings, Gurney Norman, and Katherine Ledford, eds., *Confronting Appalachian Stereotypes: Back Talk from an American Region* (Lexington, KY: University Press of Kentucky, 1999); Sara Webb-Sunderhaus and Kim Donehower, eds., *Rereading Appalachia: Literacy, Place, and Cultural Resistance* (Lexington, KY: University Press of Kentucky, 2015); Erwin C Hargrove, *Prisoners of Myth: The Leadership of the Tennessee Valley Authority, 1933-1990* (Princeton University Press, 1994); Walter L. Crease, *TVA's Public Planning: The Vision, the Reality* (Knoxville, TN: University of Tennessee Press, 1990).

[899] Hargrove, *Prisoners of Myth*, 108.

[900] David E. Lilienthal, "Youth in the New South" (Commencement Address. University of South Carolina, Columbia, S.C., June 2, 1937), 1, Box 1, folder 10; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections.

[901] Lilienthal, 3, 2.

[902] Lilienthal, 12.

[903] Lilienthal, 7.

and praised an unwillingness "to achieve industrialization at any price" and "a growing skepticism in 'get industries quick' schemes," emphasizing that the best industrial development was locally beneficial and permanent.[904] He concluded, "The South is old in years and mature in culture, and yet finds itself today the new frontier of the United States. A frontier is a place for youth, for the youthful spirit of adventure, of boldness in casting out old, worn-out ideas and adopting new, of reaching eagerly into the future."[905]

To a more confidential audience, A. E. Morgan likewise emphasized the unprecedented nature of economic development in the region. At the 1934 Personnel Division conference, Morgan's opening address spent some time describing the material despair of the 6.5 million residents "in and around the Tennessee Valley Authority area."[906] He emphasized that this was always the case:

> Parts of America that once were prosperous are now hard up…but these mountain regions have had no prosperity. It isn't a matter of bringing back prosperity but a matter of creating something that never existed. Large parts of this area have no organization, industry or anything except people and raw materials and fine climate and prospect of cheap power. We have to create that structure, and I hope that while we are building our dams, power lines, etc., we can begin to train these young men to be ready to create that structure of production and prosperity.[907]

A. E. Morgan's specific vision for such prosperity, however, remained quite pastoral. His speech focused on training dam laborers to work as foresters, supplying them with small plots of land to farm, and performing research on the viability of tree crops and

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[904] Lilienthal, 8.
[905] Lilienthal, 13.
[906] A. E. Morgan, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report of the Personnel Division Conference Held at The Andrew Johnson Hotel Knoxville, Tennessee September 29-30, 1934," 1934, 9, Box 896, folder 10; Administrative Files, 1933-1957; Record of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[907] A. E. Morgan, qtd. in Tennessee Valley Authority and F. W. Reeves, 9–10.

hog farming. If the land wasn't good enough for any kind of small homestead farms, A. E. continued, the TVA could teach a man "some little industry," specifying small cooperative industries of 20 to 30 men.[908]

Floyd Thomas, a Valley native who attended college in the south and strongly identified with poor locals, declared the TVA "one of the greatest things that has happened to the Valley" and attributed that success to one specific outsider. "We should be thankful to a Midwesterner named Senator Norris…" said Thomas, describing Norris' involvement on a relevant Senate committee, "How he fought through the days of Calvin Coolidge and Herbert Hoover and finally found the man in Franklin Roosevelt who could envision what TVA could do to help develop a part of our country…"[909]

6.1.1.2 Physical frontier/primitive setting of TVA

Indeed, to a settler from another part of the U.S., the Tennessee Valley *was* very similar to a frontier in its relative material dearth and cultural isolation. When the TVA established itself there, the Valley was one of the poorest regions in the entire country. The Tennessee River had often flooded the region disastrously. "[U]nsophisticated" farming techniques were frequently used, and soil erosion to water and wind was dire.[910] A tiny portion of the Valley outside of its cities had access to electricity. [cite] The head of TVA's Health &

[908] A. E. Morgan, cited in Tennessee Valley Authority and F. W. Reeves, 12.
[909] E. Floyd Thomas, interview by Mark Winter, February 18, 1983, 35, Box 11, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[910] Grant, *TVA and Black Americans*, xxvii.

Medical Section noted in 1934 that rural health organization in the region was "in a most primitive state" with every conceivable variation in the degree of health service."[911]

Even Knoxville, the practical home of TVA headquarters, was recalled as small and poor enough in the 1930s to give the feel of a frontier town.[912] Some interviewees shared their first impressions of the place. "When we came from Denver to Knoxville it was really quite a shock," Kampmeier explained. He remembered Gay Street as "a very unpleasant looking street, about a third of the store fronts were closed out, boarded up…it just looked like a big overgrown village, and a dirty, crowded one. Coming into Knoxville we had been impressed by the number of weather beaten shacks that you . . . saw along the roads and the eroded hillsides. Although the area was one of great natural beauty…"[913] Harry Case related a story of a dirty railside hotel when his family arrived in town late at night, surmising, "We saw Knoxville from a pretty lowly point of view. There wasn't much anywhere, no matter where you went…"[914] Mattern noted "that Knoxville was just about bankrupt when TVA came in…"[915]

Ray Copson saw Knoxville more positively when he and his wife relocated there in 1933, but he didn't dispute its frontier-like, small-town feel. The couple moved into an

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[911] Eugene Bishop, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 13.
[912] TVA was legally headquartered at Muscle Shoals, AL, but its offices and most of its engineering staff and other personnel worked in Knoxville. See below.
[913] Roland A. Kampmeier, interview by Mark Winter, February 15, 1983, 9–10, Box 6, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[914] Dr. Harry L. Case, interview by Mark Winter, April 5, 1983, 2–3, Box 2, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[915] Donald H. Mattern, interview by Mark Winter, July 27, 1983, 24–25, Box 7, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

apartment that Director Lilienthal "was just vacating," having lived this apartment fit for a regular engineer while he located a house.[916] "I really liked Knoxville. It was, of course, a much smaller place then," Copson explained. He set up a lab in "a couple of rooms in the basement of the University of Tennessee…with two assistants" and worked there for two years before being transferred to Muscle Shoals, Alabama. "I could walk from the apartment to the University," part of what made the Knoxvillian experience "very pleasant."[917]

Muscle Shoals, home of TVA's chemical operations, seemed even more of a distant outpost. The town and its two neighbors, Sheffield and Florence, were sufficiently small and conjoined to be referenced almost interchangeably when discussing this northwestern corner of Alabama. While Copson set up the Knoxville lab mentioned above, chief chemical engineer Harry Curtis directed the conversion of one of Muscle Shoals' vacant chemical plants that had been constructed and operated for WWI. "And… after… less than a year that we lived in Knoxville," Copson explained, "Dr. Curtis… happened to be at my home one night, and told my wife and [me]… that he wanted us to move down to Muscle Shoals, and that he was going down and wanted us to go with him, which we did." The transfer involved some adventure, as Copson told it:

> We went around to the old Army officers' houses that had been built during World War [I] . . . which had stood vacant since then and we were told to pick out one of those houses as the one we wanted to live in. And we walked in and my wife's heel went right through the floor. The houses had been rather badly treated by termites in the meantime. We walked up into the attic and, . . . they were one-floor houses but they did have an attic, and up in the attic there were discarded

[916] Dr. Raymond L. Copson, interview by Mark Winter, September 7, 1983, 1–2, Box 2, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[917] Copson, 2–3.

> skins of snakes and there were signs all around the place: 'Snakes, Keep Out.' So it was a rather, well, primitive place for us to move into. But we did.[918]

Although Copson believed himself and Curtis the only engineers relocated from Knoxville, several engineers and other staff members had been hired directly to the Muscle Shoals operations. "So there were a number of other families living in this former Army reservation, probably half a dozen or so, not very many," Copson recalled, "That later became quite a nice village to live in and subsequently those houses were sold to the TVA people and I understand a number of them are still living there," permanently settling a previously vacated area, however small.[919] This pioneer community was "a rather close-knit group" by several accounts, in part due to its isolation.[920]

The relative isolation and lack of resources may have encouraged Copson, however, to leave. "I went down there with the idea that this was a short-time job and thought I'd be doing something else in two or three years," Copson admitted, "Instead I was there 12 years." Despite rising through multiple promotions to Chief of the Chemical Engineering Research Division in 1939, Copson resigned in 1945 to work at Rumford Chemical Company in East Providence, Rhode Island, taking along his wife and two children under 10.[921] "I think our general feeling was that it was time for us, time for me and my family –

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[918] Copson, 8–9.
[919] Copson, 9.
[920] Copson, 9–10; Travis P. Hignett, interview by Mark Winter, April 13, 1983, Box 5, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); A. B. Phillips, interview by Mark Winter, April 14, 1983, Box 9, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Harry A. Curtis, "Handwritten Autobiographical Account," 1962, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Kampmeier, interview.
[921] Tennessee Valley Authority, "Biographical Sketch [Raymond L. Copson]," 1983, Box 2, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley

– both of my children were born in Sheffield, Alabama – – I think it was my feeling that I would like to move on," he offered as his only explanation in the interview.[922]

Travis Hignett recalled his first impression of the Muscle Shoals area when he joined TVA in 1938. "As I drove down from Washington, went through Huntsville, small sleepy town, and arrived in Sheffield, another small, sleepy town, half a dozen cars [were] parked down on court street [in Florence] on a business day; [few people were] . . . in the stores anywhere . . ." he said, "Nobody had much money to spare, I guess."[923]

The physical conditions of Knoxville and Muscle Shoals, then, both supported the image of the TVA and its engineers settling a relatively primitive area; however, they differed in degree: Muscle Shoals was in many ways *too* primitive for the central offices of TVA for at least the first two decades of its operation. This is illustrated in recollections of a debate in the early 1950s over TVA's potential relocation to Muscle Shoals. According to the original TVA Act, the town had always technically been TVA headquarters. According to Beverly Burbage, TVA legal counsel and assistant secretary to the Board, "It had been TVA's position that that was a legal technicality, that while they were legally domiciled down there that it was an administrative decision where they chose to hang their hats," and that was Knoxville.[924] By 1951,[925] TVA Chairman Gordon Clapp had begun to

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Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Copson, interview.

[922] Copson, interview, 20.

[923] Bracketed text is found in the original transcript approved by Hignett. Hignett, interview, 22.

[924] Beverly Burbage, interview by Mark Winter, September 15, 1983, 28, Box 1, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[925] George F. Gant, interview by Mark Winter, September 7, 1983, 31, Box 4, folder 4; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

pursue "some very quiet negotiations" on the possibility of moving TVA headquarters to Muscle Shoals.[926] Clapp announced plans at a spring 1953 Board meeting to immediate criticism from the TVA's top staff downward. To support the idea, Clapp pointed to the language of the TVA Act as well as the fact that Muscle Shoals was closer to the center of the Tennessee Valley.

The main drawbacks that Burbage recalled: the relative dearth of infrastructural and organizational facilities in Muscle Shoals, and the settled status of employees at Knoxville. In Knoxville, he explained,

> They had office facilities, their engineering staff was here, personnel, and numerous others. They had at that time good working agreements with the University of Tennessee, they had good transportation facilities from here, particularly by air, and Muscle Shoals had almost no air service. It seemed to a lot of us to lack other necessary elements…Besides the mechanical features would have been more difficult to operate from down there and the personal factor that…Knoxville had come to be home for TVA's top staff and they were talking about 500 people. You had a major university there [in Knoxville], you had a little teacher's college in Florence.[927]

George Gant, TVA General Manager until his 1951 resignation, recalled that at that point the plan was only to move TVA Board and General Manager offices to Muscle Shoals, and that the "move was quashed by the refusal of the Budget Office or the White House to support any proposals to Congress along these lines."[928] No move occurred until 1960, when Agricultural Relations moved to Muscle Shoals to combine with Chemical Engineering.[929]

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[926] Burbage, interview, 29.
[927] Burbage, 28, 32.
[928] Gant, interview, 31.
[929] Aubrey J. Wagner, interview by Mark Winter, June 27, 1983, Box 12, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record

6.1.1.3 Cultural frontier setting

The Tennessee Valley was imagined as a frontier not only in material terms but in cultural terms, as well. The poor white farmers that made up a majority of the local population were frequently described by visitors from other regions and countries in negative terms that emphasized their poverty and primitive habits.[930] This image, Nancy grant writes, "influenced the relationship between TVA planners and whites living in the mountainous regions of eastern Tennessee… Most blacks who lived in the Tennessee valley experienced the double edge of racism and poverty."[931]

Local 'clannishness' supported this feeling of cultural isolation in the early years of the Agency. Allbaugh, the head of the Agricultural Relations Division, recalled having "difficulty getting acquainted" with others during his time in Knoxville. "It was partly my fault, but it was also part of the attitude among the native people that has changed tremendously now," he mused in 1981.[932] "People thought we were a bunch of foreigners and they didn't like foreigners coming in," Wagner explained.[933] Burbage, who hailed from Tennessee, similarly noted, "Knoxville was pretty clannish and they just didn't open up and accept these people, especially a lot of them from the North, with open arms."[934]

Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Phillips, interview.

[930] Grant, *TVA and Black Americans*.

[931] Grant, xxvii–xxix.

[932] Dr. Leland G. Allbaugh, interview by Mark Winter, September 15, 1981, 27–28, Box 1, folder 4; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[933] Wagner, interview, 10.

[934] Burbage, interview, 32.

Several interviewees admitted that TVA employees "made some of their own problems," as Burbage put it.[935] "They criticized the lack of this and lack of that here that they may have been used to in New York or Chicago or Boston, Philadelphia," he said.[936] "A number of them were from the North," Copson said, "and they made remarks such as about the natives going around barefoot and things like that which were not accepted very well by the local people."[937] By contrast, Copson and his wife made local friends despite being Massachusettsans, "But, of course, I met a number of the University people. My fraternity had a chapter at the University."[938] Mattern, however, identified the University of Tennessee as a source of the resentment. Noting that Knoxvillians "didn't like" the influx of outsiders, he added, "and here particularly in Knoxville the University people didn't like it. They'd been, as it were, cock of the walk and everything, all knowing, until these TVA people came in, intellectuals and so on, and they didn't like it too much… numbers of the local people who'd been content with things just going along, you know, they weren't very happy."[939] The rift between TVA employees and natives was significant enough "[n]ot only with respect to Knoxville but also with respect to Chattanooga and the Shoals area," Gant recalled, that "it was our [TVA] policy to encourage our TVA personnel to associate themselves with the communities and not to form a separate conclave of TVA people by themselves."[940]

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[935] Burbage, 32; Edward Falck, interview by Mark Winter, May 5, 1983, Box 4, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Copson, interview; Mattern, interview.
[936] Burbage, interview, 32–33.
[937] Copson, interview, 3.
[938] Copson, 3.
[939] Mattern, interview, 24.
[940] Gant, interview, 3.

"Do you think they were generally successful in doing that?" the interviewer asked.[941]

"In the long run they were," Gant replied, "In Chattanooga more rapidly, I think, than in Knoxville."[942]

The educational gap between Valley natives and TVA employees created a further barrier between them, not least by thinning native upward mobility within the Agency. "I suppose you have observed that a lot of the people who achieved high status in TVA were not native Valley people," Case said.[943] The exception that he offered was the Agency's Health Department, headed through at least 1953 by Valley natives who made a point of remaining in Tennessee and recruiting and keeping native staff.[944] Eugene Bishop, department head through 1951, "got them from the Valley and kept them here," Case said of Bishop's staff, "He would make life so difficult for them that if they even thought about going anywhere else they just couldn't face him. He'd just glare them down. He stayed himself and made these other people stay whether they liked it or not." Case then implied--as we saw Lilienthal reference above--that well-educated Valley natives tended to move elsewhere.[945]

6.1.1.4 TVA and Grassroots Democracy

[941] Winter, qtd. in Gant, 3.
[942] Gant, 3.
[943] Case, interview, 41.
[944] "Eugene Lindsay Bishop 1886-1951," *American Journal of Public Health*, April 1951, 450; O. M. Derryberry, "Health Conservation Activities of TVA," *Public Health Reports (1896-1970)* 68, no. 3 (1953): 327–33; Case, interview.
[945] Case, interview, 42–43.

TVA culture was dedicated to independence, a major theme of frontier masculinity, in various ways. One clearly visible example was in its concept of 'grassroots democracy,' an effort on the part of these outsider experts to support natives' self-determination over and responsibility for certain parts of TVA programs through cooperation with local governments and residents.[946] Erwin Hargrove observes that this 'myth' also helpfully supported TVA's independence from interference from Washington, D. C., and others; however, "TVA leaders believed in what they were doing."[947]

"There are certain things that people can do themselves. TVA gives a general direction to the thing, that's all," Red Wagner explained in 1983,

> What we're here for, I think, is to help the people improve the quality of their lives. When we build a power plant…dams and reservoirs, or navigation channels…the object is to give people tools that they can use to apply their own resources and build a better living for themselves and for their children. And as long as they are making progress in that direction I think things are going well.[948]

This ideology was present from the earliest days of TVA onward, and cast as the antithesis of dependence, as we see in one TVA official's explanation during the 1934 Personnel Division conference:

> It was inevitable that a project like the TVA which runs counter to so many currents in American life had to be conceived and projected on a paternalistic basis, otherwise it would not have been projected at all. The people of the Valley had little to say about the broad outlines of the plan. The test of the real success of the project will be, 'How truly can this project become the people's own? Can they be led to an understanding of a sense of responsibility for and a capacity to take over the operation of certain areas of the TVA program'. [sic] To simply do for people creates a dependent group. The more dire the need, the more grateful

[946] Hargrove, *Prisoners of Myth*.
[947] Hargrove, 109.
[948] Wagner, interview, 15.

> recipients of favors will be, and the more dependent they become upon the continuance of favors.[949]

The tension between paternalist sentiment and dedication to local independence, between trust in learned experts and respect for local hegemony, was adopted as a point of conflict on the Agency's original Board of Directors. The pro-'grassroots' camp, led by Lilienthal and H. A. Morgan, spoke of A. E. Morgan's vision of the TVA as an oppressive Federal "outside agency" in contrast to the wisdom of cooperating with existing local organizations. Despite this negative presentation, A. E.'s overall approach was not very different from grassroots democracy in action. As Hargrove writes, "Lilienthal's paean to grassroots democracy praised the high amount of professional cross-fertilization and dialogue throughout the TVA organization, and much of that spirit could be attributed to A. E. Morgan."[950]

With whom the TVA was in dialogue, however, was a point of disagreement. H. A. and Lilienthal skewed to the pastoral, easily supporting a frontier image, while A. E. skewed to academia and industry. While H. A. Morgan planned to work with land-grant agricultural colleges and the county agent system to develop a program of technical assistance for farmers, supporting traditional regional structures, A. E. sought "more creative conduits such as the Peabody College for Teachers in Nashville."[951] On issues of electrification, A. E. Morgan hoped to cooperate with local private utilities—arguably in keeping with a locally-oriented, grassroots spirit—but Lilienthal pushed back on that fervently.[952] Once A. E. Morgan was ousted in 1938, the TVA clearly moved toward the

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[949] Mr. Schultz, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 20.
[950] Hargrove, *Prisoners of Myth*, 32.
[951] Hargrove, 32–33.
[952] Hargrove, 40.

collaborations sought by the other two directors. "And irony of ironies," Hargrove write, "Lilienthal was to appropriate A. E. Morgan's utopian cast of language in his own celebration of TVA as an example of democracy at the grass roots."[953]

Scholars have criticized TVA's grassroots approach for supporting and propagating the race and class bias already systematized in Valley society and institutions.[954] Such criticism highlights the strong appeal of frontier masculinity, as TVA administrators associated with and fulfilled the wishes of the white landowning farmer, defining him as the deserving beneficiary of TVA assistance.

It is also worth noting that some employees were well aware that the grassroots approach was a myth. Harry Case offered criticism of Selznick's often-cited 1949 book *TVA and the Grass Roots: A Study of Politics and Organization* as evidence of his claim (discussed in chapter 5) that theorists "didn't make out all that well" at TVA. "Selznick came to TVA as a young graduate student. He had a theory about what TVA was supposed to be according to him and he found out it didn't seem to be that," Case explained, "So he wrote his book about grassroots, which was mostly nonsense, in my opinion. And yet, it is still quoted by scholars more than any other book about TVA written by people who know something about it …Selznick had definitely a cock-eyed view of TVA in my humble opinion."[955]

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[953] Hargrove, 41.
[954] Grant, *TVA and Black Americans*; Hargrove, *Prisoners of Myth*; Erwin C Hargrove and Paul Keith Conkin, eds., *TVA: Fifty Years of Grass-Roots Bureaucracy* (Urbana and Chicago: University of Chicago Press, 1983).
[955] Case, interview, 20.

Electrical rates engineer Edward Falck also found fault with the TVA's early claim that, in contrast to large private corporations, "we were decentralizing authority and policy-making and getting at the grass roots level and letting the people decide their own fate and take responsibility for their own affairs." He hedged on the claim in a logical manner. "In a way we did that and in a way we didn't," he mused,

> Naturally the electrical distribution system in each city is run by the people of that city but only within the framework which we established. So we were partly imposing centralized governmental policy-making in a broad sense but we were permitting detailed day-to-day operations to be handled at the local level without any interference with the TVA top staff. It was kind of a mixture of centralized and decentralized responsibility.[956]

6.1.1.5 Relating to Local White Farmers

An important part of TVA exhibition of frontier masculinity was through collaboration and association with white male farmers.[957] This included personal identification with farmers as well as working to benefit farmers and their beliefs. Red Wagner, for example, recalled finding it very motivating "to get electricity to the farms" because "I grew up on a farm without electricity and I knew what it was like to be without it."[958] He elaborated on the benefits of electrical refrigeration by describing the difficulty of keeping milk without it and the improved "quality of life" with frozen food; and he noted that electricity allowed farms running water and, thus, sanitation.[959]

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[956] Falck, interview, 17–18.
[957] "TVA Project Called of Little Benefit to Negroes," Press release (The National Association for the Advancement of Colored People, September 16, 1935), Folder 001418-019-0424: January 1935-December 1935; Group I, Series C, Administrative File: Subject File--Tennessee Valley Authority; Papers of the NAACP, Part 10: Peonage, Labor, and the New Deal, 1913-1939, Library of Congress, https://congressional.proquest.com/histvault?q=001418-019-0424&accountid=11107.
[958] Wagner, interview, 15.
[959] Wagner, 16.

Chemical engineer Travis Hignett likewise recalled, "I grew up among farmers and my father was a minister in a small town church and I worked on a farm during vacations." This, however, contributed to mixed feelings about the changes he helped bring to agriculture through the TVA. "It is with some regret that I can see the farm is no longer a way of life so much as a business enterprise," he said. In his childhood experience, "Most farmers raised almost everything they needed, enough food, [and a few] . . . cows to supply dairy products. Now the farmer's wife goes into town and buys all those things and the farmer himself is producing only one or two things."[960] His wistfulness was for the small independent farmer of frontier masculinity.

The farm woman was also occasionally invoked as beneficiary of the TVA's work, in ways that showed speakers relating to them as if they were male members of the women's family (and thus white farmers themselves). In Wagner's explanation of the benefits of electricity, he pointed to the autobiography of Senator George Norris who spearheaded the organization of the TVA. According to Wagner, Norris "was concerned that farm women died at the average age of 37 or something like that…because he concluded they didn't have electricity and the women in the city did. He'd seen his own mother work herself literally to death over scrub boards washing clothes, by hand…"[961] Leland Allbaugh of the Agricultural Relations Division noted the value of "what [farm] women were thinking" on various issues. "After all, in many of the families it is the women who really makes the final decision," he explained, "Particularly whether the income is used to buy fertilizer or whether it goes into some home convenience. It all led to a better

[960] Bracketed text in the original transcription, approved by Hignett. Hignett, interview, 23.
[961] Wagner, interview, 15.

mutual understanding of the relative importance of home and farm problems and possible solutions."

The Chemical Engineering Department was the site in which engineering work was most directly geared towards farmers. Copson recalls that, from the start, this department debated Congress on the most beneficial fertilizers to produce. "I'm sure that the thought that Congress had was that the nitrate plant at Muscle Shoals would be put into operation…used to make nitrate fertilizer for cotton farmers," Copson explained.[962] H. A. Morgan and Chief Chemical Engineer Harry Curtis, however, believed "that that was not what TVA should do. I know Dr. Morgan felt very strongly that the …cotton farming land of that area had been largely destroyed through the use of excessive amounts of nitrate fertilizer. And he thought that the last thing they needed was more cheap nitrates…" Curtis converted a cyanamide process plant at Muscle Shoals to produce elemental phosphorus for phosphate fertilizers, "and that decision was questioned by Congress…They were interested in finding out why we weren't doing what they originally had in mind." Copson was involved in the successful process of convincing the concerned Congressional committee to support their efforts. He presents the account in a way that sets TVA engineers and administrators, with valuable familiarity of the needs of local farmers, against distant and ignorant Washington politicians; however, the TVA straddled this identity with that of the expert, educating farmers on what's best for them. Copson explained this role as well:

> Of course, that all had to be coordinated with the agricultural programs to educate farmers in the use of phosphates and other ways of agriculture, that is, using mineral fertilizers to grow legumes and crops that would themselves fix nitrogen.

[962] Copson, interview, 4.

> The TVA set up a whole educational program to teach a really new system of agriculture to that whole region of people. The phosphate fertilizer was used as the key to get the farmers interested and to get them to cooperate in the program…if we had just done what the original intent was it would not have amounted to the thing it did, which was a complete revamping of the whole agricultural activity of that region. Tied into that, of course, was the further idea of growing cattle and livestock and food crops. Many of the cotton farms when I first went down there, the sharecroppers used every bit of land to grow cotton and didn't even have a vegetable garden to feed themselves.[963]

Chemical Engineering focused on munitions production during World War II; by the time it returned to fertilizer production postwar, this push for phosphatic fertilizers and against nitrogen had become a problematic prejudice. John McAmis, head of the Agricultural Relations Division through 1951, "didn't like nitrogen," as Travis Hignett explained, "He thought nitrogen had no place in agriculture of the United States. It was degrading. It promoted sharecropping, rowcropping, which promoted erosion and should be completely eliminated."[964] Hignett, head of development within the Chemical Division, realized that out of the three main elements needed for agriculture (phosphorus, nitrogen, and potassium), only phosphorus was deficient in most soils and not organically produced (as nitrogen is by growing legumes). On the other hand, he pointed out that most farmers, especially those in developing areas, "use…more nitrogen than any other kind of fertilizer…" and for justifiable reason: "[the effects of] nitrogen fertilizer [is] . . . immediately obvious to the farmer…He can see that the crop is growing faster and is more healthy."[965] Additionally, "Nitrogen [fertilizer] at that time was prohibitively expensive."[966] Under Hignett's direction, the department developed useful and cost-effective processes for both elements, but Hignett "used to have a lot of arguments with

[963] Copson, 4.
[964] Hignett, interview, 14.
[965] Bracketed text in the original transcript, approved by Hignett. Hignett, 14.
[966] Bracketed text in the original transcript, approved by Hignett. Hignett, 7.

McAmis" throughout.[967] A. B. Phillips, who joined the TVA in 1942 and worked in the Process Development Branch of the Chemical Division, came to believe that—despite fertilizer projects in the Agency's first decade—the fertilizer program "as we know it now… projects that [were] responsive to the needs of farmers" began in the late 1940s and early 1950s.[968]

Comments by non-engineers support this perspective that John McAmis and his Agricultural Relations Division limited chemical engineers' efforts to provide farmers what they wanted. McAmis' successor, Leland Allbaugh, believed "the continued overemphasis on phosphates versus nitrogen in the fertilizer program during the 1940s" problematic. "It was so ingrained in our program that I did not get it changed either," he added.[969] Likewise, "McAmis was just so dead set against nitrates" that the division failed to help farmer cooperatives purchase federal ammonia nitrate plants during WWII disarmament. "Consequently, private firms bought all those up…" he recalled, "It would have been a real toehold for the co-ops to get all of those plants to produce nitrate fertilizers and reduce prices."[970]

Each side in the debate appears to have respected the ideal of the small farmer, believed themselves the champion of such a man, and believed the other side to be the myopic 'expert.' We see McAmis' mindset in a rather peculiar example when George Gant discussed the scarce record-keeping of the latter. "McAmis just hated to have comparative records kept with respect to the results from the application of phosphatic fertilizers," Gant

[967] Hignett, 14.
[968] Phillips, interview, 5.
[969] Allbaugh, interview, 30.
[970] Allbaugh, 29–30.

mentioned, "which most of the rest of us and also the US bureau of the budget felt were important…" When the interviewer expressed surprise at this, Gant replied,

> It goes very deep in his concept of the application of Government and the TVA to the farmers in the Tennessee Valley. I'm not sure I can express his argument fully but he didn't want to be contained by or limited to some statistical measures of results….by inclination anti-Government, anti-establishment, anti-big business. You know, he was for the small farmer and the Tennessee Valley.[971]

Red Wagner was promoted to Assistant General Manager the year that McAmis left the Agency. "John [Oliver] said he would give me responsibility for all fields except agriculture," Wagner recalled, "He said that was such a mess he wouldn't ask anybody to fool with that."[972]

6.1.2 Intellectual Frontiers

Those without a physical frontier or the means to play the role of a physical explorer (through occupation or pastime) may nonetheless perform frontier masculinity by working at intellectual frontiers, often through research. TVA and its employees did this in several ways during its first two decades.

TVA as an institution was, in many ways, a "first." It was the first hybrid public-private corporation in the U.S., far more autonomous than any American government corporation to date.[973] It was the first to receive such a broad mandate to develop physical, economic, and social resources of a region. As such, it faced several challenges to the

[971] Gant, interview, 38.
[972] Wagner, interview, 10–11.
[973] Richard Lowitt, "The TVA, 1933-45," in *TVA: Fifty Years of Grass-Roots Bureaucracy*, ed. Erwin C Hargrove and Paul Keith Conkin (Urbana and Chicago: University of Chicago Press, 1983), 35.

constitutionality of its various programs.[974] The conflict on the original Board resulted partly from the breadth of possibility available to it: as nothing of this kind had been done before, its potential permutations seemed limitless.[975] This was not lost on private utilities and other critics of the potential threat of such an institution. At the 1934 Personnel Division Conference, a Mr. Beckman of the Employment Section noted how this impacted his work, which appears to have been as a headhunter and interviewer for professional positions. "I feel that part of my job is not only to call on people but to hurriedly give a little different picture of the TVA than they have," he explained to attendees, "so that they will feel that it is not a dangerous but an essential and necessary experiment, something that we as a nation cannot be without."[976] The nature of the experiment could be debated, but that it was an experiment could not.

The unique status of the Agency allowed for the creativity to push intellectual frontiers at the individual level, as well. Phillips noted the degree of freedom afforded to chemical research and development (R&D). "As you went up in the hierarchy, you sort of had more opportunities for that," Phillips replied when asked about creativity, "But even down at shift engineer running a pilot plant…the people down there had a lot of opportunity to do it their way, try it their way, and so on. And generally that's the kind of atmosphere that we tried to maintain out there…we tried to give the researchers just as much freedom as possible." He noted the importance of such freedom. "Research is like that, you know. Every door you open, there are a bunch of other doors you can, there to open. And it's

[974] Lowitt, 36.
[975] Hargrove and Conkin, *TVA: Fifty Years*.
[976] Mr. Beckman, qtd. in Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report," 42.

important to give people freedom to do that," he said.[977] He contrasted this with private industry, noting, "It wasn't all concentrated on, you know, making a buck for the stockholders. You had some creativity of exploring out into things and so on…"[978]

As a result of this relative freedom, the chemical department pushed several frontiers. Copson noted that, in developing phosphorus fertilizer production processes on such a large scale from 1933 onward,[979] "we were starting in a brand new field there as far as chemical engineering was concerned…In a new field like that, it was possible for a chemical engineer to do a lot of new things, make a lot of new inventions."[980] Hignett recalled that certain fertilizers that they produced, "like fused tricalcium phosphate…which was something quite different from anything the farmers have ever used or the industry has ever made." He was critical of this by the time he rose to the head of the Applied Research Branch after WWII, believing instead "that we ought to take what industry was working on and see where it could be improved to the point where it would be cheap enough for farmers to use widely…And to develop processes that small fertilizer plants could use…"[981] His dedication to 'micro inventions' pushed frontiers in its own way: Hignett could boast 16 patents and over 100 publications by the time of his 1983 interview.[982] The department not only invented and developed processes for new fertilizers; it innovated and invented in other ways. Phillips considered their work on the "granulation of fertilizers

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[977] Phillips, interview, 10.
[978] Phillips, 10–11.
[979] D. A. Williams to Hon. Edward J. Thye, June 4, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Copson, interview.
[980] Copson, interview, 22.
[981] Hignett, interview, 17–18.
[982] "Travis P. Hignett: Publications and Patents--As of March 1973," n.d., Box 5, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Hignett, interview.

before the early '50s" to be "one of the big breakthroughs that really gave our organization the credibility it enjoyed later." He explained that, before their continuous ammoniator, "All the farmers used this pulverized fertilizer" that caked badly and contained relatively "low plant food content."[983] He also noted their process to make molasses for cattle feed from wood waste, which became economically infeasible, and research on "methods of pollution control from coal-fired steam plants" in the late 1940s or early 1950s.[984]

The TVA Power Division also broke many records during its first two decades. Its hydroelectric dams broke records for size, output, and speed of construction.[985] Mattern boasted in his interview that Douglas Dam "was built in a record 13 months. I wouldn't be surprised if it still is a record for a major project being built."[986] A major drought in 1939-1941 that threatened the regional hydraulic power supply, Kampmeier explained, inspired the TVA to innovate guidelines for the operation of reservoirs. It used studies of at least 40 years of streamflow to determine the most economical operation of a hydraulic power system at various streamflow levels. "This study of developing the economy rule curves was an illustration of the fact that we had to do some pioneering work in analyzing our situation…" Kampmeier emphasized.[987]

The division also innovated features of its electric rate schedule and contracts. Falck recalled that he "received an enormous amount of mail from electric rate people all over the United States wanting to know what the rationale was for certain little features of the

[983] Phillips, interview, 6–7.
[984] Phillips, 6.
[985] Hargrove and Conkin, *TVA: Fifty Years*; Kampmeier, interview.
[986] Mattern, interview, 10–11.
[987] Kampmeier, interview, 24–25.

TVA rate schedule, two of which I personally invented."[988] He later admitted how much this meant to him. "I'd never dreamed I'd have as much authority or flexibility or freedom to invent new ways of doing things and get them quickly accepted by people in higher authority," Falck said, "I wept many tears because of the separation from TVA" when he resigned.[989] Kampmeier claimed, "We were doing a certain amount of pioneering in our power contracts as well as in some of our other work," and he credited the Division of Law for "finding out how something could be done rather than just telling you that you couldn't do it or why you shouldn't do it…"[990]

As an individual, Kampmeier saw himself working at TVA's frontier in his leadership positions. "You might say that my role frequently over quite a period of years was in sort of tackling the special new and major problems that were on the horizon, that we weren't organized to deal with in a routine sort of way," he explained, "This was particularly true of the years when I was Assistant Manager of Power….my main work was really to try to spot and start dealing with the major changes that were coming along…" He pointed to the Agency's transition from mainly hydro to mainly steam power production; its correlated coal requirements; and "new arrangements for financing our power growth" in the 1950s.[991] Mixing subtle metaphors of fighter, athlete, and explorer scanning the horizon, Kampmeier claimed,

> [I considered it part] of my job to make sure that we weren't caught too flat-footed on some of those things, that we were anticipating them and started getting ready for them . . . . I either carried the ball on them myself as long as necessary or tried to help find the people that we could assign those jobs to, to take them

[988] Falck, interview, 18.
[989] Falck, 26.
[990] Kampmeier, interview, 42–43.
[991] Kampmeier, 38–39; Hargrove and Conkin, *TVA: Fifty Years*.

> over and carry them on. So that made a very interesting, challenging sort of life.[992]

6.1.2.1 Encouraging Individual Self-Direction

Several interviewed engineers valued self-direction highly and sought to encourage it when they rose to manage others.[993] Thomas noted at one point, "I think the TVA gave better recognition to individuals in general…"[994] As design engineer Walter Emmons put it, "I guess I would say my greatest achievement was that I got to do basically what I wanted to do" while at TVA.[995] In this dedication to self-direction, they expressed some disappointment in those who functioned otherwise, denying leeway to subordinates or wanting more supervision than the interviewees wished to give.

As we saw above, A. B. Phillips linked researchers' freedom to their success in pushing boundaries and tried to give them as much freedom as possible. He returned to this when asked directly about his leadership or management philosophy. "Well, sort of informal and relaxed…we'd try to create an atmosphere in which they could be creative and give them as much latitude as we possibly could to work toward that end," he continued, "We sort of tried to keep hands off as long as things were going up. We never tried to dictate the research that was going on out there or get involved in the details of it even though…[we] had technical backgrounds."[996] Phillips provided more negative

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[992] Bracketed text in the original transcript, approved by Kampmeier. Ellipses in the original, denoting a false start. Kampmeier, interview, 39.
[993] Falck, interview; Thomas, interview, February 18, 1983; Walter F. Emmons, interview by Mark Winter, September 8, 1983, Box 3, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Kampmeier, interview; Wagner, interview; Phillips, interview; Hignett, interview.
[994] Thomas, interview, February 18, 1983, 9.
[995] Emmons, interview, 48.
[996] Phillips, interview, 29.

examples on what he *didn't* like to see in managers or researchers. On "The chain of command…in some cases you might have one person someplace down there that was more authoritative and so on. And then the people below him might not have quite the opportunities as in some other cases because individuals are different," Phillips explained. As for those researchers who *were* granted independence, "Maybe some people aren't willing to take it. You find that in some individuals, that they want to be told what to do rather than seek out what to do. So perhaps some didn't take the right, take advantage of the opportunity that they had in that direction."[997]

Hignett, also in the Chemical Division, held similar impressions of his management and the response to it, valuing independence and setting it in opposition to cooperation:

> I encourage people to have their own ideas and when I became a supervisor I had an idea that most people . . . would prefer to work on something they thought up themselves. And I found that most research people wanted to be told what to do. That rather surprised me. At least 80 percent of them prefer to be told what to do, not how to do it, but what project to work on and why it should be worked on and to some extent how to go about it. Of course, a good many of them have their own ideas about how to go about it and that was quite all right with me, but I was really surprised at the cooperative attitude of the people under my direction, supervision.[998]

In Power, engineers recalled with gratitude the self-direction they were offered as they worked their way up. Kampmeier recollected a scene that shows his assertive personality, discussed in chapter 5, was encouraged from the start:

> … I'm sure I must've been encouraged to take considerable . . . initiative because I always felt that I was free to do so. I mentioned having had an argument with one of the top engineers, Barton Jones, about the generating capacity of Norris Dam. Well, here I was a few months out of school, and green in the job, I didn't have any claim to being able to speak with any authority on the subject but I had

[997] Phillips, 30.
[998] Hignett, interview, 9–10.

> made some studies and it seem to me that some possibilities were being overlooked and I undertook to say so and I was encouraged to do so. I was invited to have a discussion even though it meant that Barton Jones had to work late that night after doing his days work in order to be able to hear me out. So I think that was fairly typical. . . . I think we all were encouraged to speak up, to take the initiative.[999]

Wagner, who started as a TVA engineering aide in 1934, believed that the relative "freedom to operate" he witnessed generally in the TVA decreased with time.[1000] "As a young engineer just out of school," he recalled, "I got an opportunity to look into things a fellow wouldn't get now in a thousand years, I guess."[1001] He remembered his first task, "to estimate the cost of Pickwick Lock which was to be built," despite having "never seen a lock." With the guidance on his first boss, Wagner completed the estimate successfully and moved on to "looking into the possibility of building a dam which ultimately became Kentucky and Barkley dams," with very scattered data and no maps of the area.[1002]

6.1.2.2 TVA Engineers and Entrepreneurship

A theme of entrepreneurship and its associated dedication to one's independence as his own boss arose occasionally, despite the fact that all engineers in question worked for this large Agency, often for protracted time periods. Some engineers were entrepreneurs before joining TVA, as we saw in Walter Emmons with his Depression-era construction company.[1003] Others, like F. A. W. "Bill" Davis, an assistant mining engineer in TVA's Minerals Testing Laboratory, tried their hands at entrepreneurship while still at TVA.[1004]

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[999] Kampmeier, interview, 11.
[1000] Wagner, interview, 7.
[1001] Wagner, 4.
[1002] Wagner, 2.
[1003] Emmons, interview.
[1004] Frederick A. W. Davis and E. C. Houston, "A Study of the Possibilities of Descrepitation in the Benefication of Low Grade Barite of the Tennessee Valley and the Vicinity" (Norris, Tennessee: Tennessee

Davis' personal records and correspondence indicate that Bill (known as Billy to his family) worked at TVA during the years 1936-39 at least,[1005] and that he sought to follow in his father's footsteps as an entrepreneur and small business leader and to improve his lot in life, which had likely been battered during the Depression. Most of the details of Bill's life come from the letters his father addressed to him through their regular correspondence. Bill was likely raised in the middle-class[1006] in the 1900s and 1910s.[1007] His father, Lewis K. Davis, was an engineer mainly involved in tool design and manufacturing. Lewis had invented a "Gun Powder Press" by 1932 that was demonstrated with promising results at the Remington Arms Company plant in Connecticut.[1008] He worked his way up at Impact Tools, Inc. of New York City, from Consulting Engineer in 1932 to president by July 1938.[1009] Impact Tools appears to have mainly manufactured

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Valley Authority Materials Testing Laboratory, July 26, 1937), Box 1, folder 4; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections.

[1005] Porter Warner to F. A. W. Davis, June 19, 1936, Box 1, folder 33; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; Davis and Houston, "A Study of the Possibilities of Descrepitation in the Benefication of Low Grade Barite of the Tennessee Valley and the Vicinity"; Lewis K. Davis to Mr. F. A. W. Davis, February 5, 1939, Box 1, folder 30; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections.

[1006] Lewis K. Davis to Mr. F. A. W. Davis, July 19, 1938, Box 1, folder 30; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; F. A. W. Davis, "A Study of the Recent Development in Passenger Terminal Design: A Thesis" (n.d.), University of Tennessee Libraries, Knoxville, Special Collections (Box 1, folder 2; F. A. W. Davis Civil Engineering Papers, MS.2829.).

[1007] Davis was likely of-age and stationed at Camp Wadsworth, in Spartanburg, South Carolina in 1918. His personal papers contain several newsletters associated with the 27th New York Division for Camp Wadsworth during this time. See Box 1, folder 3; F. A. W. Davis Civil Engineering Papers, MS.2829, University of Tennessee Libraries, Knoxville, Special Collections.

[1008] McIntire Connector Company to Mr. Lewis K. Davis, January 11, 1932, Box 1, folder 31; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections.

[1009] "Impact Tools, Inc. Letterhead for Lewis K. Davis," n.d., Box 1, folder 29; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; McIntire Connector Company to Davis, January 11, 1932; Aluminum Company of America to Mr. Lewis K. Davis, November 28, 1933, Box 1, folder 29; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; Lewis K. Davis to Mr. F. A. W. Davis, January 3, 1938, Box 1, folder 30; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; Lewis K. Davis to Davis, July 19, 1938.

metal components for electrical systems,[1010] and the small business struggled at least occasionally.[1011] Lewis put in long hours and took pride in his leadership despite difficulty maintaining staff and a budget.[1012] At the same time, he showed an ambitious inventive streak that verged on the fanciful, suggesting that his son research materials that Lewis' company might mine itself or two metallurgical processes "done by the Persians and the art was lost," adding, "I thought if you could rediscover it and keep it secret, we might make both our fortunes."[1013]

Bill Davis was a pioneer and resource for his family in moving to Tennessee. He fielded requests from his father to be his 'eyes and ears' as Lewis attempted to break into the state's electrical parts business,[1014] and he was a point-of-contact for a troublesome young relative who moved there seeking work.[1015] Although Lewis scolded Bill to "stop babying" the latter,[1016] he requested and received plenty of help from Bill himself. Lewis mailed parts for Bill to test or further develop in the TVA lab[1017] and fielded business advice from Bill while discussing details of Impact Tools' operations in depth.[1018]

[1010] Lewis K. Davis to Mr. F. A. W. Davis, May 5, 1938, Box 1, folder 30; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; McIntire Connector Company to Davis, January 11, 1932.
[1011] Lewis K. Davis to Mr. F. A. W. Davis, January 26, 1938, Box 1, folder 30; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; Lewis K. Davis to Davis, May 5, 1938; Lewis K. Davis to Davis, July 19, 1938.
[1012] Lewis K. Davis to Davis, July 19, 1938; Lewis K. Davis to Mr. F. A. W. Davis, September 17, 1938, Box 1, folder 30; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; Lewis K. Davis to Davis, July 19, 1938; Lewis K. Davis to Davis, May 5, 1938; Lewis K. Davis to Davis, January 26, 1938.
[1013] Lewis K. Davis to Davis, January 26, 1938; Lewis K. Davis to Davis, May 5, 1938.
[1014] Lewis K. Davis to Davis, January 3, 1938; Lewis K. Davis to Davis, February 5, 1939.
[1015] Lewis K. Davis to Davis, July 19, 1938; Lewis K. Davis to Davis, February 5, 1939.
[1016] Lewis K. Davis to Davis, January 3, 1938.
[1017] Lewis K. Davis to Davis, September 17, 1938; Lewis K. Davis to Davis, May 5, 1938.
[1018] Lewis K. Davis to Davis, September 17, 1938.

There's some indication that Bill and his wife, Carrie, had monetary concerns. In January 1938, Carrie was training to work as a typist, despite her husband's stable job, and Lewis inquired about Bill's expected raise.[1019] Lewis also occasionally sent his son money to travel home as well as "around and down to the south."[1020] Despite this, Bill refused his father's multiple requests that he return home to live on the family farm in New Jersey with his wife and parents, work at Impact Tools for his father, and presumably let his wife provide care and company to his increasingly-blind mother.[1021] This option probably would not have saved them financially; Lewis' May 1938 request assured Bill that the company could pay him and speculated that it could set aside company funds "for lean times," but he admitted that "the question of depositing one year's alimony is not possible at this time."[1022] Two months later, he repeated the request half-heartedly: "As to your coming on, we need you very badly, at the same time, it would be foolish for you to come, as you say 'on a shoestring'."[1023] Bill may have also had personal reasons for remaining independent and elsewhere. "Unless mother gets a letter regularly from you or Carrie," Lewis once admitted, "she immediately begins to worry and think I have offended you."[1024]

Davis wrote a college thesis on the passenger terminal design of numerous train stations across the U.S.[1025] With the possible caveat that this shows an interest in what we may now consider industrial engineering and throughput of a system (in this case passengers), Davis' career took him in another direction within engineering. Records

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[1019] Lewis K. Davis to Davis, January 26, 1938.
[1020] Lewis K. Davis to Davis, July 19, 1938; Lewis K. Davis to Davis, January 3, 1938.
[1021] Lewis K. Davis to Davis, January 3, 1938; Lewis K. Davis to Davis, May 5, 1938; Lewis K. Davis to Davis, July 19, 1938.
[1022] Lewis K. Davis to Davis, May 5, 1938.
[1023] Lewis K. Davis to Davis, July 19, 1938.
[1024] Lewis K. Davis to Davis, September 17, 1938.
[1025] Davis, "A Study of the Recent Development in Passenger Terminal Design: A Thesis."

indicate that Davis was stationed at Camp Wadsworth, in Spartanburg, South Carolina in 1918, and this may have been his first foray into the south.[1026] He wrote that he "came to East Tennessee in 1924 to take charge of the plant and mines of the Southern Mineral Corp. at Black Fox, Tenn.," a subsidiary of a northern company that sought "to develope [sic] the non-metallic minerals of the Southeastern states."[1027] Davis reportedly spent "many years at that plant," taking on duties when the general manager resigned, and he learned a great deal about "the mineral situation in this territory first hand," including business practices that led to failure. The holding company eventually "became interested in properties nearer home (Vermont)" and "sold out to their competitors and the plant was shut down."[1028]

In 1935, Davis worked for a cannery in Waynesville, North Carolina, effectively as an industrial engineer. He developed standard practice instructions and improved the company's system of source records.[1029] He did so with some frustration, it seems. An index to his instructions emphatically notes, "All Records must be Immediate [/] Adequate and Reliable [/] Do your part to make them so by using these Instructions."[1030] By

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[1026] His personal papers contain several newsletters of the 27th Division of New York for Camp Wadsworth during this time. See Box 1, folder 3; F. A. W. Davis Civil Engineering Papers, MS.2829, University of Tennessee Libraries, Knoxville, Special Collections.
[1027] F. A. W. Davis, "The Wherefore of a Customs Grinding Plant," 1936, Box 1, folder 33; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections.
[1028] Davis.
[1029] F. A. W. Davis, "Standard Practise Instruction," July 19, 1935, Box 1, folder 32; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; F. A. W. Davis, "Standard Practise Instruction," August 21, 1935, Box 1, folder 32; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; F. A. W. Davis, "Suggestions and Comments on Source Records as Used by the Canneries during the 1935 Canning Season," October 8, 1935, Box 1, folder 32; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections.
[1030] Underlining in the original. F. A. W. Davis, "Index to Standard Practise Instruction Covering the Use of Forms for Source Records of Canning and Vegetable Divisions," 1935, Box 1, folder 32; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections.

extension, Davis also made recommendations on the company's labor utilization, such as his recommendation for "Individual Daily Time tickets":

> To keep the number of these tickets and entries down to a minimum, it is absolutely essential that intelligent supervision and use of labor must be had. Large numbers of workers working only a few hours is unnecessary. A few well trained hard working hands are much preferable. Cutting hands off promptly when their work is finished and only keeping a few regular hands to do special work. Special work to be done only when absolutely necessary. Trouble this year too many hands shifted to too many kinds of work in short periods of time. Importance of foreman placing workers in positions as stated in the S.P.I.'s [Davis' instructions] and keeping them regularly in these positions.[1031]

Davis clearly felt that he knew how to run a small industrial plant by the time he was working at TVA and living in Norris, TN, in 1936. While employed as an assistant mining engineer, Davis pursued startup funds for a "Customs Grinding Plant," equipped to grind many different minerals into different products. He worked back-of-envelope calculations on dozens of slips of scrap paper, many from unused soil erosion report forms that he likely procured from the TVA lab (or worked on in the lab). The design of the plant buildings were drawn out, costs of materials, equipment, and operations estimated, and a business proposal typed. By May 1936, Davis had obtained quotes on specific pieces of large grinding equipment from Consolidated Product Co., Inc., a machinery and equipment manufacturer in New York City.[1032]

In his business proposal, Davis explained that, while managing the Southern Minerals Corp. plant,

> I learned that the non-metallic minerals which were in a big demand by the various trades could not be found in large deposits but that they occurred in small

[1031] Davis, "Suggestions and Comments."
[1032] W. T. Hand to F. A. W. Davis, May 26, 1936, Box 1, folder 33; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections.

> deposits but these deposits contained high grade ore.
> I learned that where ever any concern tried to set up a plant on one of these deposits it eventually failed as the ore ran out too quick.
> I learned that when the owners tried to turn to some other mineral they were usually on one railroad line and could not get competive [sic] rates either for hauling in the crude or…shipping out the finished product.
> I have learned that the rapid advance in the technology of minerals, makes a one product plant obsolete unless they have a very fine product have made money and are capable of reconditioning their plant to meet the requirements.[1033]

Accordingly, Davis proposed a grinding plant in Chattanooga, placed with access to multiple rail lines and equipped with "all the best types of grinding equipment so many products could be made and techniques be maintained." The plant would obtain minerals with limited liability by contracting with farmers to mine their land themselves, and it would manage the logistics of delivering just enough train cars "in advance of needs" for the farmers to stock. With the nearest customs grinding plants operated by F. E. Schundler &Co. in Joliet, Illinois and Brooklyn, New York, Davis confidently noted, "There is no customs grinding plant in the South." [1034]

Davis further explained that he came up with this idea in 1929, "unfortunate[ly] when the crash came. However production in all lines is looking up and especially in the mineral field and it [is] for this reason this idea has not been pushed until this time. It is now a rising market and a plant of this type frimly [sic] establish[ed] at such a time can whether [sic] a future depression if Schundler concern can and did."[1035]

[1033] Davis, "Wherefore of a Customs Grinding Plant."
[1034] Davis.
[1035] Davis.

His proposal caught the attention of Porter Warner of Porter Warner Industrial Minerals in Chattanooga, who may have already known Davis from WWI service.[1036] Warner wrote to Davis on Tuesday, June 9, 1936 that he would be in Knoxville that Friday, "and if it should be convenient for you to run in Friday morning, I would be very glad to see you and talk to you further about this matter."[1037]

Davis replied immediately. "You know how anxious I am to talk things over with you, but you hit me at the wrong time," he explained, since the TVA Board Secretary and several prominent Puerto Ricans were set to visit his lab "sometime Friday, so there is little chance of getting off during hours. If you could only have supper with me I will come to Knoxville Friday evening, or if there is any chance for you to slip out here" to Norris, he ventured.[1038]

"Please do not come to any advance conclusions for [or] against the customs grinding plant idea until I get all the facts lined up for you," Davis continued, "As I told you I have all the necessary equipment lined up, used, rebuilt, and guaranteed including motors and conveying equipment for $15,000. I am working on the building drawings now and can show you quite a little pertaining to them." He also showed some anxiety that the idea would be stolen from him, noting some discussions involving mutual acquaintances.[1039]

[1036] Porter Warner to F. A. W. Davis, June 9, 1936, Box 1, folder 33; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections; F. A. W. Davis to Porter Warner, June 10, 1936, Box 1, folder 33; F. A. W. Davis Civil Engineering Papers, MS.2829., University of Tennessee Libraries, Knoxville, Special Collections.
[1037] Warner to Davis, June 9, 1936.
[1038] Davis to Warner, June 10, 1936.
[1039] Davis to Warner.

The two continued to correspond on arranging a meeting and may have finally met at the Farragut Hotel in Knoxville on June 23,[1040] but the paper trail ends there. Davis remained at Norris and the TVA, receiving the previously noted correspondence from his father at the same postal box. He may have continued to visit Chattanooga, but there's no indication that he pursued that entrepreneurial dream further.[1041]

Several TVA engineers were not entrepreneurs in the strict sense of the word, but they exhibited a fondness for small companies that tapped into the romance of frontier masculinity and entrepreneurship. Those small companies in new industries or with new products were on an industrial frontier. Their employees were felt to wield relatively more importance and independence, and to have more varied responsibilities placed on them. After leaving the TVA in 1937, rates engineer Edward Falck recalled his first interview with the eponymous president of Sam Ferguson in Hartford, Connecticut. "When I got to see Ferguson he told me that his company was too small to have both a president and a great engineer. They didn't have a big enough budget for that, so he said: 'I can't use you,'" but Ferguson offered to introduce Falck to the Chairman of the Board of Consolidated Edison, noting that the latter was big enough "that they could probably afford extra, specialized personnel."[1042]

When chemical engineer Ray Copson left the TVA in 1945, he recalled, "I think at the time I was interested in getting into an industrial job and was particularly interested in going with a small company, and this Rumford Chemical Company seem to be a very

[1040] Warner to Davis, June 19, 1936.
[1041] Lewis K. Davis to Davis, February 5, 1939.
[1042] Falck, interview, 23.

promising small company at that time. Later on it was merged into a large company and it didn't work out the way that I had hoped it would…" Copson to again work for "a small company, a developing small company," only to have the same pattern repeat. "I was never successful in my efforts to work for a small chemical company," he concluded, "They were always bought by a bigger company."[1043]

6.1.2.3 TVA Independence vs. Washington, D. C.

In addition to independence at the level of the individual, the TVA highly valued independence at an institutional level in a way that reflected and supported an adherence to frontier masculinity. As noted above, the TVA was a unique hybrid as a government corporation. [1044] It was resultingly "[a]lways protective of its administrative and personnel autonomy," fighting off what it perceived as incursions of government oversight.[1045] General Manger George Gant went so far as to declare, "TVA was not a New Deal organization," distinguishing it from more temporary and federally-controlled organizations like the Civilian Conservation Corps (CCC).[1046]

Nancy Grant points out that TVA Chairmen from Arthur Morgan and David Lilienthal to Gordon Clapp "equated criticism of the Authority with disloyalty to the ideals of democracy." She continues,

> The marshalling of forces against outsiders' attacks enabled TVA to withstand and survive potentially crippling lawsuits and Congressional investigations. A similar energy was used against other forms of criticism, including allegations of

[1043] Copson, interview, 20–21.
[1044] Lowitt, "The TVA, 1933-45," 35.
[1045] Grant, *TVA and Black Americans*, xvii.
[1046] Gant, interview, 2.

> racial discrimination… Damage control rather than detailed analysis of the basis for the criticism was the traditional response

from the 1930s through at least the 1960s.[1047]

Harry Case denied in his interview that he regretted his 1956 retirement from TVA, explaining,

> The job increasingly became one of fighting off the invasions and the incursions of the Federal bureaucrats which it's been doing all along but we've been pretty successful… But I thank God I had my turn before we lost any battles of any consequence and it wouldn't be as much fun now…[1048]

George Gant also cited TVA's conflict with Washington in his decision to leave in 1951, but he phrased it differently, distinguishing between two approaches to regionalism. "I left to take a position with that Southern Regional Education Board because as many of us had become, I became interested in interstate initiatives and activities quite apart from Federal involvement, regional, interstate," he explained.[1049] By contrast, "TVA people in those days, perhaps still, are concerned with the problems of regional administration which involves fighting off Washington antagonism. At any rate, involving a conflict in two systems of administration which just doesn't quite come together."[1050]

TVA's defense of its independence against Washington was frequently shown in its attitudes toward other federal institutions. Interviewees displayed a feeling of rivalry with the Army Corps of Engineers that sought to distinguish advantages of the

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[1047] Grant, *TVA and Black Americans*, 156–57.
[1048] Case, interview, 48.
[1049] Gant, interview, 27.
[1050] Gant, 28.

corporation's relative flexibility, and they frequently told stories of defensive moves against institutions that sought to change or control TVA programs.

In his interview, Beverly Burbage returned to the rivalry between Army Corps and TVA engineers more than once, happily relating the memory that the TVA outstripped the Corps in performance (such as construction cost and time) and the ability to buy land.[1051] Red Wagner, as the former head of Navigation, recounted the TVA's dealings with the Corps after the construction of Wheeler Dam. "Wheeler was the first reservoir on the main river that we filled," he explained, "The Corps of Engineers was regarded as the experts in navigation so they laid out the sailing line [in the reservoir]." Accustomed to "marking rivers like the Ohio," which was easier to navigate and well known to river pilots, the Corps made its sailing line so minimal that Wagner felt people would get lost. Proving his point, the first commercial tow that traveled the reservoir got stuck. In response to demands for a solution, the TVA created a simple navigation marking system that one could use without knowing the reservoir. "We developed the system and went to the Corps with that, but they didn't think much of that. Then we got the Coast Guard in to mark it," and the Coast Guard's commandant "agreed with our marking system and helped us fight it through the Army, and it's the system that it still used today in the Tennessee Valley. I think it could be used anywhere today but the Corps" had different preferences, based on their experience with the Ohio River. "We had some competition with the Army over that," he noted, "but we got along pretty well with them."[1052]

[1051] Burbage, interview.
[1052] Wagner, interview, 32–34.

Granted sovereignty over decisions of hiring, firing, and promotion in the initial TVA Act, the TVA seemed perpetually at odds with those who sought to place it under the control of the Civil Service Commission. We may recall the impetus for the TVA's 1943 "Study of Experience Backgrounds and Earnings of TVA Administrative and Executive Personnel," was compiled in response to Congressional debate over the qualifications and wages of government personnel, almost all of which were dictated by Civil Service standards.[1053] Gant claimed that TVA administrators' efforts in "avoiding or averting legislation or administrative acts which would have put a TVA in whole or part under the Civil Service Commission" were successful until the development of the Veterans Preference Act for those returning from WWII.[1054] The Agency sought exemption from the Act, Gant explained, not "in terms of Veterans Preference but rather in the administration of the Veterans Preference Act by the Civil Service Commission," because "It is impossible to administer the Veterans Preference Act unless you take jurisdiction also over the personnel administration of the agency in which you are reviewing in large part." Gant marked this as the start of "a series of confrontations with the Civil Service Commission about the applicability of parts of its administrative orders to the personnel system of the TVA as a whole. I suspect that has been a losing battle for TVA ever since."[1055]

The TVA appears to have had a similar relationship with the General Accounting Office which, as Gant explained, "refused to recognize, at least fully, the TVA obligation

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[1053] Personnel Department, "Study of Experience Backgrounds and Earnings of TVA Administrative and Executive Personnel" (Tennessee Valley Authority, September 1943), Box 397, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[1054] Gant, interview, 35.
[1055] Gant, 35.

and authority to keep its books, its accounts, according to the best practices of the private sector…" Because of this, the General Accounting Office "felt that it still had jurisdiction to make the audits and according to the standards of audits of Government agencies. You can see why the conflict existed," Gant added defiantly, "because the TVA was set up because a regular government agency was not considered competent to, or capable I should say, of carrying out the duties assigned to TVA."[1056] The resulting conflict regularly recurred:

> So periodically, I guess annually, the General Accounting Office would make its audit and TVA would have its own audit made and the General Accounting Office would take exception to various practices of TVA not because they were inaccurate or dishonest but because they weren't according to the standards of the administration of a regular government agency…We never succeeded in getting recognition by the General Accounting Office… with respect to the separate authority of the TVA for its own accounting.[1057]

TVA engaged in a similar 'turf war' with the Soil Conservation Service, which was created and given the authority to help establish and fund soil conservation districts in each state "[a] few years after TVA was established"—and after TVA had already developed cooperative soil conservation programs with local land grant universities and county agent extension service systems, Gant recalled.[1058] The TVA and land grant universities managed to convince the Service "[f]or several years…not to set up its districts in the Tennessee Valley but to work with the system that we had already had in cooperation with the universities and the local agencies." At least, they discouraged the Service from moving forward on its plans. "The Soil Conservation Service didn't agree but it didn't pursue its program in the Valley until after the war," Gant explained. After WWII, however, Gant

[1056] Gant, 34–35.
[1057] Gant, 34–35.
[1058] Gant, 36–37.

recalled that "in its publicity it showed maps of the United States with those states which had districts in green and those states that did not have districts in white and in time the whole United States was green except the Tennessee Valley which was white," a fitting visual for TVA's proud determination to deviate from federal oversight. Around 1946 or 1947, Gant believed, "the Department of Agriculture and the Secretary of Agriculture decided that this issue had to be resolved so they sent a representative to Tennessee Valley to try and persuade us in the TVA to agree that they should have districts and we in turn tried to persuade them that we should all do this together through the existing system, not districts. We failed."[1059]

Although interviewees occasionally mentioned specific Senators or Congressmen as allies in TVA's first decades, far more numerous salient recollections were of antagonism and victimization by Congress and the Senate even before the 1952-53 shift to Republican control. Several told of their experiences of accusations of Communism and the investigations that resulted. Although communism is arguably the antithesis of frontier masculinity in its rugged independence, these accusations highlight that TVA often felt villainized for bucking the political norm—and embodying that rugged independence in doing so.

In 1939, the House Committee on Unamerican Activities investigated TVA personnel. Harry Case credited "this flow of charges and allegations" to Senator McKellar,[1060] a public figure often maligned in TVA recollections for his bitterness that

[1059] Gant, 36–37.
[1060] Case, interview, 15.

TVA refused to kowtow to his system of political patronage.[1061] "[H]e wanted to know what the record was on so and so, find out something about so and so. So we had to do the paperwork that was involved in that kind of stuff…" Case said, "I had some friends who were victimized by it. But they survived…They never got anything on anybody because there wasn't anything to get."[1062] He later added, "I don't consider this now or did then important in the history of TVA. It was sort of a nuisance more than anything else."[1063]

Again in the early 1950s, TVA faced accusations of Communism, this time from Senator Joseph McCarthy. The interviewees who discussed the period took pains to communicate it as a non-event, presenting the Agency as far stronger than the Senator in the process. When asked how McCarthy's anti-Communist activities impacted the Power Division, Kampmeier responded, "Very little that I recall…" He mentioned "one chap" in his office whose wife was accused, "and there was a little flurry of excitement about that," but nothing that impacted the man's job. In his personal experience,

> …we found that those of us who were considered to be in somewhat sensitive positions, those that had any contact with Oak Ridge, for instance…had to get security clearances and…have our relatives and neighbors subjected to being asked a lot of questions…I was inclined to think that there was a lot of time and energy that was spent on that that was probably unnecessary.[1064]

Wagner responded in a similar fashion. "I wasn't aware of any impact on TVA," he claimed, "It probably strengthened TVA's commitment to human rights and civil rights, that sort of thing, but he [McCarthy] was just generally regarded as a sinister force and that

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[1061] Case, interview; Gant, interview; Burbage, interview.
[1062] Case, interview, 15.
[1063] Case, 16.
[1064] Kampmeier, interview, 52.

was about it as far as I was concerned."[1065] Thomas was still more emphatic. "[O]ther than the unsavory tactics that McCarthy used," he explained, "I personally looked on him as more or less a self-seeking political extrovert who only wanted to feather his own nest and to me he was water off a duck's back."[1066]

Kampmeier mentioned that "TVA's right to build steam plants was challenged in Congress" after WWII. The Agency had acquired and built steam plants during the war, but it "had to persuade Congress to appropriate the money" to expand capacity afterwards. Kampmeier "spent a fair amount of time in Washington then as I did on certain other occasions trying to be sure that we had answers available on the spur of the moment for any of the members of Congress who wanted facts and figures for the arguments on the floor and so on" before Johnsonville Steam Plant could begin construction in 1949.[1067] He explained his sentiment on such processes:

> I might say that some of the work that I found kind of aggravating was going to Washington for budget hearings, appropriation hearings, this sort of thing… I found it kind of, well, aggravating and you might almost say 'demeaning' in that…you were given the distinct impression by, at least . . . a minority if not a majority of the people that you are facing across the table, whether they're Congressmen or whether they're in the Bureau of the Budget or whatever…there was an attitude of inquisition, of cross-examination, of trying to put one on the defensive, sort of in the spirit that there's bound to be something wrong here, there's bound to be some shenanigans, there's bound to be some effort to do something that is not in the public interest, or: 'There's bound to be a selfish motive here and it's our job to take it out and expose it,' and so on. You never were given the feeling: '. . . We recognize that TVA's doing a good job and we'd like to help you do a good job and let's be sure we get all the facts out so we can be sure we get the right answer.' It was never in that sort of a spirit, or at least it

[1065] Wagner, interview, 17–18.
[1066] Thomas, interview, February 18, 1983, 31.
[1067] Kampmeier, interview, 52–53; Tennessee Valley Authority, "Johnsonville Fossil Plant," Tennessee Valley Authority, accessed March 16, 2021, https://www.tva.com/Energy/Our-Power-System/Coal/Johnsonville-Fossil-Plant.

> never seemed to be. It always seemed to be a case of 'we're going to have to see what we can catch you guys at' and I found that really pretty wearing.[1068]

Although Kampmeier embodied the underdog individualist in his presentation of the opposition's antagonism, he didn't necessarily enjoy it. Beyond this apparent desire for a cooperative approach, Kampmeier waivered on whether "you felt like you were accomplishing something" worth the "unpleasant sort of a path to get there." Each time he left such hearings, "I wondered . . . sometimes whether it really was worth all the effort. Those were about the only times that I had my doubts . . . about being in the kind of work I wanted to be in."[1069]

With the shift of federal control to Eisenhower and the Republican Party in the 1952 elections, the antagonism towards TVA ratcheted up. When Congress started to cut funds for the construction of new plants in 1952 and 1953, Chief Design Engineer Walter Emmons recalled, "I was surprised that they hadn't done something like that before." He added, "The same ones that started this TVA had been in there long, and when you got a break in, why I thought there might be cutting back," evocative of a break in a defensive line.[1070]

In response, the TVA circled its metaphorical wagons and sought a bit more self-sufficiency. "I wasn't concerned about my job," Emmons explained, "but I was concerned about the people, yes, yes. We had to do a lot of shifting around and trying to keep people on if we could possibly do it…Fortunately, usually we were able to get, the people that were leaving, we'd get . . . the Personnel Department and other departments, would try to

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[1068] Kampmeier, interview, 53–54.
[1069] Kampmeier, 54–56.
[1070] Emmons, interview, 22.

bring them in to interview our boys… they were able to go to another job."[1071] As we saw above, Gordon Clapp pursued TVA's relocation to Muscle Shoals around this time; he also sought "a method by which this region could purchase the power system from the Federal Government" in 1952 or early 1953, according to John Oliver. "He felt that the region itself ought to determine its own future," Oliver explained.[1072]

Kampmeier credited the Executive Branch with the bulk of the increasing antagonism. "The administration certainly became more antagonistic. I don't know if Congress itself did. Certain individual members of Congress perhaps," he mused,

> But we found that we had increasing problems at the Bureau of the Budget. . . . The unwillingness . . . [of] the administration, through the Bureau of the Budget, to recommend to Congress that TVA have money appropriated to add to its power system, there was quite a shift in attitude. Eisenhower himself use the phrase 'creeping socialism' to apply to TVA, and this was pretty well noted at TVA. But more specifically the Bureau of the Budget was headed by people who felt that they were to be getting the government out of the power business, specifically, and some other businesses, too.[1073]

6.1.3 TVA and the Natural World

As previously discussed, frontier masculinity relates to the natural (or not directly manmade) world in ways that present the man as a hero, whether he is taming and shaping wilderness for some other purpose, is the active defender of a helpless 'mother nature,' or both. As we saw in chapter 5, TVA engineers often enjoyed outdoor recreation like horseback riding and picnics; however, in the interviews, their conscious discussion of the

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[1071] Emmons, 22–23.
[1072] John Oliver, interview by Mark Winter, June 16, 1983, 9–10, Box 8, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[1073] Kampmeier, interview, 56–57.

natural environment was limited to their work and the impacts of TVA. Although interviewees occasionally communicated some sensitivity to environmental concerns during their 1980s interviews, they showed that the TVA generally embodied the 'taming and shaping' spirit of frontier masculinity during its first two to three decades.

Chemical engineer A. B. Phillips remembered that, in the late 1940s or early 1950s, his division "did a lot of pilot plant work" researching "methods of pollution control from coal-fired steam plants," including processes to remove sulfur dioxide. They did so in response to the Power Division, which "could see that they were going to have to do something at the steam plants to control pollution, or, to do something about that problem, and they asked us to work on it." Nothing came of that work, however: Phillips explained that Power "decided for a long time to use a different kind of control… And then in later years they worked real hard again on some of those processes."[1074] Roland Kampmeier supported the idea that Phillips implied: the Power Division could have done more. "I think that . . . TVA, looking back on it, might have been wise to have started a little earlier to do a little more than it did on controlling the emissions from the steam plants."[1075] In addition, "The same sort of question came up in connection with the strip mining of coal." With the postwar boom in steam capacity, "We were concentrating pretty hard on how we could find enough coal and get it at the lowest possible cost… And we didn't feel that it was up to us to try to tell the states [that] . . . they ought to tell the miners how to mine the coal and what condition to leave the hillside in and so on."[1076] The Agency's realization "that we were going to have some headaches later" and its subsequent "minimum initial

[1074] Phillips, interview, 6.
[1075] Kampmeier, interview, 30.
[1076] Kampmeier, 30–31.

requirements on restoring strip mines and so on" came after the time period under study.[1077] "But again we waited until we began to see hard evidence of problems before we did much about it, and looking back on it we probably could have done better there," he explained,

> I think we were pretty foresighted, at least, about anticipating power demands and anticipating where we needed to provide power supply and what kind of plant would be most economical and so on. We weren't at the same time looking very hard at some of these, I guess you [could] call them secondary questions, secondary in the sense that they were the secondary effects from some of the things that were done.[1078]

Donald Matter, former Chief of Water Control Planning, believed that TVA made such economic calculations because it was constrained by federal metrics. "When you think of the environment you think of the recreation facilities and fish and wildlife. We thought of all those things whenever we did our planning work," he explained, "But in those days you could not put an economic value on them. There wasn't any national policy or anything else…" He recalled their using "what we called the 'Green Book,'" a compilation of data from various federal institutions that "was used as a basis of appraising the different projects," and which apparently did not could "environmental things" at the time. "Since all these projects that we planned had to be economically feasible, we couldn't put any value on them," he explained, "although in every project plan report we mentioned these things and how we thought the project would react on them. So then when the big push came later on in more recent years, it sounded as if they had not been recognized before. As a matter of fact, they had."[1079]

[1077] Kampmeier, 30–31.
[1078] Bracketed text in the original transcript, approved by Kampmeier. Kampmeier, 31.
[1079] Mattern, interview, 25–26.

Floyd Thomas in Power Operations also pointed to federal neglect, and to measures that TVA took despite it. "In the early 1940s the main thing was to try to keep the plants operating for we were short of generating capacity. There were no Federal laws that required that you have particulate or SO_2 control," he explained. Despite this, "Our main objective was to have as clear a stack as possible simply because that meant that we had efficient operation of the unit." Other practical motivations with positive environmental side-effects followed. When TVA began operating the Watts Bar Steam Plant, its first fossil fuel plant, in 1942, Thomas recalled, "we found that we needed to get as much of the ash particulates out of the gas stream as possible because…These particulates in the gas stream caused erosion of the [induced draft] fans themselves. It paid us to try to keep ash particulates and foreign matter to a minimum."[1080] Maintenance costs were the primary motivator in that case, Thomas explained, and also in the case of the Johnsonville Steam Plant, where the Agency "incorporated a mechanical separator in the gas stream…which mechanically separated the particulates and minimize the amount of erosion on the fans" before it began operation in 1951.[1081]

For his own part, Thomas appears to have generally resented environmental activism and regulation. Throughout his 1981 interview, he expressed support for coal and nuclear power because it helped lower costs and provide cheap energy to the public. Meanwhile, he complained frequently about the meddling of conservationists, historic preservationists, whitewater rafters, and the Environmental Protection Agency (EPA), all of whom he saw pitted against the TVA and everyday residents and their common desire for cheap

[1080] Thomas, interview, February 18, 1983, 5.
[1081] Thomas, 6.

electricity. The expansion of TVA's coal-fired power production, for example, "continued until the Environmental Protection Agency started an ever-changing set of requirements," he claimed.[1082] Thomas believed a point he attributed to Wagner, "that EPA requirements made it nearly impossible to mine coal and when you could, placed almost impossible requirements on burning it and compounded that by imposing near impossible ash disposal requirements."[1083] Although most of his discussion in this interview covers post-1953 developments, they illustrate a tenacious perspective that almost certainly existed before then. On "the question of conservation" itself, however, Thomas offered a distinguishing aside. "By the way," he added, "I have the equivalent of R-30 insulation over my house in the attic. I believe people ought to conserve. Frankly, I am a conservative in that sense. I think that energy should be used wisely."[1084]

6.2 Military Masculinity at the TVA

While the TVA exhibited and celebrated many traits of frontier masculinity, its response to another nationally-popular hybrid masculinity of the era was generally lukewarm. As we saw in chapter 3, a military masculinity that was predominantly physical masculinity rose in prominence during World War II, and, afterwards, it shifted tone somewhat to what Suzanne Clark labels a 'Cold Warrior' masculinity. Overall, military masculinity here is distinguished through an association with the military and through dedication to institution(s), including bureaucracy and hierarchy. TVA and its engineers clearly valued

[1082] E. Floyd Thomas, interview by Mark Winter, September 1, 1981, 10, Box 11, folder 2; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[1083] Thomas, 10–11.
[1084] Thomas, 25.

military ties during WWII and dedication to the nation (as an institution) throughout the time period in question. On the other hand, they frequently exhibited a resistance to bureaucracy and hierarchy (however theoretically) as well as to the passionless 'Cold Warrior' personalities of certain individuals. Such resistance made TVA employees relatively resistant to the allure of military masculinity overall.

6.2.1 The TVA and the U.S. Military

6.2.1.1 TVA Work for the Military

As was the case with any U.S. institution, the TVA consciously and explicitly promoted its work as significant to U.S. military success during World War II.[1085] "TVA Jobs Are War Jobs," a 1944 employee recruitment flyer declared in bold, capitalized letters, as it explained its immense military importance to prospective applicants (Figure 1). "All phases of the Authority's multi-purpose program are now geared to the needs of a fighting nation," it noted before explicitly linking the products of its chemical, electrical, agricultural, soil conservation, flood control, and navigation programs, as well as its programs in health outreach and education, to the nation's success in the war and beyond. Not only did its hydraulic and steam plants provide low-cost electricity to homes farms, and industry, but "Seventy-five percent of the power…goes to turn the wheels of war plants." Not only did its dams turn the Tennessee River "into one of the major inland

[1085] Hargrove and Conkin, *TVA: Fifty Years*.

waterways in the United States," it was also vital in that "Millions of tons of war materials now move on the navigable channel every year."[1086]

[1086] "TVA Needs You to Serve the Nation in War and Peace," March 1944, Box 400, folder 8; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

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Figure 1: Recruitment flyer, TVA, National Archives and Records Administration-- Southeast Region (Atlanta).

6.2.1.2 TVA and Military Service

One may also gage TVA employees' desire to link their identities to military masculinity by witnessing attitudes and actions around joining military service during World War II. Internal and public TVA documents from the time show that thousands of its employees were inducted into the armed forces during this period.[1087] Over the course of the war, roughly 9,000 TVA employees had to be replaced, most of whom were laborers.[1088]

In April 1942, the TVA reported that roughly 1,400 had been inducted so far, and, of the 34,000 employed at the TVA at that point, TVA had requested deferments for fewer than 750.[1089] The TVA requested deferments from military induction, 6 months at a time, "only for those employees who occupy positions requiring administrative or specialized experience in technical fields, or specialized skills required in carrying on the wartime assignments of the Authority," thus limiting such requests to "construction activities related to power development, engineering work related to power development, the generation, operation and maintenance of power, the manufacture of munitions, and the

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[1087] Arthur S. Jandrey to Gordon R. Clapp, "Study of Loss of TVA Personnel to Other Defense Agencies and Activities," memorandum, April 21, 1941, Box 397, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Personnel Department, "Recruitment of Personnel for an Anticipated Expanding Program of Construction" (Tennessee Valley Authority, July 1941), Box 400, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Press release (Knoxville, Tennessee: Tennessee Valley Authority, April 17, 1942), Folder 001432-011-0308: Tennessee Valley Authority, 1941-1943; Group II, Series A, General Office File, Labor; Papers of the NAACP, Part 13: NAACP and Labor, Series A: Subject Files on Labor Conditions and Employment Discrimination, 1940-1955, Library of Congress, https://congressional.proquest.com/histvault?q=001432-011-0308&accountid=11107; Gordon R. Clapp to Board of Directors, "DESCRIPTION OF ONE PHASE OF PERSONNEL RECRUITMENT TO MEET EMERGENCY CONDITIONS," memorandum, August 15, 1941, Box 400, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[1088] They did not all leave specifically for military service. Gant, cited in Case, interview, 5; Case, interview.

[1089] Press release (Tennessee Valley Authority, April 17, 1942).

operation of chemical plants and essential related activities"—and only those "who could not be replaced with trained personnel or for whom replacements could not be trained within the time limitations."[1090]

As Mattern recalled, this excluded entry-level engineers. "[A]lthough TVA insisted on getting the deferments for some of us, they didn't get them for these real young fellows who had just come to work and were really pencil pushers," he explained, "We hired some and in a few months we'd lose more of them."[1091] The more senior engineers in specific areas, in this way, were demarcated as part of a fortunate elite, when viewed one way (such as through the valuation of white-collar masculinity), and part of 'those left behind' to one who highly valued direct military service as an expression of one's masculinity.[1092]

Some of these engineers tried to enlist nonetheless. Structural engineer Walter Emmons was deferred "all the time" but finally enlisted toward the end of the war. At that point, he recalled, "the work wasn't there when they started closing down everything" and "so they said that they would release anybody that wanted to be released from then on… I had enough to defer, I had two children, like I say, so I could have, I guess stayed out, but I didn't." He was 38 at the time and was initially recruited "to replace younger officers in this country so they could be sent overseas…. that's what the recruiter was talking about, that's what he was looking for, . . . Older people that could come in and replace younger officers." The interviewer asked Emmons what made him decide to leave the TVA and

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[1090] Clapp, qtd. in .
[1091] Mattern, interview, 9–10.
[1092] See, for example, T. Roosevelt on military service in Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995), 191.

enlist, and his reply exhibited an emotional decision linked to military masculinity: "I always felt that I should be part of it. I missed the first World War. I missed it. My brother who was five years older than I was, he was in that. And I missed that one, so I figured I was on the other end now, but I wasn't going to miss it as long as I could do any good."[1093]

Emmons was placed in the Coast Artillery before being transferred to "military government" (later labeled "Civil Affairs") and sent to Europe to work with local residents of war-torn towns to set up temporary local governments; access relief; relocate individuals who had been displaced by the war; and care for those interred in concentration camps. His wife and children remained in Norris, TN during this time.[1094]

Others were less successful in their attempts to enlist. Copson emphasized, "It really wasn't my decision to stay on there at TVA." He explained, "I tried to enlist in the Army… A technical course some sort, I forget the name. But I went down to Birmingham to try to enlist in that. I was told that they'd rather have me stay where I was. So I was there for the duration of the war."[1095]Copson, then, was actively denied in part due to his expertise.

A. B. Phillips assumed that he "would probably" be drafted; however, "TVA was working on some things that were quite important to the War Production Board, and they got deferments for the people that were working on those things for a period." While Phillips "was off trying to get a commission in the Navy," however, "TVA…lost the exemptions except for just a few. I just happened to be one of the few that was still in that

[1093] Emmons, interview, 7–8.
[1094] Emmons, interview.
[1095] Copson, interview, 7–8.

status. I had a physical limitation, eyesight, that would just permit limited duty, so apparently the Draft Board decided to continue working on those things" on which he was employed. In this assumption about the Draft Board's decision, we see that Phillips believed his R&D was considered more valuable than his limited duty, but not as valuable as his service would have been with acceptable eyesight. Phillips knew nothing about the lost deferments at the time, however, so his return was a bit of a shock: "When I came back, why, a number of my colleagues were gone." He was drafted "when all those jobs were through…But that wasn't until 1945, I think." He served for a year but didn't share his experience in the interview.[1096]

Other TVA engineers did not seek enlistment. Kampmeier recalled, "I did have an exemption . . . because of the nature of my work"; however, "I don't remember anymore whether that was really what was . . . keeping me out of the service altogether." He explained, "I'm pretty sure that I couldn't have qualified," citing that he was too tall and had developed "polio back about the end of my first year with TVA and so I had some physical handicap there—[a] limp in one leg—that I expect with the combination of my height would have kept me out anyway." His presentation of the matter seemed very practical, and he expressed no regret about missing military service.[1097] Wagner also recalled being deferred for his work, but being an unlikely candidate for the draft regardless. "TVA was building a navigation channel and transportation was considered essential to the national defense. TVA asked for me to be deferred and I was deferred. I

[1096] Phillips, interview, 2.
[1097] Bracketed text in the original transcript, approved by Kampmeier. Kampmeier, interview, 21.

never served in the war at all," he explained, "I was married, of course, and had three children by 1941 so that was not [a] high risk anyway."[1098]

6.2.1.3 TVA, Postwar Employment, & Veterans

One might also inspect the impact of the war's end on employment and engineering work at TVA and consider this a sign of the importance of militarism and military identity to the TVA. Most interviewees who discussed the matter believed that disarmament and the reemployment of veterans did not significantly impact TVA or its work. If this *had* been the case, one could contend, this would have shown that the TVA's work was strongly dependent on (and thus intimately involved in) the war effort, and that many of its former employees remained dedicated to the TVA after their experience in the military.

Despite nationwide fears that disarmament might produce an economic recession or depression, and fears within TVA that it could cut back on its business,[1099] TVA programs continued and expanded in the postwar period.[1100] When asked about postwar "cutbacks" to Power, Kampmeier recalled, "[T]here really weren't any cutbacks while I was there. The nearest thing to a cutback was right at the end of the war, [a] brief little sag, it really wasn't a sag at all."[1101] Mattern likewise remembered, "The World War [II] coming to an end did not affect too much the requirements for power. As you know, at the time the

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[1098] Wagner, interview, 6.
[1099] C. F. Blee to Frank D. Jones, letter, June 6, 1946, Box 482, folder 7; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[1100] Hargrove and Conkin, *TVA: Fifty Years*.
[1101] Kampmeier, interview, 81.

demand for power in the States was growing about ten percent a year, so we were still involved in providing power."[1102]

The only moderate postwar change to which Mattern admitted was in employment. "The end of the war really didn't change things immediately except that some of our boys came back that had gone to service," he said, "But even with them, many of them didn't come back. Some decided to stay in the services and others got jobs elsewhere. So I wouldn't say that the war had a whole lot to do with our work."[1103]

Harry Case mainly discussed the return of veterans as it impacted the TVA's ongoing struggle against the oversight of the Civil Service Commission, as mentioned in the section on frontier masculinity. He presented it as a struggle to continue to hire employees based on merit. "We could live with Veterans Preference, and did, if they'd let us do it our way," he explained, "…[O]ur battle was with the bureaucrats in Washington to keep from having our personnel system taken into the Civil Service by the back door of Veterans Preference, but we did succeed…in getting the Civil Service Commission to accept the TVA version of Veteran's Preference and we could live with that." Case recognized that 'their way' was suitable. "It was a departure from the principle of merit and efficiency which was written into the Act, in principle, but as long as there were substantial numbers of veterans who were qualified to do the various kinds of work, then that wasn't necessarily a problem," he elaborated, "What we did was to say that, in effect,

[1102] Mattern, interview, 13.
[1103] Mattern, 13.

other things being equal on the merit side we would take the veteran over the non-veteran."[1104]

As returning veterans, Emmons and Phillips also saw little change in the TVA at the war's end. "I assumed I was going to TVA," Emmons remembered of his leaving the service, "When I got home they called me and said they understood that I just got home and I could come to work when I wanted to."[1105]

"Was that fairly typical of returning veterans?" the interviewer asked.[1106]

"Yes. As a matter of fact, I never thought anything about it," Emmons replied, "…I was happy with the job I had had with them and I was just on leave. I guess that's what I was. That time was all figured now as worktime when you retire."[1107]

Phillips also felt as if he'd been on leave.

"Was it very difficult to make the transition back to TVA after you came back from the service?" he was asked.

"No, no, not at all," he said, "It was almost as if I had been gone for a long vacation. I left rather suddenly and came back and everything seemed to be about the same. I was assigned to a different project and the same project leader…"[1108]

[1104] Case, interview, 6.
[1105] Emmons, interview, 17.
[1106] Winter, qtd. in Emmons, 17.
[1107] Emmons, 17.
[1108] Phillips, interview, 4.

The TVA continued with some defense-related projects, such as Phosphate Development Works (PDW), which produced methyldichloro phosphine oxide ('dichloro'), an intermediate for the nerve agent GD. The Army Corps of Engineers and private contractors initiated the project in December 1950, and it was located at Muscle Shoals one month later. The TVA was involved in the project from that point until the facility's 1992 closure.[1109] Phillips recalled his work with others in Chemical Development as they attempted to recycle one of this process' byproducts into feed as well as other problem-solving research related to PDW.[1110] Hignett recalled directly "working on nerve gas" as part of PDW. "We weren't to tell anybody what we made there, [but] rumors got around that we were making something secret," he explained, "As soon as it was in successful operation, I think the Government took some pains to let the explanation leak out so the Russians would know."[1111]

George Gant discussed "the general settling down and rearrangement after the war" in the TVA more broadly:

> The general questions had to do with where do we go from here? TVA's record during the war was just fantastic: morale very high, building dam after dam in record time, selling war bonds. Great! There was pride in having so much to do with the success of the nuclear efforts at Oak Ridge and otherwise. There was pride in having the Chairman of the Board become a major figure in the nuclear age, you see, in the shape of Lilienthal. That one of the TVA's own staff would succeed him as a member of the Board… how is TVA going to adjust to the postwar period after all of the excitement…of the war years in which TVA played

[1109] Linda E. Blevins, "Phosphate Development Works Records" (National Archives and Records Administration Washington, DC, April 22, 1992), https://www.archives.gov/files/records-mgmt/rcs/schedules/independent-agencies/rg-0142/n1-142-92-018_sf115.pdf.
[1110] Phillips, interview.
[1111] Hignett, interview, 17.

> such an important part to the Power program, munitions program, phosphate and nitrogen and in so many ways?[1112]

The answer was that the TVA adjusted quite well. Gant pointed to "some innovative new programs" that developed at this point, such as the small watershed program or Tributary Area Development (TAD) and work with state parks, as well as continued developments with fertilizer production and distribution and in the construction of power plants. Such work, Gant claimed, provided "reassurance that TVA was not all over with at the end of the war and that the construction program and its operating responsibilities would continue on with imagination and with vigor."[1113]

That the TVA felt pressure to link itself to military success is illustrated in the same flyer: As we saw in chapter 4, military service and recruitment competition from booming defense industries had by this time induced a labor shortage at the Agency and created the need to specifically advertise for women and "non-draftable men" to fill its ranks.

The TVA certainly lived up to its representation on the flyer, not least in its vital power production. "TVA business was a war business," Harry Case said in his discussion of the WWII era, "We were building dams for electricity to make airplanes and we were a pretty crucial agency at that time."[1114] Greater amounts of electricity than the TVA had been generating to date were required for aluminum production for the airplanes that Case mentioned, and equally large quantities were demanded late in the war period for the secret

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[1112] Gant, interview, 22, 24.
[1113] Gant, 24–25.
[1114] Case, interview, 5.

atomic weaponry development at Oak Ridge; TVA constructed generating capacity to meet those needs.

Donald Mattern in Water Control Planning recalled that construction frenzy well. His department worked out plans for Watauga and Douglas Dams simultaneously when "there was a question" over which should be built first. "[O]ur work originally showed that Watauga was the one that should be built first because it would provide more flood control," he explained, "But Douglas could be built much faster and at that time power was more important… Both [speed and power] were major factors."[1115] Flood control, he said, only "came back into the picture" after the war's end.[1116] "But there were hectic times in there," he recalled of his department's wartime work.[1117]

It appears that so few employees actually knew about Oak Ridge during the war that it contributed somewhat to the Agency's military self-perception, but probably not as much as it would have later. Mattern was one of many who contributed work towards the project without knowledge of its exact nature. "The Project Planning Branch had an awful lot to do with picking Oak Ridge. It came down from Washington that the U.S. Army Corps of Engineers wanted an area of about 56,000 acres back of the Allegheny Mountains, one that had water supply and power..." he recalled, "We looked all over the Valley trying to find a spot which met their requirements and we finally picked an area that is now Oak Ridge. We didn't know what it was going to be. We guessed that it was going to be a munitions factory because their requirements were the same as a munitions factory would

[1115] Mattern, interview, 10–11.
[1116] Mattern, 13.
[1117] Mattern, 11.

be."[1118] Harry Case, who was Assistant Personnel Director at the time, retrospectively claimed, "Some people knew about Oak Ridge, but we didn't, nobody in Knoxville apparently knew anything about what was going on at Oak Ridge. But somebody up the line, way up the line in Washington, knew that TVA's power was going to be indispensable. So we were a war industry, as it were."[1119]

Despite the TVA's usually antagonistic relationship with private electrical utilities, Kampmeier recalled a period in which it set that rivalry aside in a cooperative dedication to its national institution rather than competition or even self-reliance. "The year 1941 was a year of power shortage. We had a record-breaking drought which had really started in 1939 and continue to through '40 and into '41. We also were having a very rapid growth and power use for war production… We were supplying power over and above our firm commitments. We had undertaken for some of this work production to provide more power than we were in a position to guarantee," he explained. Despite this,

> Krug and Wessenauer assured the . . . power people from the other power systems that as long as TVA could keep the supply going it was willing to share with the neighbors and help them to keep their supply going even though this might mean that we'd all run out of power eventually and TVA might otherwise have been able to keep going a little longer. This came as a shock, but a pleasant shock to the utility people who had never been all that cooperative with TVA and were rather surprised to get this sort of cooperation from TVA.[1120]

The TVA's Chemical Division also reoriented to meet war demands. Lowitt explains that the chemical plants at Muscle Shoals returned to their original purpose, having first been constructed to produce massive quantities of ammonium nitrate for

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[1118] Mattern, 11–12.
[1119] Case, interview, 5.
[1120] Kampmeier, interview, 22–23.

munitions during the first World War.[1121] Ray Copson, however, recalled a more complicated development that showed the TVA's—or, at least, his boss Harry Curtis'—resistance to abandoning expert opinion to serve the Army. "[W]hen it began to look as if … United States would be getting into World War II," Copson remembered,

> The Army approached TVA and said that we would like to have those nitrate plants back to make munitions. I remember Dr. Curtis, one night, leaving to go up to Washington to talk with the Army. He said he felt he was like the lamb that laid down with the lion. But the Army was finally persuaded that it would be foolish to try to reactivate the cyanimide plant to make munitions because the whole technology has changed in the meantime… That process has been superseded technically… And that was cheaper economically. So that discussion, there were several discussions about it, that finally ended up by the Army asking TVA to build a synthetic ammonia plant at Muscle Shoals and keep on the phosphorus program, which we did.[1122]

As a result, the TVA did continue to produce large quantities of highly concentrated fertilizer and "shipped a lot" of it to England during and after WWII, as Allbaugh put it.[1123] When the requested synthetic ammonia plant was completed, Copson recalls, "We were, I think, the first of the new plants to get into operation. I remember that there was quite a celebration when we did."[1124] Copson returned to the topic of WWII-era ammonia and ammonium nitrate production several times during his interview, centering Army demand for it.[1125] This demand declined, Copson recalled, "Later on" when "more powerful explosives were developed," at which point the TVA developed a method to make ammonium nitrate safe for fertilizer use. As a result, "during the remainder of the war we kept on making ammonium nitrate but it went into fertilizer use then. And a lot of that was

[1121] Lowitt, "The TVA, 1933-45."
[1122] Copson, interview, 6.
[1123] Allbaugh, interview, 30.
[1124] Copson, interview, 12.
[1125] Copson, 6, 12, 16, 17.

shipped abroad. Foreign nations in particular were anxious to get ammonium nitrate fertilizer…" including England.[1126]

Shortly after the Army had requested the synthetic ammonia plant, Copson recalled,

> the next step was that the Army became interested in our phosphorus, and the large scale use of phosphorus by the Army in phosphorus shells during World War II, I would say, really came about because TVA had developed this rather large phosphorus facility at Muscle Shoals, because I don't think the Army ever used phosphorus shells very much before then. Well I know they didn't because phosphorus just wasn't available in any large quantity.[1127]

He explained that most of the TVA's phosphorus production was "shortly" going to the Army from Muscle Shoals "by tankcar" to the arsenal in Huntsville, AL. "I well remember the first time we sent a tank truck, the 40 miles or so, to Huntsville Arsenal," Copson said, "It was the first time anyone had ever even thought about doing something like that. Phosphorus, of course, ignites spontaneously on exposure to the air, and is considered a pretty dangerous material. And if it hadn't been a war time situation, there was a question whether we would have ever wanted to do it."[1128] They developed a procedure of loading the phosphorus and allowing it time to cool and solidify before shipping, however, and "it became routine after a while…So we became rather closely associated with some of the Army people there."[1129] Copson also recalled a research project "based on the elemental properties" in which the Army gave his Division "an assignment to see if we could develop some kind of a . . . material which would ignite by itself. The idea was to have something that would look like a can of tooth powder or maybe a tube of toothpaste or something and

[1126] Copson, 17; Winter, cited in Copson, 17.
[1127] Copson, interview, 12–13.
[1128] Copson, 13.
[1129] Copson, 13–14.

you could leave a little of it somewhere and within a short time it would ignite and start a fire." That project lasted about a year and required Copson to "mak[e] a couple of trips up to Washington to talk with Army people" but resulted in no utilized product.[1130]

Copson, Hignett, and Phillips all recalled another Chemical Division project for the military, emphasizing the importance of such work despite its eventually going unused. At least two distinct projects researched the possibility of extracting aluminum or an aluminum alloy from local clay and ores. "The War Production Board was very much interested in the fact that all of our aluminum bauxite and the domestic bauxite supplies in the United States had become pretty well exhausted," Copson explained, "and was interested in the fact that in the Tennessee Valley there was some rather high-grade white clays and they were thought to be a potential source for alumina."[1131] Hignett and Phillips pointed to more explicit developments in the war. "It was because of the essential need for aluminum at that time and the fear that supplies would be cut off by German submarines," Hignett said.[1132] "The problem was that the Nazi submarines were pretty active by then, and you know we'd get our bauxite from Jamaica and around there they were sinking the ships," Phillips explained, "So it seemed important to develop some technology to use what we had to make aluminum."[1133] Hignett supervised R&D work on two such processes,[1134] and Phillips recalled, "I worked real hard" on those projects.[1135] After the war's end, it remained more economical to import high-grade aluminum ores than to use domestic ores,

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[1130] Copson, 15.
[1131] Copson, 15.
[1132] Hignett, interview, 5.
[1133] Phillips, interview, 3.
[1134] Hignett, interview, 5.
[1135] Phillips, interview, 3.

and the projects were abandoned. Hignett didn't lament this end, he explained, since "I could see the need for doing the work especially during the war time, that it is insurance really against the things that were going on in the war."[1136]

A. B. Phillips also remembered the phosphorus munitions production for incendiary bombs, mentioned above, as "a big project that we worked on…so they could drop them on cities and what not."[1137] We see in his later comments that this slight lack of enthusiasm on the matter may have been the result of a muted moral qualm. Phillips moved on to discuss the Division's work on domestic aluminum and magnesium production for aircraft before noting that these projects were abandoned.[1138]

"How did you feel after the projects were completed and the war ended and the projects were no longer economically feasible?" the interviewer asked.[1139]

Phillips' response vacillated:

> Oh, I don't think it bothered me at all. Well I would have liked to have seen them adopted, of course, and used, particularly those for making aluminum. But I understand that it wasn't economical if the high-grade ore was available. And I guess during wartime we do a lot of things like that that really don't work out but they've really got to be done for backup and so on. Certainly one of the joys of working out there later was seeing some of the fertilizer things adopted and used widely. I didn't feel that way, particularly, about the military.[1140]

This was certainly not a response of moral outrage, but it seems one of mild distaste. Phillips reaped the most "joy" from the use of his program's fertilizer, followed by the

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[1136] Hignett, interview, 5–6.
[1137] Phillips, interview, 3.
[1138] Phillips, 3.
[1139] Winter, qtd. in Phillips, 4.
[1140] Phillips, 4.

aluminum that would have been used in construction. Although he initially claimed a desire to see any of his wartime work put into use, he distinguished his chemical munitions work by omission and showed, at least, a lack of pleasure from the prospect of wide military use.

We see a slightly different attitude in Travis Hignett in his discussion of nerve agent production around that time,[1141] although his response, too, vacillated a bit. At the behest of Army ordnance, Hignett recalled, "At one time over half of our people" in Chemical Development "were working on the project for making 'dichlor,'" a shortening of dichloromethyl phosphine oxide, "which was an intermediate which was used for making military gases, nerve gas, for instance," he explained,

> Of course, no use has been made of nerve gas and I hope that there won't be, but we needed [the capacity because] the Russians had taken all the people in Germany who were working on it into Russia and they were developing it and thus a deterrent to keep them from using it was to let them know that we had it, too. At least that's the theory. And I don't see anything wrong with it.[1142]

6.2.2 TVA & Institutional Dedication

Beyond material or symbolic links to the military per se, military masculinity is also expressed through dedication to an institution and/or a set hierarchy. While one might perform white-collar masculinity through magnanimous generosity to one's civic community, serving those of equal or less socioeconomic fortune, one performing military masculinity dedicates his selflessness (assumedly voluntarily) to a supposedly higher or greater thing of which he is part, from nation to fraternity to company, putting its interests

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[1141] This was probably the Phosphate Development Works (PDW) project, started in 1950, or a predecessor to it, though Hignett presented it in discussion of WWII work. See Blevins, "Phosphate Development Works Records."
[1142] Bracketed text in the original transcript, approved by Hignett. Hignett, interview, 15.

above his individual or immediate desires. Interviewed TVA employees exhibited a great deal of loyalty to the Agency and its ideals; however, their general distaste for bureaucracy and hierarchy—including the bureaucracy and hierarchy that TVA slowly developed—weakened their performance of military masculinity.

6.2.2.1 Dedication to the TVA

The TVA engineers interviewed in the early 1980s were obviously a self-selected lot when it came to institutional dedication; most were interviewed specifically because they had continued to work at TVA for multiple decades. Many of their presentations of company morale were discussed as part of white-collar masculinity in its association with intellectual interest and magnanimity—evidence of morale that was not solely due to institutional dedication. Several, however, additionally showed a conscious decision to sacrifice some personal 'druther' for the company. When Kampmeier began to consider leading the TVA, he claimed, a dedication to the Agency encouraged him to remain. By the 1953 Republican takeover of the Presidency and Congress, he explained,

> I had begun to think pretty seriously about leaving TVA. I had felt…that we had accomplished many of the things that I have been involved in heavily… But then we got into this. And I just felt like, you know, I couldn't leave then. [It would] just be like leaving a sinking ship, . . . you know, or what might prove to be a sinking ship. So I stayed around another couple of years and did leave after I was satisfied that we'd weathered the worst of those storms, too.[1143]

Chemical engineer Ray Copson also admitted to staying at the TVA longer than he had planned. When he joined the TVA in 1933, he said, "I went down there with the idea that this was a short-time job and thought I'd be doing something else in two or three years.

[1143] Bracketed text appears in the original transcript, approved by Kampmeier. Kampmeier, interview, 65.

Instead I was there 12 years."[1144] His swift rise to division Chief gives some evidence that he was not staying there of necessity; he could have found good employment elsewhere.[1145]

Rates engineer Edward Falck, on the other hand, mourned his resignation because of that same sort of dedication. He explained the sentiment:

> I was very sad because TVA was my whole life. I had stopped reading books and stopped pursuing higher degrees. I was completely absorbed by my responsibilities and work in the TVA which was seven days a week, morning, noon and night, breakfast, lunch, and dinner and it was a source of tremendous [25] ego-satisfaction…I wept many tears because of the separation from TVA. I always wanted to come back there as a Director, in a policy determining position. For many years I had that ambition.[1146]

Thomas attributed a similar kind of loyalty to Wagner and Wessenauer, pointing specifically to their remaining at the TVA as evidence. "'Red' Wagner…was dedicated throughout his life to TVA from the basic, right on up to the top job," Thomas said, "You can say the same thing for Wessenauer. He dedicated his life to his work. He filled a job--a straight line job. He didn't jump off and go to some other political appointment or something else and then come back and [be] appointed to a high spot."[1147] Mattern, meanwhile, distinguished the TVA morale of the 1940s from what he witnessed in the 1980s. "Things were a little bit different than they are right now," he mused, "Everybody who worked for TVA believed in TVA and what it was doing a hundred percent."[1148]

6.2.2.2 TVA & Bureaucracy

[1144] Copson, interview, 5.
[1145] Tennessee Valley Authority, "Biographical Sketch [Copson]."
[1146] Falck, interview, 25–26.
[1147] Thomas, interview, February 18, 1983, 25–26.
[1148] Mattern, interview, 11.

Within bureaucracy we see compartmentalization as well as hierarchy. Complete dedication to an institution (at the level of, say, a soldier's dedication to his military) must include a dedication to that institution's bureaucracy; however, TVA employees generally criticized bureaucracy, including compartmentalization and hierarchy. More specifically, they criticized the degree of TVA bureaucracy that had developed after the time period in question.

John Oliver, after sharing several anecdotes about the TVA in the 1940s and early 1950s, explained why he did so. "Now this sounds just like a bunch of foolishness, but it's not. It's a serious business. I've tried to give you a feel for the sense of togetherness that existed in TVA in those days. It is something that TVA has lost, I think…" he explained,

> TVA is more fragmented than it used to be, and people guard their own turf more than they did in the old days. I had one of the department heads make a talk before the Rotary Club here in Chattanooga some years ago, and we were talking about the old days. He said: 'Well, John, it's changed since your time. I don't know as much about what's going on in other departments as used to be the case.' I think it's too bad that the sense of community has somehow or other been diminished. I hope TVA can somehow or other recover it. I think it's essential that it does recover it.[1149]

At the time of his interview, Kampmeier was still a consultant to TVA and had recently "urged some retrenchment of staff, cutting back on staff," and he took time in the interview to explain his sentiments. "[I]t looked to me like TVA had been putting on a little fat… I think that nothing hurts morale worse than to feel that . . . not everyone is earning his keep…When you have a feeling that some of your colleagues are sitting around without enough to do and not being very productive, I think that's when morale starts to suffer."[1150]

[1149] Oliver, interview, 15–16.
[1150] Kampmeier, interview, 82.

A. B. Phillips praised the lack of TVA bureaucracy that existed when he was promoted to branch chief, likely sometime in the 1940s or early 1950s.[1151] Asked about when he thought bureaucracy was first "apparent" at TVA, Phillips dated it to "about the time Red [Wagner] retired," which was in 1977. He explained the changes he witnessed. "It was in the general time when the headquarters moved from the New Sprankle Building over to the Towers. It was in that era, and a lot of people were brought in from outside…" he recalled, "the whole thing was restructured into a bunch of offices, people came in from outside, they brought more people, and all at once you felt like you had a…great big organization…it really did, all at once it seemed to, well, blossom…"[1152]

"How did that affect the morale of people at your level?" the interviewer asked.[1153]

"It was very bad for it. It surely was," Phillips replied, "It was, you know, just a big change in the way we got things done. And to cope with that bureaucracy, then, took you away from focusing on a lot of things at home…the programs that you had to promote."[1154]

Emmons pointed to bureaucracy as one of the reasons he decided to retire early. When "they were getting into the nuclear work," he explained, despite his interest in nuclear engineering,

> I just decided I couldn't keep up with it. And I didn't want to keep up with it either….they had to set up all these checking things. You had to have people. They've got divisions now, or sections up there that I would never think of… I haven't seen a chart lately, but they had all these various things and they kept bringing up more and more and they seemed to get nowhere with it because they… Had to check this, they had to check that. Of course, they had to do a lot of

[1151] He joined TVA in 1942. Phillips, interview, 14.
[1152] Phillips, 34.
[1153] Winter, qtd. in Phillips, 34.
[1154] Phillips, 34–35.

> checking, but the things they were demanding…were just going to be so that you couldn't get anything done… probably the more weighty matter was the fact that this whole thing was just too damn complicated to work. And I still don't think it'll work.[1155]

From the start, the TVA and its employees not only idealized a lack of compartmentalization but also a flattened hierarchy or a democratic internal approach, in this way offering criticism of hierarchy.[1156] Training seminars encouraged dialogue and collegiality between engineers with different levels of experience and employment.[1157] Employee evaluation processes were designed as "a two-way street," as Case put it, encouraging employees and supervisors to engage in "a give-and-take discussion of how things are going. And how to achieve that ideal."[1158] Board meetings in the late 1940s and early 1950s would "zip right through the formal agenda and move to the informal agenda, which was the real meat of the meetings…" consisting of "an easy give-and-take in the discussions" that allowed all department heads "to express their honest opinions," according to Oliver.[1159] Although the staff adhered to Board decisions, he recalled, "During the period I was General Manager, the Board didn't try to force things upon the staff that the staff didn't want to do."[1160] By contrast, Mattern claimed that morale significantly dropped after roughly 1960 specifically because "the Board is getting into too much detail. Instead of setting policy and letting the GM and the other folks turn that into results, they keep their fingers on and dictate things…"[1161]

[1155] Emmons, interview, 50–51.
[1156] Tennessee Valley Authority and F. W. Reeves, "Confidential Summary Report"; Hargrove, *Prisoners of Myth*.
[1157] Kampmeier, interview, 7.
[1158] Case, interview, 26–27.
[1159] Oliver, interview, 16–17.
[1160] Oliver, 17.
[1161] Mattern, interview, 22–23.

This dedication to an ideal of a flattened hierarchy appeared frequently when interviewees discussed a major trait they looked for in managers: a familiarity with and understanding of the manager's employees. Emmons listed this after only experience, explaining that "their understanding of people… was one of the big things," particularly because projects in the Design Division could have multiple acceptable solutions. "[T]here's no such thing that it had to be this way. You were supposed to find out or develop the way," he explained, "So if you didn't have an understanding of what they were going through I didn't think you ought to be in charge of them."[1162] In the Chemical Division, Phillips also looked for managers who could relate well to people.[1163] Thomas emphasized that Wessenauer "knew the feel of the people."[1164]A similar sentiment prevailed in praise for certain TVA Board members. Red Wagner, for example, was often praised for rising through the ranks within the TVA; this was often linked to his understanding employees in lower positions.[1165] "[H]e had been with us…" Emmons said, "He knew the boys in all the different divisions and what not."[1166] Oliver noted, "Everybody liked him, admired him…"[1167]

Although interviewees were much more keen to emphasize and present the ideal of TVA's flattened hierarchy, there still was hierarchy to which they adhered. Wagner himself, when explaining what contributed to morale in the 1930s and 1940s, said, "Responsibility was delegated down the line; people knew what responsibilities they

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[1162] Emmons, interview, 47.
[1163] Phillips, interview, 30.
[1164] Thomas, interview, February 18, 1983, 26.
[1165] Thomas, interview, February 18, 1983; Emmons, interview.
[1166] Emmons, interview, 43.
[1167] Oliver, interview, 22.

carried and they lived up to those responsibilities very well." As a result, he reasoned, "you were given freedom to operate" within the parameters of such delegation.[1168] Mattern also noted the limitations of the popular presentation of a 'flattened hierarchy' while discussing the Board's decision to cancel a project involving Water Control Planning after WWII. "After having worked on it for years and years and seeing all the good that it would do and being fairly enthusiastic about the thing, I didn't think much of the decision," he recalled, "But, of course, they were the bosses, we weren't. We just worked there."[1169] Thomas noted general frustration with the system for selecting TVA Board members. "The senior managers have the opportunity to advance to a chief executive officer position in a private utility, while in TVA the Board of Directors are political appointments rather than up through the ranks," he explained, "None of the senior managers who have left [TVA] cared for a political appointment. Most of the people that head up private utilities are folks that came up through the ranks rather than political appointments as they are with TVA. So there is a difference."[1170]

6.2.3 TVA on Gen. Vogel

General Herbert Vogel was appointed TVA Chairman in 1954. Although he had developed a strong technical background as an Army Corps of Engineers district and regional engineer and was familiar with a wide range of water projects, it was widely understood that the Eisenhower administration appointed Vogel to the TVA in order to dismantle it. Vogel's relationship with his two fellow Board members was strained until the latter were replaced

[1168] Wagner, interview, 7.
[1169] Mattern, interview, 15.
[1170] Thomas, interview, February 18, 1983, 21.

in 1958; however, Vogel slowly learned about the Agency and became popular within it, and he and his associates were eventually successful in reconciling a fairly antagonistic Republican administration to the TVA's continued existence and development of steam power.[1171]

Although Vogel was TVA chairman after the time period analyzed in this dissertation, this section presents accounts and opinions of engineers who were at TVA during the 1933-53 period about this man. In doing so, it illuminates 1933-53 TVA engineering culture, especially as it related to military masculinity. In Vogel, one sees a figure strongly associated with military masculinity: not only was he strongly tied to the military, but he was a political appointee to head an organization he later admitted knowing little about, merely serving the national institution and its bureaucracy. The process through which he gained acceptance exhibits the TVA's blend of white-collar, frontier, and physical masculinity. Because military masculinity was a hybridization of white-collar and physical masculinity, certain elements of Vogel's military masculinity were acceptable to TVA engineers and administrators.

The TVA's general opposition to military masculinity, including bureaucracy and subservience higher institutions, and its frontier-style dedication to independence, led many at the Agency to initially fear and reject Vogel. They warmed to him because of his dedication to facts and dislike of the limelight (both valued in white-collar masculinity) and his eventual respect for TVA departments (physical) and the quality of their work

[1171] Erwin C Hargrove, "The Task of Leadership: The Board Chairmen," in *TVA: Fifty Years of Grass-Roots Bureaucracy*, ed. Erwin C Hargrove and Paul Keith Conkin (Urbana and Chicago: University of Chicago Press, 1983), 89–121.

(white-collar). For his part, Vogel warmed to TVA, interviewees believed, because of Wagner's warm reception that introduced Vogel to all the departments (performing physical masculinity in the process); because of their common dedication to facts and the language of engineering (white-collar); and because, meritocratically, that TVA departments produced quality work was sufficient for his approval (white-collar). "I mean he was a human being," Harry Case summarized Vogel's personality at one point, "A pretty good one, as a matter of fact, when you got the Corps of Engineers shell off."[1172]

As interviewees recall, Vogel's appointment was marked by feelings of enmity and distrust from both sides from the start. When then-Chairman Gordon Clapp was not reappointed, making it apparent that someone else would get the post, John Oliver resigned as General Manager. "I had worked pretty closely with him [Clapp]," Oliver explained, "and I'd decided that I was going to be in trouble, because if some new man came in, I would be tempted to tell him: 'That's not the way we do it.'"[1173] Red Wagner recalled, "We thought we would probably get someone from the Corps of Engineers and we did and that was it. We didn't know much about General Vogel until he came down here."[1174]

Although Vogel would later credit his open-door policy for part of his success in learning about the TVA,[1175] it was initially interpreted differently. "[H]e came down here [having been] told that we were a bunch of people who dealt under the table and were crooked and so on," Wagner said, "If he had an open door policy it would have been because he figured that maybe there was someone around who was unhappy about

[1172] Case, interview, 33.
[1173] Oliver, interview.
[1174] Wagner, interview, 20.
[1175] Hargrove, "The Board Chairmen."

something and would come in and tell him about it."[1176] Case supported that idea: "He was expecting to be thrown in a bunch of enemies, I suppose. And also to find a lot of people who would come to his side and against the management, which he didn't."[1177] Kampmeier mused,

> I think he came to TVA with the picture that he had been given by the Bureau of the Budget and it wasn't a flattering picture. He assumed that he had a job cut out for him to sort of do a hatchet job on TVA to get rid of a lot of people that were sabotaging the organization or what not, you know. He had a very sour picture of TVA and he figured he was being challenged with the job of making a good organization out of it.[1178]

Thomas recalled "some early concern that General Vogel would come in as a political figure and he would be an exponent of the…philosophy in which we would not be allowed to function as an efficient entity of the Federal Government as an independent corporation."[1179] Hignett simply mentioned, "I know that a lot of people had misgivings" about Vogel's arrival.[1180]

Red Wagner became General Manager with Oliver's departure, and Wagner was widely credited with "Vogel's conversion," as Kampmeier put it.[1181] "[H]e was very persuasive . . ." Kampmeier continued,

> Red didn't have quite as short a fuse as I did, and he was able to reason with Vogel pretty effectively. He made it a point of helping Vogel see TVA, took him out to the projects. He made sure that he met all the key people all through the

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[1176] Wagner, interview, 20.
[1177] Case, interview, 34.
[1178] Kampmeier, interview, 63–64.
[1179] Thomas, interview, February 18, 1983, 30.
[1180] Hignett, interview, 12.
[1181] Kampmeier, interview, 64.

> organization as fast as possible and got acquainted with the work they were doing and really gave him a good, through education pretty fast.[1182]

Oliver also pointed to Wagner's beneficial disposition. "'Red' Wagner, by temperament, was much better able to work under the situation which existed for a year or so after Vogel came in" than Oliver would have been, he felt. Oliver recalled that Director Harry Curtis dissuaded him from resigning but felt differently later on. "I saw him [Curtis] about a year and a half later and he said: 'I sure am glad you quit when you did.'" Oliver said, "When I asked why, he said: 'Well, you'd have blown your stack and we'd have had to fire you.' But things worked out very well under Wagner."[1183]

Wagner was asked about Oliver's remarks on his disposition, and he also took the opportunity to reference Curtis. "Well, I don't know," he replied to the query, "Dr. Curtis one time said he thought that General Vogel would have driven John up the wall, but he said I handled him well." Wagner continued, "I think basically the difference was that I was an engineer and John was not. I thought like an engineer and General Vogel was an engineer, and a pretty good one too, and he thought like an engineer and so we got along fairly well together."[1184]

It was not simply that the two men shared a common engineering mindset; more than one interviewee referenced Vogel's logical thinking and understanding of engineering in accounts of his growing respect for the TVA as a whole. "I think he learned pretty rapidly that TVA was really a pretty good organization already and did have some pretty good people and was doing a good job and he changed his point of view fairly rapidly. He was

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[1182] Kampmeier, 64.
[1183] Oliver, interview, 24.
[1184] Wagner, interview, 19.

a good engineer, a smart man…" Kampmeier claimed, "Whatever obligation he felt toward the Administration to modify TVA, I think he became convinced in his own mind that some of the motives behind that were not sound and some of the judgments were not sound…"[1185] Wagner believed that this conviction started with observations of TVA construction. "In the first place he had a good understanding of engineering construction and when he saw that what our engineers were building was right and good and they were doing a good job, he was for them," Wagner explained, "Building on that, I persuaded him that the rest of the organizations were just as good and he finally agreed."[1186]

From Thomas' perspective, however, Vogel always seemed to have a strong appreciation for operations. Within just a few months of Vogel's appointment, Thomas believed, "we in Operations and Power realized that he was there to be a constructive part of the team. He understood what Operations needed. He was an engineer who had practiced engineering and who, as I said, understood our problems and who worked with the Power organizations to ensure that they do a good job of administering their programs in such a manner that they would be efficient."[1187] In the Chemical Division, Hignett was likewise impressed from the start. "[H]e was quite curious about we what we were doing down here. I was glad to tell him, of course…" Hignett said, "And he seemed to be pretty well impressed by our fertilizer program and I was not unfavorably impressed by him. I thought he seemed to have an open mind, too."[1188]

[1185] Kampmeier, interview, 63–64.
[1186] Wagner, interview, 20.
[1187] Thomas, interview, February 18, 1983, 30.
[1188] Hignett, interview, 12–13.

Vogel garnered admiration for other qualities as well. His military-style dedication to an institution was lauded as soon as the TVA became the institution for which he worked, and other qualities adhered to values of white-collar masculinity. "General Vogel became a part of the TVA team. He was never the type of person that wanted to take center stage or try to demand a lot of notoriety," Thomas explained, "He was a fellow who was right in there trying to make the TVA a continuation of what had been a successful endeavor in the past and he proved to be one of the more dedicated heads of TVA. The employees came to respect him for being an able administrator in whom they had confidence in his integrity and in his work."[1189]

6.3 Conclusion

The TVA and its engineers adopted themes of frontier masculinity from the creation of TVA onward. The TVA depicted the Tennessee Valley as a frontier; in some respects, the Valley relatively fit the bill, culturally and with respect to infrastructure. The TVA also pushed intellectual frontiers in R&D as well as advances in construction and electrical generation. The Agency also interacted with the natural world in a 'heroic relationship,' predominantly as one who develops the wilderness for humans, but interviewees also discussed some 'heroic' efforts to protect the natural world.

At the same time, the TVA publicized an approach of 'grassroots democracy' to support local self-determination, signaling respect for the independence and represented lifestyle and preferences of white farmers and other white 'frontier' residents. Internally, the Agency also supported a degree of employee independence and self-determination, and

[1189] Thomas, interview, February 18, 1983, 30.

many engineers highly valued this independence, which they exercised in their TVA work, and also through occasional entrepreneurial ventures. As an institution, the TVA was fiercely defensive of its independence from Federal oversight, exhibited in recollections of its interactions with several different agencies.

With the onset of WWII, association with the military and war effort gained importance to TVA engineers as it did nationwide; however, most traits unique to military masculinity did not 'take hold' of TVA engineering culture or identity. The wartime TVA consciously linked its work to the war effort, in practice and advertising. Engineers recalled special projects they conducted for the military, occasionally with conflicted conscience. Some engineers actively pursued military service, while others did not, and many engineers above entry-level were relieved of active duty through deferments.

After the war's end, interviewees generally recalled little change in the TVA workplace, which would diminish the strength of a claim of intimate involvement in the war effort. To the degree that military masculinity involved subservience to an institution, including its bureaucracy and hierarchy, TVA engineers did not perform it. Although several expressed notable dedication to the TVA, this often involved an alignment of institutional ideals with their personal ideals or an appreciation for its ability to provide for their intellectual interests and desire to act magnanimously (while retaining agency). Their general distaste for bureaucracy and hierarchy distinguished this dedication from that associated with military masculinity.

We see an example of the relationship between TVA engineers from this era and military masculinity in their recollections of Gen. Herbert Vogel, who transferred from the

Army Corps of Engineers as appointed TVA Chairman in 1954. While interviewees recalled initially disliking the General for his political/hierarchical and military associations, the two sides bonded in common respect for certain white-collar masculine values (such as expertise) and physical masculine values (such as gestures toward a flattened hierarchy.

PART II

INTRODUCTION TO PART II

Why Harry Curtis

A case study of Harry Curtis serves a few purposes for this dissertation. First, it gives an example of an engineer who was very successful in this environment. In fact, Curtis reached the very top of the institution's hierarchy, serving as its Chief Chemical Engineer then as a consultant before joining its Board of Directors in 1949.[1190]

The case study also attempts to understand Curtis because he strongly influenced TVA personnel and policies. By the time he was nominated to the TVA Board, several considered the progress made by its Chemical Engineering Department, from research agendas to the application of results, to be "an outgrowth" of Curtis' work.[1191] He also influenced the makeup of TVA personnel, usually very directly. He recruited an entire "community" of engineers that moved from Wilson Dam to TVA facilities at Sheffield, Alabama when the dam was completed.[1192] Several former students recall his advising them to work for TVA and pulling strings to get them hired, even when he was only contracted as a consultant.[1193] While he was Dean of Engineering at the University of

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[1190] Harry A. Curtis, "Handwritten Autobiographical Account," 1962, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1191] Gordon R. Clapp to Mr. S. D. Kirkpatrick, August 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1192] Curtis, "Handwritten Autobiographical Account."
[1193] Travis P. Hignett, interview by Mark Winter, April 13, 1983, Box 5, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Ray Copson, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account"; A. B. Phillips, interview by Mark Winter, April 14, 1983, Box 9, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the

Missouri, Curtis placed up to five of his students at the TVA in a single year.[1194] In part because of the Authority's tendency to promote from within, Curtis' staffing impacted TVA personnel and, by extension, its culture for decades to come.[1195] Several of the men Curtis first hired in fall 1933, for example, were still employed at Wilson Dam by 1962 and had risen to positions of authority.[1196] Curtis also had great influence through channels of 'soft power.' For example, he was part of the lunch group that informally met with George Gant, the General Manager, at O'Neill's restaurant from 1935 onward to coordinate and communicate business.[1197]

But Curtis wasn't simply important because of the impact he had on TVA: His personality was consciously celebrated in TVA culture. As the dissertation's introduction shows, he was well respected within the TVA by his superiors, colleagues, and employees, for his personality at least as much as for his accomplishments.[1198] As a result, an analysis of this personality shows a great deal about the culture that held it in such high regard.

Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

[1194] Phillips, interview, 1.

[1195] Curtis, "Handwritten Autobiographical Account"; Hignett, interview.

[1196] Curtis, "Handwritten Autobiographical Account."

[1197] Erwin C Hargrove, *Prisoners of Myth: The Leadership of the Tennessee Valley Authority, 1933-1990* (Princeton University Press, 1994), 80.

[1198] Gordon R. Clapp to Mr. L. L. Huntington, March 5, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; John Oliver to L L Huntington, March 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; W. H. Mitchell to Harry A. Curtis, May 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Dr. Walter H. MacIntire to Harry A. Curtis, June 11, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Robert Sessions, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Clapp to Huntington, March 5, 1957; Edythe H. Taylor, "Edythe Helen Taylor Scrapbook," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Hignett, interview; Dr. Raymond L. Copson, interview by Mark Winter, September 7, 1983, Box 2, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta);

What I'm Doing

Part II goes through aspects of Harry Curtis' life and personality to show how the masculinities discussed in earlier chapters combined in an individual TVA engineer. Curtis' life story and the viewpoints he expressed over time show that his identity successfully drew on multiple masculinities to varying degrees. This identity was celebrated as a result, often explicitly for the qualities that aligned with specific archetypal masculinities or for the combination of qualities from distinct masculinities. "Dr. Curtis was a fighting intellectual," as one obituary put it, and his was a white masculinity constructed not only from national culture or engineering culture writ large, but rather assembled from overlapping identities related to Curtis' socioeconomic background, education and training, and work experience.[1199]

It's possible to explore this man's identity in such detail because of the rather revealing sources left by and about him. In 1944, the sixty-year-old Curtis began to pen a "rather brief autobiography" for his two daughters, a document to which he would add in 1954 and 1961-2, likely at his daughters' urging.[1200] This 275-page document "in his own

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Copson, "Dinner Meeting in Honor of Dr. H. A. Curtis"; Roland A. Kampmeier, interview by Mark Winter, February 15, 1983, Box 6, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Beverly Burbage, interview by Mark Winter, September 15, 1983, Box 1, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Arthur M. Miller to Dr. Harry A. Curtis, March 15, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Atmand Abrams to Dr. Harry Curtis, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323, University of Tennessee Libraries, Knoxville, Special Collections.

[1199] "Cancer Fatal to Crusader: Dr. Curtis, Former TVA Director, Dies," *The Knoxville News-Sentinel*, July 1, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

[1200] Curtis, "Handwritten Autobiographical Account"; Jeanne Webber to Harry A. Curtis, November 15, 1951, Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

unimitable [sic] handwriting" focuses on Curtis' professional activities throughout his life and provides frank reflections on many people and institutions with which he was involved.[1201] This resides in the University of Tennessee Knoxville (UTK) Special Collections in a 15-box collection including meticulously saved correspondences directly to and from Curtis throughout his life; letters and telegrams sent to U.S. Senators in support of his appointment to the TVA Board; and records of his 1957 "retirement dinner."[1202]

Further information at the UTK Special Collections comes from Edythe Helen Taylor, who worked as his secretary from 1934 to 1939 and maintained a correspondence with him and his family through at least the 1960s. Her scrapbook about Harry Curtis includes Taylor's notes on Curtis; her attempt at a personality study (mainly through anecdotal recollections); newspaper and magazine clippings related to Curtis and his family; correspondence between Taylor and the Curtis family (or about the family); and some writings by Curtis.

In the National Archives at Atlanta, one can find a cache of oral histories by former TVA employees. Conducted in the late 1980s by the TVA's history department, many of these interviews plainly describe Curtis and discuss relationships with him. From such documents, this Part pieces together the personal history of Curtis as well as the cultural contexts that shaped and were, in turn, shaped by him in his positions of power.

[1201] Curtis, "Handwritten Autobiographical Account"; Edythe H. Taylor to The Honorable Harry S. Truman, Copy, February 4, 1966, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1202] Hignett, interview.

Biographical Sketch

Pre-TVA

Harry Alfred Curtis was born on February 16, 1884 on a farm in Douglas County, Colorado.[1203] His was a farming and ranching family of at least six, which moved frequently between leased farms in Colorado before purchasing land outside of Littleton, Colorado, where Curtis attended elementary school. A good student, his gained an interest in science and technology early on.[1204] He went on to earn a B.S. in Chemical Engineering at the University of Colorado (UCO) in 1908; an M.A. there in 1910; and a Ph.D. in Chemistry at the University of Wisconsin (UW) in 1914.[1205] While at UW, Curtis was the second author of three papers published in the *Journal of Physical Chemistry*—two about the photochemical decomposition of hydrogen peroxide and one on the photolysis of potassium iodate—and these served as his Ph.D. thesis.[1206]

[1203] Curtis, "Handwritten Autobiographical Account"; D. A. Williams to Hon. Edward J. Thye, June 4, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

[1204] Curtis, "Handwritten Autobiographical Account."

[1205] Jaques Cattell, ed., "Curtis, Dean Harry A(Lfred)," in *American Men of Science: A Biographical Directory* (Lancaster, PA: The Science Press, 1949), Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Harry A Curtis, "Rapid Electrolytic Methods Applied in Analysis of Western Ores" (Master's Thesis, University of Colorado, 1910); Curtis, "Handwritten Autobiographical Account"; Williams to Thye, June 4, 1948.

[1206] J. Howard Matthews and Harry A. Curtis, "The Photochemical Decomposition of Hydrogen Peroxide I," *Journal of Physical Chemistry* 18, no. 2 (February 1, 1914): 166–78; J. Howard Matthews and Harry A. Curtis, "The Photochemical Decomposition of Hydrogen Peroxide, II," *Journal of Physical Chemistry* 18, no. 6 (June 1, 1914): 521–37; J. Howard Matthews and Harry A. Curtis, "The Photolysis of Potassium Iodate," *Journal of Physical Chemistry* 18, no. 8 (November 1, 1914): 641–52; J. Howard Matthews and Harry A. Curtis, "The Photolysis of Potassium Iodate; The Photochemical Decomposition of Hydrogen Peroxide" (University of Wisconsin, 1914), https://hdl.handle.net/2027/wu.89011296985. Despite the detailed descriptions and diagrams of the apparatuses used for each study and one description of a lecture demonstration experiment, little of Curtis-the-engineer or Curtis-the-teacher appears in these papers.

He starting teaching at UCO in 1908, first as an instructor and later as a professor of physical chemistry.[1207] He taught freshman chemistry, physical chemistry, and "some new courses" of his own design, including the history of chemistry.[1208] He published scholarly articles in chemistry and on chemistry instruction.[1209] In World War I, he served as first lieutenant in the Colorado National Guard before the U.S. Ordnance Department transferred him to work as a chemical engineer at U.S. Nitrate Plant #1 in Muscle Shoals, Alabama.[1210] After Armistice, Curtis continued his work for the Ordnance Department on nitrogen fixation in Washington, D.C.[1211] He was appointed Professor of Physical Chemistry at Northwestern University in 1919 with the intention of setting up an industrial research laboratory there. When he found it impossible to do so quickly amidst the postwar influx of students and limited resources, Curtis tactfully resigned after a year[1212] to work for the International Coal Products Corporation of Irvington, New Jersey, as Chief Chemist and then Plant Superintendent.[1213] The following year, he was appointed General Manager of its subsidiary, the Clinchfield Carbo-Coal Corporation, in southwestern Virginia.[1214] He

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[1207] Cattell, "Curtis, Dean Harry A(Lfred)"; Harry A. Curtis, "Vita Harry A. Curtis," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."
[1208] Curtis, "Handwritten Autobiographical Account," 62.
[1209] Harry A. Curtis and Robert M. Burns, "NONAQUEOUS SOLUTIONS. I. CHEMICAL REACTIONS IN ISOAMYL ALCOHOL SOLUTIONS," *Journal of the American Chemical Society* 39, no. 1 (1917): 33–38; Harry A Curtis, "Teaching Chemistry and Teaching Chemists," *Science* 46, no. 1182 (1917): 183–84.
[1210] Cattell, "Curtis, Dean Harry A(Lfred)"; Harry A. Curtis to Dr. John B. Ekeley, December 6, 1918, Box 3, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Williams to Thye, June 4, 1948; Curtis, "Vita Harry A. Curtis"; Harry A. Curtis, "Part of the Record," n.d., Box 7, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; "Dr. Harry A. Curtis Dies Here At 79," *The Knoxville Journal*, July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1211] Curtis, "Handwritten Autobiographical Account"; Curtis, "Part of the Record."
[1212] Curtis, "Handwritten Autobiographical Account," 66.
[1213] Cattell, "Curtis, Dean Harry A(Lfred)"; Williams to Thye, June 4, 1948; Curtis, "Vita Harry A. Curtis."
[1214] Williams to Thye, June 4, 1948; "Dr. Harry A. Curtis Dies Here At 79"; "Edythe Helen Taylor Scrapbook," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

published results of his work there in "The Commercial Realization of the Low-Temperature Carbonization of Coal."[1215] This period saw another educationally-oriented publication by Curtis in *Science*, explaining "The Algebraic Method of Balancing a Chemical Equation," and his first two patents, which were collaborations on recovering phenol vapors.[1216]

From 1923 to 1930, Curtis returned to academia as a Professor of Chemical Engineering at Yale University, where he established the school's Department of Chemical Engineering.[1217] While at Yale, he also published two articles in political journals on the importance of fertilizer manufacturing and the article "What Is Chemical Engineering?"[1218] He directed "about a dozen research projects" and coauthored several papers on various chemical processes (and commercial methods), likely all with students, such as "Calcium Chloride and Flue Gas used in Novel Process for Waste Disposal."[1219] He designed and

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[1215] Harry A. Curtis, "The Commercial Realization of the Low-Temperature Carbonization of Coal," *Industrial & Engineering Chemistry* 13, no. 1 (1921): 23–26; Harry A. Curtis, "THE ACTIVATION OF HYDROGEN PEROXIDE BY LIGHT," *Journal of the American Chemical Society* 42, no. 4 (1920): 720–24; R. D. George et al., "Mineral Waters of Colorado," *Colorado Geological Survey Bulletin* 11, no. 474 (1920): 202–48.

[1216] Harry A. Curtis, "The Algebraic Method of Balancing a Chemical Equation," *Science* 56, no. 1444 (1922): 258–60; Runge Walter and Harry A Curtis, Recovery of phenol vapors evolved from solvent recovery process, by phenolates, U.S. Patent 1,439,128, issued December 19, 1922; Runge Walter and Harry A. Curtis, Recovery of phenol vapors by tar oils, U.S. Patent 1,440,108, issued December 26, 1922.

[1217] Curtis, "Vita Harry A. Curtis"; Williams to Thye, June 4, 1948; "Cancer Fatal to Crusader"; Harry A. Curtis to Mr. Earle E. Daughton, October 17, 1923, Box 1, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; "Edythe Helen Taylor Scrapbook"; Curtis, "Handwritten Autobiographical Account," 68, 189.

[1218] Harry A. Curtis, "Fertilizers: The World Supply," *Foreign Affairs* 2, no. 3 (1924): 436–45; Harry A. Curtis, "Our Nitrogen Problem," *The Annals of the American Academy of Political and Social Science* 112, no. 1 (1924): 173–80, https://doi.org/10.1177/000271622411200107; Harry A Curtis, "What Is Chemical Engineering?," *Industrial & Engineering Chemistry* 19, no. 2 (1927): 257–58.

[1219] Curtis, "Handwritten Autobiographical Account," 68; Harry Alfred Curtis, "Studies of Tar from a Commercial Low Temperature Retort" (Yale University, 1926); RL Copson and HA Curtis, "Calcium Chloride and Flue Gas Used in Novel Process for Waste Disposal," *Chemical and Metallurgical Engineering* 37 (1930): 167–69; Henry L. Kellner and Harry A. Curtis, "Deposition of Black Copper Oxide on Brass," *Industrial & Engineering Chemistry* 22, no. 12 (1930): 1321–24; Alpheus M Ball and Harry A Curtis, "A Study of Certain American Coals at Temperatures near Their Softening Points," *Industrial & Engineering Chemistry* 22, no. 2 (February 1930): 137–40.

taught two additional classes in fuel technology and in chemical engineering economics.[1220] He also took on numerous side jobs and projects. These included working as Chief of the Nitrogen Survey for Secretary of Commerce Herbert Hoover; consulting for the U.S. Department of Agriculture (USDA) and its Fixed Nitrogen Research Laboratory (FNRL); representing the USDA at the 1928 International Nitrogen Conference in Europe; working on the Muscle Shoals Inquiry commissioned by President Calvin Coolidge; and chairing the Division of Chemistry and Chemical Technology for the National Research Council.[1221] In 1931, Curtis gracefully left Yale to become Chief of Research and Development Laboratories for the Vacuum Oil Company in Paulsboro, New Jersey, where he remained until recruited to the TVA in 1933.[1222] Two years after his departure from Yale, Curtis published his edited volume *Fixed Nitrogen*, a product of nine year's work, which would become a classic in the field.[1223]

TVA and Beyond

Curtis served as Chief Chemical Engineer of the TVA from 1933 to 1938. In this position, he studied the U.S. Nitrate Plant No. 2, a large WWI-era cyanamid plant at Muscle

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[1220] Curtis, "Handwritten Autobiographical Account," 68.
[1221] Cattell, "Curtis, Dean Harry A(Lfred)"; "Edythe Helen Taylor Scrapbook"; Curtis to Daughton, October 17, 1923; "Dr. Harry A. Curtis Dies Here At 79"; Curtis, "Handwritten Autobiographical Account"; Curtis, "Vita Harry A. Curtis"; Curtis, "Part of the Record"; Williams to Thye, June 4, 1948.
[1222] Harry A. Curtis to Marion E. Dice, January 21, 1931, Box 1, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account"; Williams to Thye, June 4, 1948; Curtis, "Vita Harry A. Curtis"; Livingston Farrand to Harry A. Curtis, September 29, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Farrand to Curtis; Harry A. Curtis to Dr. Livingston Farrand, November 4, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Dr. Livingston Farrand, August 7, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1223] Curtis, "Handwritten Autobiographical Account," 71, 101, 105; Dr. Colin A. Bueble, cited by Taylor, "Edythe Helen Taylor Scrapbook"; The book was translated into Chinese in 1941, and it was reprinted in 1955, 1960, 1977, and 2013. See "Fixed Nitrogen: Other Editions," Google Books, accessed March 16, 2020, https://www.google.com/books/edition/_/mCNyngEACAAJ?hl=en&kptab=editions.

Shoals, for possible uses. Curtis proposed and oversaw an "ambitious plan" to convert it to produce phosphatic fertilizer.[1224] He contracted the plant's rock phosphate supply, which reportedly included supervising prospecting in the middle Tennessee phosphate fields and elsewhere.[1225] During this time, Curtis also helped establish UTK's chemical engineering department and helped to staff and equip it by contracting TVA work to it.[1226] Curtis recruited heavily within his own networks to largely staff the Chemical Engineering Department, which was spread between Muscle Shoals and the TVA lab at UTK.[1227] He commuted regularly between Knoxville and Muscle Shoals, occasionally checking on a pilot blast furnace program contracted to FNRL in Washington, D.C., and making a few trips to New York and to phosphate fields out West.[1228] During this time, Curtis authored or coauthored several papers in *Chemical and Metallurgical Engineering* and *Industrial & Engineering Chemistry*, almost all on the manufacture or conversion of phosphorus or its

[1224] Curtis, "Handwritten Autobiographical Account," 242, 88–97; Hignett, interview.
[1225] Curtis, "Handwritten Autobiographical Account."
[1226] Julian Granger, "Dr. Curtis Still Tough Despite the Tears," February 12, 1960, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."
[1227] Curtis, "Handwritten Autobiographical Account."
[1228] Curtis; Hignett, interview; "Dr. Harry A. Curtis Dies Here At 79"; Taylor, "Edythe Helen Taylor Scrapbook"; Curtis to Farrand, November 4, 1933.

derivatives.[1229] He was assigned at least two dozen patents on this work, at least ten in 1936 alone.[1230]

The TVA Chemical Engineering Department was well established by the time Curtis resigned in 1938 to become Dean of the University of Missouri's (UMO's) College of Engineering.[1231] He served as Dean for ten and a half years; meanwhile, he consulted for the TVA Chemical Engineering department and for other public and private institutions.[1232] During World War II, he consulted for the Commerce Department and U.S. Geological Survey on potash and phosphate development; served on an Advisory Board for Utilization of Surplus Industrial Facilities to the Army Chief of Engineers; and spent 5 months in 1945 in Europe on an Army technical mission.[1233]

[1229] Harry A Curtis, "TVA Makes H3PO2 Electrically at Wilson Dam," *Chemical and Metallurgical Engineering* 42, no. 320 (1935): 4; James H Lum and Harry A Curtis, "Coal Carbonization—The Plastic Stage," *Industrial & Engineering Chemistry Analytical Edition* 7, no. 5 (1935): 327–33; HA Curtis and AM Miller, "Operating Observations at TVA Fertilizer Plant," *Chemical and Metallurgical Engineering* 43, no. 408 (1936): 193–97; HA Curtis, AM Miller, and JN Junkins, "TVA Estimates Favorable Costs for Concentrated Superphosphate," *Chemical and Metallurgical Engineering* 43 (1936): 583; HARRY A Curtis, RAYMOND L Copson, and ARMAND J Abrams, "Metaphosphate Investigation Aims at Cheaper Fertilizer," *Chemical and Metallurgical Engineering* 44, no. 3 (1937); Harry A Curtis et al., "Fertilizer from Rock Phosphate Conversion by Fusion and Treatment with Water Vapor," *Industrial & Engineering Chemistry* 29, no. 7 (1937): 766–71; H. A. Curtis et al., "Full-Scale Production of Metaphosphate Achieved at Wilson Dam," *Chemical and Metallurgical Engineering* 45 (1938): 318–22; HA Curtis, AM Miller, and RH Newton, "Process Developments at TVA Phosphoric Acid Plant," *Chemical and Metallurgical Engineering* 46 (1938): 193–97; HA Curtis, AM Miller, and RH Newton, "TVA Reviews Its Experience in Phosphate Smelting," *Chemical and Metallurgical Engineering* 45 (1938): 116–20; Harry A. Curtis, "WESTERN PHOSPHATE DEPOSITS," *Industrial & Engineering Chemistry* 30, no. 9 (1938): 973–79; HARRY A CURTIS et al., "FULL-SCALE PRODUCTION OF CALCIUM METAPHOSPHATE ACHIEVED AT WILSON DAM," *Transactions of the American Institute of Chemical Engineers* 34 (1939): 287.

[1230] (Curtis 1936a; Curtis and Abrams 1936; Curtis 1936b; 1936c; 1936d; 1936e; 1936f; 1936g; 1936h; 1936i; 1937a; 1937b; 1937d; 1937c; 1937e; 1937f; 1937g; 1938a; 1938b; 1938c; Curtis and Copson 1938; 1939; Curtis 1939a; Curtis and Heaton 1939; Curtis 1939b)

[1231] "Dr. Harry A. Curtis Dies Here At 79"; Curtis, "Part of the Record"; Curtis, "Handwritten Autobiographical Account."

[1232] Curtis, "Handwritten Autobiographical Account"; Cattell, "Curtis, Dean Harry A(Lfred)"; Curtis, "Part of the Record"; Harry A. Curtis to Mrs. Edythe H. Taylor, January 18, 1939, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

[1233] Curtis, "Part of the Record"; Curtis, "Handwritten Autobiographical Account."

Curtis was appointed to the TVA Board of Directors in February 1949 and served until May 1957.[1234] This he claimed to be his "fourteenth and last job for the Federal government."[1235] Curtis continued to work closely with TVA chemical engineering projects, frequently traveling to Muscle Shoals.[1236] He continued to publish articles on chemical engineering and phosphorus alongside administrative articles on the TVA and the Valley overall.[1237]

Curtis had an active retirement, taking several assignments as an engineering consultant, pursuing various hobbies, and frequently traveling.[1238] Only an eye injury in 1960 seemed to slow down the 76-year-old, forcing him to end his main consulting job.[1239] Curtis resided in Knoxville until he passed away in 1963, leaving behind his wife, two daughters, and five grandchildren.[1240]

[1234] Curtis, "Handwritten Autobiographical Account"; Curtis, "Part of the Record."
[1235] Curtis, "Handwritten Autobiographical Account," 269.
[1236] Curtis, "Handwritten Autobiographical Account."
[1237] HA CURTIS, "THE ELECTRIC FURNACE AS A PRODUCER OF ELEMENTAL PHOSPHORUS," *JOURNAL OF THE ELECTROCHEMICAL SOCIETY* 100, no. 4 (1953): C81–89; HA CURTIS, "ELECTROPROCESS PLANTS IN THE TVA POWER SERVICE AREA," *JOURNAL OF THE ELECTROCHEMICAL SOCIETY* 101, no. 5 (1954): C119–27; Harry A. Curtis, "The TVA and the Tennessee Valley: What of the Future," *Land Economics* 28, no. 4 (1952): 333–40; H. A. Curtis, "Utilization of Water in the Tennessee Valley," *Alabama Academy of Science Journal* 25 (1953): 35–37.
[1238] Powell Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis," *The Knoxville News-Sentinel*, March 10, 1963, sec. B-2, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; "Dr. Harry Curtis," July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; "Cancer Fatal to Crusader"; "Dr. Harry A. Curtis Dies Here At 79"; Curtis, "Handwritten Autobiographical Account"; Harry A. Curtis to John R. Kuebler, June 27, 1958, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Edythe Taylor, Christmas card, 1959, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1239] Curtis, "Handwritten Autobiographical Account"; Granger, "Dr. Curtis Still Tough Despite the Tears"; "Dr. Harry A. Curtis Dies Here At 79."
[1240] Taylor, "Edythe Helen Taylor Scrapbook"; "Dr. Harry Curtis"; "Cancer Fatal to Crusader"; "Dr. Harry A. Curtis Dies Here At 79."

CHAPTER 7. CURTIS AND WHITE-COLLAR MASCULINITY

This chapter primarily draws on correspondence and the autobiographical manuscript in Harry Curtis' records to inspect his performance of white-collar masculinity. It initially proceeds chronologically, pointing out the expression of notable traits throughout his life. Because white-collar masculinity involves expression of personal civility and theoretical dedication to meritocracy while relying on systemic inequality, the latter portion of the chapter is devoted to an inspection of Curtis' proclaimed views and interactions involving racial and ethnic minorities and white women.

7.1 Curtis and White-Collar Masculinity

As discussed in chapter 2, several traits are often associated with white-collar masculinity. These include one's expertise in a given field; an association with academia or formal education; an interest in intellectual pursuits; a dedication to meritocratic ideals; magnanimity; idealism; and an association with a high socioeconomic class. Harry Curtis was inarguably linked with white-collar masculinity through his expertise in chemical engineering and his long and successful career in academia. He also showed an interest in intellectual pursuits, reading widely outside his field and relishing witty dialogue. Although he steered clear of certain 'high society' associations (as discussed in chapter 8), he showed an acceptable amount of wealth and cultural 'class' for his station, and he was praised for his impartiality and magnanimity.

7.1.1 Childhood

Curtis came to love intellectual pursuits in childhood and was notably bright even then. He couldn't start school until age eight-and-a-half; however, family lore indicates that he had learned to read before then, and he was transferred to the third grade by the end of the schoolyear.[1241] He had mixed feelings about the quality of the school in hindsight; significantly, his main sources of inspiration came in his free time through informal tinkering.[1242] "[I]t was two of my schoolmates who awakened interests in me that were to influence my life deeply in the decades then ahead...they opened for me the doors to a wonderland," Curtis later wrote.[1243] One had found a book on Thomas Edison and his many inventions, piquing the boys' interest in electricity. "A friendly station master" let them examine the only electrical instruments they knew, the telegraphic instruments at the local train station. "I do not know how we managed it," Curtis wrote, "but in a short time we had set up electric cells that actually put out electric current, and electromagnets that would pick up iron nails, and crude telegraphic instruments that actually worked. It was all very exciting to us."[1244] Another friend (who "seemed to know everything that could be known" because he had lived in Brooklyn, New York) shared his knowledge of electric dynamos and chemistry.[1245] He and Curtis set up a chemistry lab in his woodshed, first with household and farm chemicals, and later locating textbooks and chemicals for purchase.[1246]

[1241] Harry A. Curtis, "Handwritten Autobiographical Account," 1962, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Steve Palitz, "My Grandpa," January 23, 1962, Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1242] Curtis, "Handwritten Autobiographical Account."
[1243] Curtis, 25.
[1244] Curtis, 24–25.
[1245] Curtis, 26.
[1246] Curtis, "Handwritten Autobiographical Account."

Curtis made pinhole cameras and developed photographs as a child, and he "acquired a box camera" when he was about 13 years old.[1247] He also "acquired" a small microscope from a *Youth's Companion* magazine and quickly combined it with his camera "to make photomicrographs long before I knew the name for such pictures."[1248] As a teenager, he damaged an eye by watching a solar eclipse through insufficiently smoked glass.[1249]

Although he was raised on a farm and often stressed the limited material resources of his humble beginnings, Curtis clearly had enough resources for a firm educational and cultural foundation to develop a white-collar masculine performance. This included the time and energy available to devote to learning in and out of school, as well as the means to access and own electrical parts, textbooks, lab-grade chemicals, cameras, and a microscope.

7.1.2 Academia

Curtis had a long and successful career in academia. After leaving home to attend high school, he finished the four years of curriculum in two years, and he "ranged far ahead" of the chemistry curriculum.[1250] He won a scholarship to attend the University of Colorado (UCO) and, during those "very active, happy and intellectually profitable years" as a chemical engineering undergraduate, his eagerness gained the attention and lifelong support of his chemistry professor John B. Ekeley.[1251]

[1247] Curtis, 28–29.
[1248] Curtis, 29.
[1249] Julian Granger, "Dr. Curtis Still Tough Despite the Tears," February 12, 1960, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1250] Curtis, "Handwritten Autobiographical Account," 31.
[1251] Curtis, 33–34; John B. Ekeley to Eta Chapter of Alpha Chi Sigma, April 15, 1940, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

Curtis had already acquired some teaching experience when he'd stepped out of high school for a year to raise funds as a grammar school teacher, and he spent nearly a decade working in academia after undergraduate. Ekeley helped him obtain an instructorship in the UCO Chemistry Department immediately after earning his B.S. in 1908.[1252] Curtis briefly left UCO in 1913-1914 when he became a teaching fellow at the University of Wisconsin; upon earning his Ph.D. at Wisconsin, Dr. Curtis returned to the UCO chemistry faculty, eventually becoming a professor of physical chemistry.[1253]

Although he frequently bounced between academia and other lines of work, Curtis remained interested in taking academic positions. This was the case even when he worked in elsewhere, and despite his awareness that "College salaries are...much below what industry pays for men of similar training and experience."[1254] Curtis took a leave of absence for military service when the U.S. entered WWI; however, shortly after Armistice, Curtis wrote Prof. Ekeley. He wished to return to his professorship, though he expressed awareness that the UCO might be burdened by the sudden return of so many.[1255] Indeed, that was the case: The department couldn't rehire him as a professor, forcing Curtis to take his first job in industry.[1256] Again, during a 1933 job search, Curtis sought out an academic position, openly admitting that he'd "been offered an industrial position and shall no doubt

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[1252] Curtis, "Handwritten Autobiographical Account."
[1253] Harry A. Curtis, "Vita Harry A. Curtis," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."
[1254] Curtis, "Handwritten Autobiographical Account," 43.
[1255] Harry A. Curtis to Dr. John B. Ekeley, December 6, 1918, Box 3, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1256] John B. Ekeley to Harry A. Curtis, December 14, 1918, Box 3, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Edythe H. Taylor, "Edythe Helen Taylor Scrapbook," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

be able to locate again in industry if I care to do so, but would prefer to return to a university environment."[1257] Shortly afterwards, he accepted his first position with the TVA; however, Curtis continued to express an interest in hearing about academic job openings, doing so despite planning to stay with the TVA for "at least the next few years."[1258] Years later, once Curtis was well established as a UMO Dean, a friend recalled that Curtis had once "agreed that to be Dean of Engineering in an important university is just about the top post to which any sane chemical engineer could aspire."[1259]

His love for the academic environment certainly illustrates his identification with traits of white-collar masculinity; his reasons for *leaving* academia often performed this identity as well. Curtis sought intellectual progress at all turns and was not content to idle. That he left the Northwestern faculty after a single semester may, at first blush, show disinterest in or a contentious nature with academia; however, it was apparently because he couldn't pursue his educational goals fast enough. "[T]he big inrush of students" after WWI caused "overcrowding in the department of chemistry which led to lack of space, lack of funds, and lack of time in which to develop the industrial research center that I had hoped to launch[.]"[1260] One could easily argue that this *does* show a distaste for the reality of academia; that said, it speaks to a quality even more closely intertwined with white-collar masculinity: a dedication to intellectual pursuits to an extent that one may discount the practical. Years later, perhaps illustrating the same quality, Curtis left the Yale faculty

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[1257] Harry A. Curtis to Dr. Livingston Farrand, August 7, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1258] Harry A. Curtis to Dr. Livingston Farrand, November 4, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1259] S. D. Kirkpatrick to Dr. Harry A. Curtis, May 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1260] Curtis, "Handwritten Autobiographical Account," 68.

once he had developed a chemical engineering course and established the department, deciding that his "job" was complete.[1261]

7.1.3 Educational Reform

Curtis was still more strongly identified with academia, idealism, and magnanimity through the educational development and reform of chemical engineering. He entered the field in its infancy, recalling that, when he "registered for a newly organized curriculum called Chemical Engineering" as a UCO undergraduate, "I was blissfully unaware…that no one on the faculty had the slightest knowledge of this branch of engineering. In fact there were several other universities in the county at that time that had set up chemical engineering curricula with no knowledge of the subject. There were no textbooks or handbooks available."[1262] He followed a curriculum of mechanical engineering "plus a lot of chemistry courses" for his B.S.[1263] Although the field made progress in the following decades, Curtis later reflected that this was mostly "in the *practice* of chemical engineering. As of 1933, and for a long time thereafter, chemical engineering education in the United States was, generally speaking, in a very unsatisfactory condition."[1264]

Curtis pointedly distinguished himself as a chemical engineer and not a chemist, even doing so during his 1933 job hunt—"not a very promising time" to be on the job market, it was remarked—and despite the fact that he claimed to be interested in any

[1261] Curtis, 72.
[1262] Curtis, 33–34.
[1263] Curtis, 34.
[1264] Emphasis mine. Curtis, 197.

academic position of which he could be notified.[1265] He thought it unfortunate that the chemists heading chemical engineering programs in the early 20th century "were inclined to regard engineering as an inferior discipline, more a matter of manual skill than of intellectual activity."[1266] At best--Curtis mentioned more than once--such program heads were limited to "the washtub idea": "the curious idea that the essential difference between chemistry and chemical engineering lay in the difference in the quantity of chemical handled. If a chemical reaction were carried out elegantly in beakers and flashes, that was chemistry; but if carried out in a washtub with a wooden paddle as a stirrer, that was chemical engineering."[1267] When Curtis set up his chemical engineering laboratory at Yale in 1923, he recalled, the head of the chemistry department inspected it and remarked, "Well, your graduates should at least be able to earn their living as pipefitters."[1268]

He worked to formalize and improve chemical engineering education through his academic positions and through professional societies. His was a "long but finally successful struggle to get chemical engineering set up as a separate department" while at Yale.[1269] At the TVA in the 1930s, Curtis helped UTK develop its chemical engineering department, even recruiting two high-quality educators from Michigan to the department.[1270] As Dean of Engineering at UMO, he reformed the entire engineering

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[1265] Curtis to Farrand, August 7, 1933; Livingston Farrand to Harry A. Curtis, September 29, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis to Farrand, November 4, 1933.
[1266] Curtis, "Handwritten Autobiographical Account," 178.
[1267] Curtis, 178–79, 191.
[1268] Curtis, 178.
[1269] Curtis, 69, 188–90.
[1270] Powell Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis," *The Knoxville News-Sentinel*, March 10, 1963, sec. B-2, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Granger, "Dr. Curtis Still Tough Despite the Tears"; "Curtis Due Dougherty Award at UT," *Knoxville Journal*, February 12, 1960, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Taylor, "Edythe Helen Taylor Scrapbook."

program, from changing tenure requirements and reorganizing the Engineering Experiment Station to modernizing curricula, equipment, and laboratory facilities.[1271] Returning to the TVA as Director, he reportedly recruited quality leadership for UTK's chemical engineering programs and for other universities in the Southeast, which naturally would have helped the TVA.[1272]

Curtis also worked through the American Institute of Chemical Engineers (AIChE) to have acceptable chemical engineering programs accredited, doing so first as an active member, then Council member, then Vice President of the AIChE.[1273] Appointed Chairman of the AIChE committee on chemical engineering in 1932, Curtis visited the 19 programs that had been AIChE accredited so far and, "astonished" at the lack of chemical engineering curricula or faculty, warned them that accreditation might be withdrawn.[1274] He continued to visit and advise them and other schools whose programs sought accreditation, "enabl[ing] me to further the move toward making chemical engineering worthy of bearing the name of an engineering society."[1275]

When the Engineers Council for Professional Development (ECPD) launched its own accreditation program in 1935 (with reluctant cooperation from AIChE), Curtis joined its inspection committee as an AIChE representative and came to enthusiastically support

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[1271] Huber Ogilvie Croft, *A Brief History of the College of Engineering, University of Missouri, Columbia, 1940-1967* (University of Missouri–Columbia, 1968), 14, 31, 73; Curtis, "Handwritten Autobiographical Account," 77–78.
[1272] "Cancer Fatal to Crusader: Dr. Curtis, Former TVA Director, Dies," *The Knoxville News-Sentinel*, July 1, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1273] Jaques Cattell, ed., "Curtis, Dean Harry A(Lfred)," in *American Men of Science: A Biographical Directory* (Lancaster, PA: The Science Press, 1949), Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Vita Harry A. Curtis"; Curtis, "Handwritten Autobiographical Account."
[1274] Curtis, "Handwritten Autobiographical Account," 191.
[1275] Curtis, 192.

this program.[1276] In doing so, however, he claims that the AIChE program deteriorated and "reaped a great deal of ill will" with ECPD and many engineering departments.[1277]

7.1.4 Expertise

At the heart of white-collar masculinity is a degree of expertise in one's field of endeavor, and Curtis was thoroughly identified as an expert. By the time of his nomination to the TVA Board, many believed Curtis to be at the pinnacle of his field as a scientist, educator, and engineer, "among the few foremost leaders in America" in chemistry and chemical engineering, and contributor of "remarkable scientific technological advances" with national impact and international renown.[1278] Dozens of letters and telegrams made their way to U.S. Senators, urging them to approve the appointment by providing the highest praise as well as information on his achievements and "his career in both public and private service, which can be described as nothing less than distinguished."[1279]

[1276] Curtis, 199–201.
[1277] Curtis, 201.
[1278] E. G. Peterson to Sen. Elbert Thomas, May 5, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Charles O. Brown to Sen. Kenneth M. Ives, June 2, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Arthur M. Miller to Miss Marguerite Owen, July 16, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Mr. Walter J. Murphy, July 26, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; "Dr. Harry Curtis," July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Mr. D. O. Myatt to The Hon. Chapman Revercomb, June 16, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Arthur M. Miller to Hon. Chapman Revercomb, May 23, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Walter N. Jones to The Honorable Chapman Revercomb, May 24, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Arthur M. Miller to Dr. Harry A. Curtis, March 15, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Atmand Abrams to Dr. Harry Curtis, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323, University of Tennessee Libraries, Knoxville, Special Collections.
[1279] Myatt to The Hon. Chapman Revercomb, June 16, 1948; Peterson to Thomas, May 5, 1948; Miller to Revercomb, May 23, 1948; Jones to The Honorable Chapman Revercomb, May 24, 1948; Brown to Ives, June 2, 1948.

The authors of those communications were obviously motivated to shows Curtis in the best possible light; however, this wasn't idle praise. Curtis was given honors befitting an expert throughout his career. He received awards for excellence in engineering from UCO, UMO, his national chemical engineering professional fraternity Alpha Chi Sigma, and the state of Tennessee.[1280] He also received an honorary doctorate from UCO in 1930.[1281] More substantial evidence of Curtis' expertise can be seen in several of the jobs he took on over the years.[1282] One may note, for instance, that he was one of five men selected by President Hoover to conduct the Muscle Shoals Inquiry in 1925.[1283]

Curtis' expertise was displayed in another material way through his publications and patents. "I have, of course, published many articles in technical journals, contributed to the *Encyclopaedia Brittanica* [sic], and taken out some twenty-odd patents concerning phosphates," Curtis recollected in his autobiographic account, in something of a cavalier side note to his account of solely the work he did on phosphatic processing.[1284] While at Yale in 1923, the American Chemical Society contracted him to write a monograph on fixed nitrogen. Over time, Curtis authored portions of the book, decided to seek contributions from several others in the field for a "more valuable" product, and edited the

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[1280] Granger, "Dr. Curtis Still Tough Despite the Tears"; "Dr. Harry A. Curtis Dies Here At 79," *The Knoxville Journal*, July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis"; "Cancer Fatal to Crusader"; Curtis, "Vita Harry A. Curtis"; Taylor, "Edythe Helen Taylor Scrapbook."
[1281] Cattell, "Curtis, Dean Harry A(Lfred)"; Curtis, "Vita Harry A. Curtis."
[1282] See the Introduction to Part II for an overview of Curtis' career.
[1283] Cattell, "Curtis, Dean Harry A(Lfred)"; Curtis, "Handwritten Autobiographical Account" Appointment to the TVA Board can also be evidence of expertise; however, Curtis himself often grumbled that the Board was often staffed through "political appointments." See "Handwritten Autobiographical Account" and; Harry A. Curtis, "Adventures in Faith" (Valley-Wide Meeting of the Joint Cooperative Conferences, Gatlinburg, TN, March 21, 1957).
[1284] Curtis, "Handwritten Autobiographical Account," 162.

volume. Finally published in 1932, *Fixed Nitrogen* was considered "a classic" in the field and remained in print abnormally long for a technical work.[1285]

Also in the 1920s, "impressed by the great lack of textbooks in the fields," Curtis worked with another chemical engineer to pitch and create a book series with the McGraw Hill Book Company, albeit unsuccessfully.[1286] While at the TVA, Curtis worked hard to publish its chemical engineering work, and he obtained at least 23 patents, alone or in collaboration, a record for the Agency.[1287] That said, his Secretary Edythe Taylor recalled, many of the patents filed while he was Chief Chemical Engineer "were confidential because many of his technical ideas were tested on a small scale there. Many times he asked me to witness an idea by signing his handwritten copy in a book he kept at his desk at all times."[1288] As a result, his prolific patenting may not have been very conspicuous until later in his life.

7.1.5 Breadth of Knowledge

The breadth of Curtis' knowledge and intellectual pursuits also firmly associate him with white-collar masculinity. For one, he had broad technoscientific expertise. As a TVA Board

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[1285] Harry A. Curtis, "Handwritten Autobiographical Account," 1962, 71, 101, 105, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Dr. Colin A. Bueble, cited by Edythe H. Taylor, "Edythe Helen Taylor Scrapbook," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections. ; Dr. Raymond L. Copson, interview by Mark Winter, September 7, 1983, 26, Box 2, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta). The book was reprinted in 1941, 1955, 1960, 1977, and 2013. See "Fixed Nitrogen: Other Editions," Google Books, accessed March 16, 2020, https://www.google.com/books/edition/_/mCNyngEACAAJ?hl=en&kptab=editions.
[1286] Curtis, "Handwritten Autobiographical Account," 177.
[1287] Robert Sessions, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; "Dr. Harry Curtis"; Granger, "Dr. Curtis Still Tough Despite the Tears."
[1288] Taylor, "Edythe Helen Taylor Scrapbook," 4.

member, Curtis impressed employees with the broad technoscientific knowledge base he exhibited during reviews of the agricultural engineering research program.[1289] "...I was always amazed that he seemed to be as much at home with a theoretical chemist in fundamental research as he was in plant operations. He had a real wide span of knowledge and expertise," A. B. Phillips recalled decades later, "At least he seemed to understand everything that was going on and make comments about it."[1290]

His interest in non-technical areas, however, associated Curtis with white collar masculinity even more strongly. He started to consciously pursue a liberal education as an undergraduate, he later recalled, when he saw the "limited…scope" of the engineering curriculum there. Although Curtis had enjoyed extracurricular reading in high school, "I now deliberately planned my reading in non-technical fields. I found time for an occasional course in philosophy and history. I deliberately sought acquaintance with professors in literature, history, languages."[1291] In his senior year at UCO, Curtis was the manager of the college's *Silver and Gold* newspaper; three years later, he started the *Colorado Alumnus* magazine.[1292]

As a professor, Curtis occasionally taught non-technical courses. At UCO, he created & taught a course in the history of chemistry alongside his chemistry courses.[1293] While at Yale, he created & taught a course in chemical engineering economics in addition

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[1289] A. B. Phillips, interview by Mark Winter, April 14, 1983, Box 9, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[1290] Phillips, 12.
[1291] Curtis, "Handwritten Autobiographical Account," 58.
[1292] Curtis, "Vita Harry A. Curtis"; Curtis, "Handwritten Autobiographical Account," 63.
[1293] Curtis, "Handwritten Autobiographical Account," 62.

to his other courses.[1294] Outside of academia, Curtis immensely enjoyed reading well into retirement, at which point he was reportedly "averaging about one book a week in a pattern which usually called for reading several books in the same field."[1295] Curtis also enjoyed philosophy and was considered a philosopher by some who knew him.[1296] When the injury of his one strong eye in 1960 severely impaired his vision, the convalescing Curtis tried allowing a friend to read him "a philosophical article by Dr. J. Robert Oppenheimer, the famed physicist. It didn't work for, as Dr. Curtis observes, Dr. Oppenheimer's writings on philosophy are so profound that one must pause from time to time to reflect upon their meaning."[1297] Afterwards, Curtis was limited to reading with his formerly weaker eye, but he persisted in reading for just one hour each day.[1298]

Another signal of Curtis' non-technical aptitude was his notorious wit. His personal correspondences were rich with irony, satire, and general goofiness.[1299] Understatement was a favorite of his, as when rehabilitation of U.S. Nitrate Plant No. 2 was complete and Chief Chemical Engineer Curtis was about to have the furnaces fire up. His Secretary Edythe Taylor recalled that at that point, "he wrote Dr HA Morgan [in Knoxville] & stated that if he saw a large cloud of smoke billowing from the direction of Muscle Shoals he

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[1294] Curtis, 69.
[1295] "Cancer Fatal to Crusader"; Granger, "Dr. Curtis Still Tough Despite the Tears"; Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."
[1296] Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1297] Granger, "Dr. Curtis Still Tough Despite the Tears."
[1298] Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."
[1299] Harry A. Curtis to Hollis W. Harris, May 22, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Mr. J. J. Droher, May 10, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Taylor, "Edythe Helen Taylor Scrapbook," 4; Harry A. Curtis to Edythe Taylor, Christmas card, 1959, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."

would know that [Curtis] had failed in his task."[1300] He engaged in wordplay with his colleagues and friends, and he frequently recounted funny memories and inside jokes in his exchanges with them.[1301] ("Do you perchance have a pet lamb who might fall into the fish pool?" he once asked an old friend.[1302]) The correspondences read aloud during Curtis' 1957 retirement dinner all "ha[d] in common a touch of humor," as Sessions put it.[1303] In one, Curtis describes himself as "a noted hell-raiser," pens a rhyming poem about colleagues' delayed responses, and ridicules the technically incorrect artwork in a recent periodical.[1304] In another, the Chief Chemical Engineer informs a fellow engineer, Roy Heaton, that Heaton will soon become the author of a technical article—one that Curtis will compose, since "I...assume that your [writing] style is at least as bad as mine..."[1305]

All joking aside, Curtis bemoaned the reputation that engineers had earned for getting "hopelessly lost in any conversation on non-technical subjects."[1306] He objected to the idea that simply adding a few humanities courses to engineering curricula would provide a liberal education; it was not enough.[1307] During classes and individual meetings, he encouraged each student to consciously take charge of "his own technical and liberal education," planning ahead and pursuing it "by all the means he could come by—the

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[1300] Taylor, "Edythe Helen Taylor Scrapbook," 4.
[1301] W. H. MacIntire to Harry A. Curtis, February 12, 1949, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Prof. Robert M. Boarts, June 2, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1302] Curtis to Boarts, June 2, 1948.
[1303] Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1304] Harry A. Curtis to J. H. Walthall, May 2, 1951, qtd. in Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1305] Harry A. Curtis to Roy Heaton, October 27, 1937, qtd. in Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1306] Curtis, "Handwritten Autobiographical Account," 56.
[1307] Curtis, 56–57.

required classes in his curriculum, other classes available to him, association with faculty folks and students in a wide range of disciplines, and, above all, reading widely."[1308] Curtis admitted that it was "a long process" to pursue a broad education in addition to specialization and that students tended to delay it despite wishing to become liberally educated.[1309] He blamed engineering professors for this in part, recounting an "experiment" in which he gave poorly written engineering papers "zero until the paper [was] submitted in reasonably correct English," at which point all of the papers submitted improved significantly. "I have often thought that if every teacher of engineering courses would also constitute himself a teacher of English," Curtis posited, "there might be less reason for the often-expressed complaint that engineers cannot use their mother tongue effectively."[1310]

7.1.6 Fulfilment in Teaching

Beyond the joy he found in his own intellectual development and encouraged in others, Curtis simply found fulfillment in teaching and in the development of educational programs. "If you teach long enough, you don't get a lot of salary, but you get a lot of other satisfactions," he reminisced to a reporter in 1960.[1311] He also planned to share "what I found of lasting satisfaction in teaching" in his autobiographical manuscript; however, he never got around to sharing what, exactly, that was, beyond simply "lik[ing] to teach."[1312] Rather, he elaborated on certain teaching methods that he considered ineffective and others that he personally used with success.[1313] Perhaps he considered the fulfillment of teaching

[1308] Curtis, 59.
[1309] Curtis, 60, 59.
[1310] Curtis, 60–61.
[1311] Harry A. Curtis, qtd. in Granger, "Dr. Curtis Still Tough Despite the Tears."
[1312] Curtis, "Handwritten Autobiographical Account," 43, 45.
[1313] Curtis, 47–48.

too self-evident to discuss—another marker of white-collar masculinity—or perhaps he simply got sidetracked. Beyond simply teaching, however, Curtis relished educational design and administration, as he exhibited in his employment patterns at Northwestern and Yale. Years later, Curtis would accept the UMO deanship because it seemed to be "a job that I had not yet tackled, and [one] that…might be both challenging and rewarding...It proved to be both." [1314]

7.1.7 Idealism / Liberal Politics

Harry Curtis grew more politically liberal over time, often in response to direct experiences. His political development partly resulted from his practical nature, a trait of physical masculinity, since he saw what worked and what didn't. It also resulted from his sensitivity to (and identification with) the lower classes, another trait of physical masculinity. On the other hand, this political stance ultimately developed through experience he gained with government institutions over time, and it ultimately linked him with the education and idealism often associated with white-collar masculinity.

Curtis penned the conservative minority report of the Muscle Shoals inquiry since, as he later recalled, "I was not, in 1925, as liberal in my thinking as I became later, and particularly I took a dim view of government attempts to operate a commercial enterprise. … in the report I made some sour remarks about government bungling in business. These remarks were later to plague me at times when I was supporting the TVA on the witness stand."[1315] Curtis was likely raised with this "dim view" of "government bungling"—as

[1314] Curtis, "Handwritten Autobiographical Account"; See also Harry A. Curtis to Mrs. Edythe H. Taylor, January 18, 1939, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1315] Curtis, "Handwritten Autobiographical Account," 228–29.

one sees in his autobiographical depiction of an ignorant federal government distributing the Coloradoan farmland of his youth—but his opinions likely shifted once he joined the TVA (if not before).[1316] He was a "staunch Republican" in the 1930s South, according to his secretary Edythe Taylor, but Curtis witnessed the success of this public corporation.[1317] "I have seen constant evidence of growth, development, and change," Curtis reflected in a 1957 speech, "and in looking over the years since 1933 I realize that the TVA has survived and grown strong because it has retained flexibility and resilience, and has not been afraid of change as circumstances change."[1318]

His opinions of public administration likely shifted further in 1940-41, when Dean Curtis served as a technical advisor to Chester Davis of the National Defense Advisory Committee (NDAC) on Army contracts for companies to construct synthetic ammonia plants.[1319] Private industry was opposed to government initiatives to increase production capacity (such as through the TVA), for fear of overproduction.[1320] Curtis recalls, "...I soon became…disgusted…over industry's unwillingness to increase production capacity. Also, I became convinced that, regardless of TVA's desire to have an ammonia plant, it would be in agriculture's interest to have at least one of the country's synthetic ammonia plants free from industry control in the post-war period."[1321] After a protracted row between private companies and the TVA over its bid, "The TVA finally got the ammonia plant it

[1316] Curtis, 228–29, 13–16.
[1317] Taylor, "Edythe Helen Taylor Scrapbook," 7; Curtis, "Adventures in Faith."
[1318] Curtis, "Adventures in Faith."
[1319] Curtis, "Handwritten Autobiographical Account," 105–14, 256–57.
[1320] Curtis, 106.
[1321] Curtis, 108.

wanted and I got an insight into the way private industry will hog-tie the Federal government when conditions permit."[1322]

By the time Curtis was awaiting Senate approval of his appointment to the TVA Board, he was willing to publicly describe himself as "a New Dealer, a little left of center, but not as wild-eyed as some."[1323] His wife reportedly "urged him to withdraw the description for fear it might hurt his chances" of confirmation, to which "he replied, 'Why shouldn't I say it? It's true, isn't it?'"[1324] In 1952, he described the election of Franklin Delano Roosevelt as "one of the very fortunate events in our country's history." He moderated his opinion, though, continuing, "It does appear, in the wisdom of hindsight, that the Russians took him for a ride on certain occasions, along with a lot of other folks. But the overall result of his administration will, I think, give him a high place in the roll of able presidents when the long-range historical view finally prevails."[1325] In May 1957, just a few weeks before his retirement from the TVA Board, Curtis delivered a speech titled "Unfinished Business" that declared, "If you like the kind of misnamed creeping socialism that you and the TVA are promoting here, let's have more of it."[1326]

7.1.8 Other qualities of white-collar masculinity

Curtis could be strongly associated with white-collar masculinity for several qualities that are perhaps more abstractly related to the material image of a white-collar male archetype and his pursuits. Some may be outgrowths of the core qualities associated

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[1322] Curtis, 257, 111–14.
[1323] Harry A. Curtis, qtd. in "Cancer Fatal to Crusader."
[1324] "Cancer Fatal to Crusader."
[1325] Harry A. Curtis to Mr. John R. Kuebler, August 14, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1326] Harry A. Curtis, qtd. in "Cancer Fatal to Crusader."

with the archetype as described (such as impartiality or a disinterest in material rewards); others may be remnants of the "community leader" archetype, valued in men through the mid-1800s (such as honesty or magnanimity).

For example, one may assume that an archetypical 'white-collar male' who highly values and prioritizes intellectual development would be disinterested in material rewards. The career choices that Curtis made and the motivations he presented support the impression that he cared little for money relative to his intellectual pursuits. Others recognized, for example, that his interest in the development of "fertilizer resources is so compelling that many times in his career he has rejected much more profitable offers to stay in fields where he can give active expression to this interest."[1327] Curtis made it known that he had accepted the TVA paid him less as Chief Chemical Engineer than he'd been making in private industry at the time, and that the UMO deanship provided a lower salary than he earned from the TVA at that time.[1328] In 1963, Curtis reflected on such career choices in a newspaper interview:

> When I graduated from college, it seemed to me I had two choices: I could go to work for some big firm, work, hold on, get advances in salary and position and 30 or 40 years be very comfortably situated. Some of my friends did that. They've got a lot more of the world's goods than I have. Or I could have a hell of a lot of fun, do things that attracted me. After my salary got up to where I could live on it, I decided to never take on a job for salary alone. I would only take jobs that intrigued me. . . . As a result I've had a good time. I've enjoyed the whole damn thing.[1329]

[1327] Myatt to The Hon. Chapman Revercomb, June 16, 1948; W. S. Guthmann to Dr. Harry A. Curtis, August 3, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1328] "Cancer Fatal to Crusader"; Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."
[1329] Harry A. Curtis, qtd. in Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."

This excerpt speaks to a qualifier necessary for such disinterest: One must have enough money to *afford* a disinterest in it. As discussed in chapter 2, doing so performs a common marker of high socioeconomic class.

Curtis seems to have reached a salary he "could live on" fairly early. He reported a $6,000/year salary for preparing the Nitrogen Survey in 1923.[1330] TVA records indicate that in 1937 Chief Chemical Engineer Curtis earned a raise from $9400 to $9500 annually.[1331] Beyond salary, there's material evidence of his success. His personal records indicate that, from high school onwards, Curtis was always able to support himself along with his wife Polly (whom he married in 1911), and eventually his two children, with no indication that money was tight or that his college-educated wife ever sought work. The family's 1939 Christmas card depicts their new home in Columbia, MO, a lovely 2- to 3-story English-style house with gabled windows.[1332] As chairman, Curtis and his wife lived in another two-story English-style house, one with eight rooms and three bathrooms.[1333] By the end of Curtis' deanship, he could afford for Polly to rent a vacation cottage and bring a housemaid to spend summer months on Cape Cod with her grandchildren and daughters.[1334]

[1330] Harry A. Curtis, "Part of the Record," n.d., Box 7, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1331] Gordon R. Clapp, c 1936, Box 7, folder 4; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1332] Mr. and Mrs. Harry A. Curtis to Mrs. Edythe H. Taylor, Christmas card, December 21, 1939, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1333] "Dr. Bell Buys Curtis Home," July 12, 1964, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1334] Curtis to Boarts, June 2, 1948; Harry A. Curtis to Prof. Alfred H. White, May 22, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Mr. Howard Sheldon, May 10, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

Alongside this disinterest in the material rewards he gained nonetheless, many saw in Curtis another marker of white-collar masculinity: At times, he eschewed self-promotion. This can be taken as an indicator of one's singular focus on intellectual pursuits or of one's wish for his work to speak for itself. Despite his obvious confidence to the point of bombast, others genuinely saw Curtis as quiet and humble in this regard. Robert Sessions, for one, opened his introductory remarks to the 1957 dinner in honor of Curtis by describing him as "a good friend who has never sought out honor for its own sake."[1335] Nine years earlier, when Curtis was nominated to the TVA Board of Directors, his friends encouraged each other to write letters in his support, noting that, "as you know, Dr. Curtis would be the last one to press his own case so…unless his friends go to bat for him…his appointment might be shelved."[1336] Others lauded his aversion to self-promotion as a strength when writing Senators. "He really is a remarkable man," wrote one, "who has so earnestly and yet quietly followed with considerable energy his able views and beliefs that he has not been as widely known as many a lessor man of far less ability and importance."[1337] In the midst of this, Curtis wrote Gordon Clapp listing several people who had contacted Senators in his support. "Someone is evidently stirring up my friends to write their senators," he wrote, "Perhaps I should do more myself, but I have never asked anyone to recommend me and it is extremely distasteful to me to do so."[1338]

[1335] Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1336] Arthur M. Miller to Mr. Edgar M. Queeny, May 20, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1337] Charles O. Brown to Sen. Chapman Rivercomb [Revercomb], June 2, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1338] Harry A. Curtis to Mr. Gordon R. Clapp, May 25, 1948, Box 7, folder 4; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

Curtis was, furthermore, considered impartial, not swayed by passions or politics—as would an idealized expert. "I have no idea what Dr. Curtis' political affiliations and views are," wrote one friend in support of his 1948 appointment, "but I am quite confident that they are not a prominent part of his makeup. I am sure that he would not be swayed by matters of immediate expediency in dealing with any problem that required decision based on fundamental factors or justice."[1339] Of course, this would be just what a U.S. Senator would want to hear in 1948, as political tides were turning against the TVA's unique status; however, the fact that Curtis was, indeed, appointed attests that his supporters were not the only ones to consider him relatively impartial. Upon his retirement, another lauded the fact that Curtis had a great deal of industrial experience without "the common emotional biases" that industry held against government projects.[1340]

In that vein, Curtis was also known for his honesty. His friend and mentor Ekeley posited that Curtis organized the UCO branch of his professional fraternity out of "a love of truth, and of fairness and square dealing in our profession as chemists and in our relations to one another."[1341] Others pointed to his honesty, reliability, and his record (unmarred by "anything objectionable") while pushing for his appointment to the TVA Board.[1342] One went so far as to claim, "He is absolutely trustworthy in everything he does."[1343] Sure enough, enemies could find nothing "crooked" in Curtis' work for the TVA during its

[1339] H. P. Hammond to Senator Chapman Revercomb, May 26, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1340] John P. Ferris to Mr. Lloyd L. Huntington, March 17, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1341] Ekeley to Eta Chapter of Alpha Chi Sigma, April 15, 1940.
[1342] Brown to Ives, June 2, 1948; Miller to Revercomb, May 23, 1948.
[1343] Hammond to Senator Chapman Revercomb, May 26, 1948.

exhaustive 1938 investigation.[1344] Further, he occasionally clarified the ethical practices of his field when making decisions. In 1948, he wrote Gordon Clapp to request permission to serve the Egyptian Government while still consulting for the TVA, explaining, "In the engineering profession a consultant may not ethically serve more than one client in a given field of activity without the knowledge and consent of all parties concerned."[1345]

Finally, Curtis was celebrated for his magnanimity, a lingering characteristic of gentlemanliness or a "community leader" masculinity. For example, Curtis was active in community groups. He claimed credit for "launch[ing] the publication" of the UCO periodical *Colorado Alumnus* in 1911 (while teaching at UCO).[1346] That same year, he collected funds for and organized the UCO Club House Association to provide a club house for the students there. Faculty and students donated funds, and they rented a space for the club house; however, "[t]he venture was a failure…after several months struggle."[1347] Curtis also worked with others to build a club house while living in South Clinchfield, VA, 1921-1923.[1348]

Curtis told his story about his 1908 'career choice' to a second newspaper in 1963—he may have repeated it often—but in this paper he explained that he decided to choose "the jobs that interested me and that seemed to offer the best oportunity [sic] for a worthwhile contribution."[1349] He was known to befriend and mentor students, employees,

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[1344] Curtis, "Handwritten Autobiographical Account"; Richard Lowitt, "The TVA, 1933-45," in *TVA: Fifty Years of Grass-Roots Bureaucracy*, ed. Erwin C Hargrove and Paul Keith Conkin (Urbana and Chicago: University of Chicago Press, 1983), 35–65.
[1345] Harry A. Curtis to Mr. Gordon R. Clapp, April 29, 1948, Box 7, folder 4; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1346] Curtis, "Handwritten Autobiographical Account," 63.
[1347] Curtis, 63.
[1348] Curtis, 131.
[1349] Harry A. Curtis, qtd. in "Dr. Harry A. Curtis Dies Here At 79."

and fellow engineers. Curtis boasted that students sought him out for professional and personal advice and that "more than a score of them" sent him Christmas cards decades after their affiliation.[1350] Employees and colleagues described him as "our guide, philosopher, and friend," likened him to "a big brother," and also sent Christmas cards for a boast-worthy duration.[1351] Letters supporting his 1948 Board appointment gushed of his "generous, gentlemanly" nature and dedication to "[t]he people's welfare."[1352] He took special pride in 'doing right' by his academic employers. For example, he offered to forgo his 1930-31 sabbatical from Yale when he decided he would not return. During the 1948 delay of his confirmation to the TVA Board, Curtis turned down an interim appointment to the Board primarily so that UMO could have more time to find his replacement.[1353] Harry Curtis' speech at the 1957 dinner in his honor, entitled "Adventures in Faith," referred to "the faith that there abides in civilized human beings certain ideals of decent behavior, and that these ideals if given opportunity can lead men and women to place public service above selfish personal interests."[1354] Although the theme of this speech was particularly fitting to TVA propaganda, it supported Robert Sessions' thesis that Curtis

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[1350] Curtis, "Handwritten Autobiographical Account," 78.
[1351] Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis"; W. H. Mitchell to Harry A. Curtis, May 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account," 78.
[1352] Brown to Rivercomb [Revercomb], June 2, 1948; Peterson to Thomas, May 5, 1948; Brown to Ives, June 2, 1948.
[1353] Curtis, "Handwritten Autobiographical Account," 72; Harry A. Curtis to F. A. Middlebush, June 28, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections. See also Women's Chemical Society of the University of Colorado to Dr. Harry A. Curtis, c 1915, Box 3, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections, in which he tendered his resignation letter to UCO when joining the WWI war effort in case the department needed to use it before his return.
[1354] Curtis, "Adventures in Faith."

aimed to do good, honest work in service to a higher goal and that he expected others to be "similarly motivated."[1355]

Curtis also emphasized cooperation and teamwork. As early as 1931, when recruiting men to head his Vacuum Oil Co. research lab, Curtis explicitly sought those with "acceptable personality."[1356] Although he didn't spell out what that meant at the time, it's similar to a much more detailed explanation that Edythe Taylor recalled when Curtis hired her as his secretary in 1934. She assumed that she had been selected solely because of her excellent shorthand and transcription skills; however, she soon learned that other qualities were a huge factor:

> [W]hen I heard Dr Curtis state that he hired men for employment at the Fertilizer Works at Wilson Dam, Alabama, only if they had good personalities, I was surprised. He stated that ability could be…[ac]quired, but that personality was a trait. The secrecy of the work at Wilson Dam, Alabama, required that the same people work together day after day in isolated areas. He stated a good personality was necessary for work with such close proximity[.][1357]

Curtis, then, wanted personalities conducive to excellent teamwork, teamwork that could thrive under unusually intense circumstances.

As Chief Chemical Engineer, Curtis not only valued teamwork in his employees but in the higher ranks of the TVA. Although Curtis disliked A. E. Morgan, a major justification for this was the impression that A. E. Morgan tried to direct the TVA by himself, with "only advice" from the other Board members.[1358] He also recalled, however,

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[1355] Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1356] Harry A. Curtis to Marion E. Dice, January 21, 1931, Box 1, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1357] Taylor, "Edythe Helen Taylor Scrapbook," 8.
[1358] Curtis, "Handwritten Autobiographical Account," 238.

that "although my sympathies were with Dr. H. A. the attitude of Dr. H. A. and Lilienthall [sic] toward Dr. A. E. was not what I would call conciliatory," and he found the division of responsibilities a poor solution for a Board that should have worked as a team to direct all areas of TVA endeavor.[1359] He would encourage greater cooperation on the Board in a 1935 memo to Lilienthal.[1360]

7.1.9 Opinions of Others' Expertise

This leads us to another way in which Curtis displayed his white-collar masculinity: through his expectations and judgments of others. We see his dedication to expertise, for example, in an assessment of Dr. F. G. Cottrell, the director of the Ordnance Department's Fixed Nitrogen Research Laboratory. "He missed being very great largely because he didn't concentrate his efforts enough in any field," Curtis wrote in his autobiographical manuscript, adding, "His biography has been published...under the title: 'Cottrell, Samaritan of Science.'"[1361] Although Curtis appears to have valued and have been praised for his magnanimity, this statement suggests that he valued specialized expertise over magnanimity when it came to being "very great."

Ever the outspoken individual, Curtis made clear that he resented ignorance, especially that of people claiming authority in fields outside of their expertise. This included disdain for such situations throughout his work life. When performing the Muscle Shoals Inquiry, Curtis claims to have worked alongside "a second-rate politician[;]…a

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[1359] Curtis, 239.
[1360] Harry A. Curtis to David E. Lilienthal, "Sez One Expert to Another," Draft of memo, August 14, 1935, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1361] Curtis, "Handwritten Autobiographical Account," 219.

gentlemanly, stupid fellow who knew only that Muscle Shoals was not in his state[;]…a so-called farm economist who took himself very seriously[;]…[and] a consulting engineer."[1362] (The consulting engineer may have dodged the bullet of Curtis' disdain by working with Curtis to pen the minority report that disagreed with the other three members. He "surprised" Curtis in his ability to listen to reason despite having worked for "big business, power companies in particular."[1363])

Curtis' recollection of the Clinchfield Carbocoal Corporation reads like a comedy of errors by overly ambitious men lacking technical experience that Curtis heroically attempted to remedy. They employed a firm to design and build a full-scale commercial plant in South Clinchfield, Virginia, without confirming the success of their pilot plant in New Jersey. The commercial plant's manager "had had no technical education or training or experience in plant operation."[1364] Curtis was initially employed at the pilot plant to develop uses for by-products of the process; however, he quickly found that the pilot plant "was in trouble much of the time, that some of the equipment was poorly designed and that some parts of the plant just wouldn't work."[1365] Learning that the commercial plant was to use much of the same equipment, he informally started working on the problems he saw with the pilot plant.[1366] When the commercial plant in South Clinchfield was complete, the manager, "in all his innocence thought that…you just pushed the button and the plant went into operation. Well, he pushed the button but nothing happened. The plant just would not start and [he] had no idea what the troubles were."[1367] The manager blamed the engineering

[1362] Curtis, 228.
[1363] Curtis, 228.
[1364] Curtis, 122.
[1365] Curtis, 124, 123.
[1366] Curtis, 124–25.
[1367] Curtis, 125.

firm that had designed and built it—as contracted—based on the faulty pilot plant.[1368] Curtis, who "suddenly found myself general manager of the South Clinchfield plant," moved to southwest Virginia to make extensive repairs, but the plant ended up economically infeasible nonetheless.[1369] That Curtis would recount this story—complete with details of others' incompetence—in his autobiographical manuscript for his children is significant.

Such disdain for people commanding authority outside their fields of expertise extended to Curtis' attempts to reform chemical engineering education, which often seemed a war against chemists' teaching chemical engineering.[1370] It also appeared in his lack of respect for A. E. Morgan, who—as Curtis liked to point out—was not a college graduate (the Dr. was an honorary degree) but had become well-known as an engineer, or rather as a manager of engineering projects.[1371] Morgan, then, lacked necessary formal education and experience (through engineering practice) in Curtis' eyes.

7.2 Harry Curtis, Race, and Ethnicity

From what one can glean from his records, Harry Curtis was personally relatively progressive for his time with respect to desegregation and treating other races and ethnicities 'fairly.' We see this most notably as he argued for the desegregation of his professional fraternity, Alpha Chi Sigma, and in the personal opinions he expressed over the treatment of African Americans in the South. In such instances, he invoked values that corresponded to frontier and white-collar masculinities. Curtis was no radical, however;

[1368] Curtis, 125.
[1369] Curtis, 127–29.
[1370] Curtis, "Handwritten Autobiographical Account."
[1371] Curtis, 235.

his progressivism was tempered by institutional devotion and the value he placed on pragmatism. He appears to have been careful not to push any 'race issue' too hard, regardless of the race or ethnicity in question, and he actively argued against the application of a desegregationist rule at UCO for the sake of his fraternity chapter. At times like these, the institutional devotion associated with military masculinity and the practical/results-based orientation of physical masculinity conflicted with the ideals of independence and meritocracy inherent in wilderness masculinity and white-collar masculinity, respectively.

Curtis was born and raised in a community that had fresh memories of small conflicts with members of at least one other race. This was significant enough for Curtis to include in his autobiographical manuscript, despite occurring before his birth:

> Once a year Indian bands were allowed to trek to Denver and return. The route of this pilgrimage followed West Plum Creek valley and the Indians with their squaws, children, dogs and ponies camped almost anywhere, since but few fields were fenced at that period. Trading between the Indians and the ranchers was always brisk, but each rancher urged the Indian band on its way since the numerous ponies close-cropped the pasture around each camp, and the Indians were given to petty thieving, and to making unexpected entrance to rancher homes begging for food.[1372]

Accounts that Curtis must have heard fairly commonly, then, as he grew up on the family farm depict Native Americans as trading partners, but also as thieves, beggars, itinerants, trespassers, or at least people ignorant of or unwilling to follow basic social courtesies of white Americans.

Such impressions did not dissuade Curtis from working with Native Americans in his adult life. In August, 1917, Troop F of Curtis' squadron in the Colorado National Guard

[1372] Curtis, 18–19.

mutinied, and its officers were "relieved of duty."[1373] Curtis, recently commissioned a first lieutenant in the U.S. Army, was appointed to command the troop. He recalled, "The men had been recruited in the coal-mining region of southern Colorado and were a mixed lot of Mexicans, Indians, and other foreign origins and were supposed to be a tough outfit. I had no trouble with the troop and worked the men hard."[1374] He notably presents Native Americans as being of "foreign origin," further 'othering' them and stripping them of any claim to the continent.[1375] Although it may have been a slip-up in Curtis' hand-written account (which does often contain small errors), it may also have been a reflection of white American cultural opinion (written sometime between 1944 and 1963). That he "worked the men hard" may indicate dislike or cruelty towards these men, but it seems similar to his relationship with the presumably white and mostly-college-student troop under his command in 1916.[1376] That he "had no trouble with the troop" is proof, at the very least, that he was never so disrespectful that they mutinied as they had before.[1377]

Curtis was the national president (or "Grand Master Alchemist") of his professional chemistry fraternity, Alpha Chi Sigma, from 1914 to 1919.[1378] At its 1919 annual meeting, "an attempt was made to bar Jews from membership," Curtis recalled decades later.[1379] In

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[1373] Curtis, 210.
[1374] Curtis, 210.
[1375] Curtis, 210.
[1376] Curtis, 210, 207–8.
[1377] Curtis, 210.
[1378] *Alpha Chi Sigma Sourcebook: A Repository of Fraternity Knowledge for Reference and Education*, Academic Year 2013-2014 Edition (Indianapolis, IN: Alpha Chi Sigma Fraternity, 2013), 28, 31, https://www.alphachisigma.org/document.doc?id=536; Curtis, "Vita Harry A. Curtis"; Harry A. Curtis to Chairman, University of Colorado Board of Regents, January 11, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1379] Curtis to Chairman, University of Colorado Board of Regents, January 11, 1954.

his leadership capacity, Curtis "was able to head off discussion" and delay the discriminatory amendment for the time being.[1380]

When Curtis joined the TVA as Chief Chemical Engineer in 1933, one of his "first chores" involved "a wild Indian named Percy Royster" at the USDA's Fixed Nitrogen Research Laboratory (FNRL).[1381] This racial depiction Curtis used in his autobiographical manuscript was almost certainly intended as a description of his personality. A photograph of Royster in his senior year at the University of North Carolina, Chapel Hill, shows a man with fair skin, light straight hair, light eyes, and arguably European facial features. If he had any Native American ancestry, it was very well hidden in this photograph.[1382] What, then, made him "a wild Indian"?

Royster had invented a very promising set of stoves that used pebbles rather than bricks to heat air to higher and more uniform temperatures for industrial processes, and he was using them in a pilot blast furnace that he was testing for the production of elemental phosphorus.[1383] Curtis clearly thought that such stoves could be useful to the TVA's phosphorus manufacturing. The USDA was unable to fund the completion of experiments on this furnace, so the TVA stepped in to fund it.[1384] Curtis negotiated a contract between the USDA, the TVA, and the Research Corporation of New York, NY. The Research Corporation was contracted to design a full-scale blast furnace for the TVA if Royster's tests showed the pilot furnace to be effective; notably, Curtis recalls that it was also

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[1380] Curtis to Chairman, University of Colorado Board of Regents.
[1381] Curtis, "Handwritten Autobiographical Account," 169.
[1382] Amy Robbins-Tjaden, "Percy Hoke Royster," Find a Grave: Memorials, October 21, 2010, https://www.findagrave.com/memorial/60395611/percy-hoke-royster.
[1383] Percy Royster, Apparatus For Heating Gases, U.S. Patent 1,940,371, filed May 6, 1930, and issued December 19, 1933; Curtis, "Handwritten Autobiographical Account," 169.
[1384] Curtis, "Handwritten Autobiographical Account," 169–70.

contracted oversee documentation of the experiments.[1385] Curtis wrote, "The Research Corporation was brought into the arrangement because I knew that if Royster were in complete charge of the tests the records thereof would be a mess. The Research Corporation was to see that good records were kept."[1386]

During his first few years at the TVA, Curtis "occasionally" traveled to Washington, D. C., to check the progress of this program "and was very unhappy over the mess I found there."[1387] After several months, the program "yielded very little information of value and the experiments had to be repeated in a pilot plant later built at Wilson Dam."[1388] Royster's limitations, according to Curtis, were not only in "messy" record-keeping, but in an obstinate rejection of and possible alteration of undesired results. In one part of his manuscript, Curtis describes Royster and his mentor (the famous F. G. Cottrell) as "highly imaginative individuals" who found several possible uses for the stoves; however, no trials met "with spectacular success since none of the actual stoves gave the results claimed."[1389] Later in his manuscript, Curtis describes Royster as "a fellow with a streak of genius in him but quite unsuited to direct research because he would not allow what his eyes saw to change his predetermined opinion as [to] what should happen."[1390] The qualities Curtis saw in Royster are echoed in a short historical article found on the website of what is now the Research Corporation for Science Advancement, which briefly

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[1385] Curtis, 170, 234; "Research Associates Inc.: Gaining Wisdom from Failure," Research Corporation for Science Advancement, May 4, 2012, https://rescorp.org/news/2012/05/research-associates-inc.-gaining-wisdom-from-failure.
[1386] Curtis, "Handwritten Autobiographical Account," 170.
[1387] Curtis, 172–73.
[1388] Curtis, 173.
[1389] Curtis, 169; Anthony N. Stranges, "Farrington Daniels and the Wisconsin Process for Nitrogen Fixation," *Social Studies of Science* 22, no. 2 (1992): 321.
[1390] Curtis, "Handwritten Autobiographical Account," 234–35.

describes Royster as "a brilliant and difficult protégé of Cottrell's" and describes a situation similar to the one Curtis describes when Research Associates, Inc., sought to develop Royster's stoves in 1936.[1391] "Royster's stove project" demanded significantly more time and manpower than initially predicted, and it never succeeded,[1392] though Royster's core idea of a pebble bed heated furnace would later come to be used for nitrogen fixation and experimental nuclear reactors.[1393]

Having completed his term as Grand Master Alchemist of Alpha Chi Sigma in 1919, Curtis continued to attend national meetings for years and involve himself in debates over ethnic minority participation. The restrictive legislation that Curtis had "head[ed] off" in 1919 reappeared and passed "[a] few years later," as Curtis recalled, "barring Jews, Negroes, and (as I recall) Orientals."[1394] The possibility of chapters' accepting members of African or Asian descent apparently seemed unlikely enough at the time that these races were not a subject of notable debate.[1395] "[T]he rule barring Jews was hotly debated at every national meeting" after its passage, however.[1396] Curtis claimed to have pushed for repeal and the tolerance of Jewish members "[w]henever opportunity offered," believing that the ill effects of the rule in fracturing the fraternity would far outweigh the impact "of the small proportion of Jewish men who might have been elected by the chapters."[1397]

[1391] "Research Associates Inc." Cottrell and others who were heavily involved in the Research Corporation and Research Associates are not depicted in a flattering light here, either.
[1392] "Research Associates Inc."
[1393] Stranges, "Farrington Daniels and the Wisconsin Process for Nitrogen Fixation"; Lee S. Langston, "Pebbles Making Waves," *Mechanical Engineering Magazine* 130, no. 02 (2008): 34–38, https://doi.org/10.1115/1.2008-FEB-3.
[1394] Curtis to Chairman, University of Colorado Board of Regents, January 11, 1954.
[1395] Curtis to Chairman, University of Colorado Board of Regents.
[1396] Curtis to Chairman, University of Colorado Board of Regents.
[1397] Curtis to Chairman, University of Colorado Board of Regents; Harry A. Curtis to Mr. John R. Kuebler, June 3, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

Sometime after Curtis stopped attending national meetings and before 1948, the fraternity altered its rules to accept members of any "race or religion," except for African Americans, who remained abolished.[1398] Chapters admitted a handful of Jewish and Asian members, and "The Indian problem…seems to have solved itself all right," reported John Kuebler to Curtis in 1952.[1399]

In the meantime, in 1940 Dr. John B. Ekeley wrote a letter to Curtis' old Alpha Chi Sigma chapter at UCO.[1400] Ekeley was the UCO professor and chemistry department chair who had taken a promising undergraduate Curtis under his wing, later to become his employer, lifelong mentor, and friend.[1401] He wrote the fraternity chapter in 1940 to praise Curtis for his intentions in organizing the chapter (back in 1908) and to encourage the chapter to continue to uphold the values that Curtis had initially instilled in it. Ekeley chiefly emphasized that, beyond wanting to encourage a love of chemistry and one's professional work therein, Curtis acted out of "a love of truth, and of fairness and square dealing in our profession as chemists and in our relations to one another."[1402] Ekeley did not clearly state what prompted him to write this at the time.[1403]

In 1947, the UCO Board of Regents recommended that the University refuse the charters of any honorary or professional society "whose charters contain restrictions as to

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[1398] Curtis to Chairman, University of Colorado Board of Regents, January 11, 1954.
[1399] John R. Kuebler to Dr. Harry A. Curtis, August 4, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1400] Ekeley to Eta Chapter of Alpha Chi Sigma, April 15, 1940.
[1401] Viola Ekeley to Alpha Chi Sigma Fraternity, July 10, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."
[1402] Ekeley to Eta Chapter of Alpha Chi Sigma, April 15, 1940.
[1403] Ekeley to Eta Chapter of Alpha Chi Sigma.

race, creed or color."[1404] Perhaps in response to this or a broader trend of which it was part, the 1948 annual meeting of Alpha Chi Sigma saw it adopt "ambiguous legislation" to effectively bar African American membership without explicitly spelling it out.[1405] John Kuebler, as the fraternity's Grand Recorder, clarified in a personal letter to Curtis:

> In the Constitution, the Bylaw reads that every candidate must be professional[ly] and socially acceptable to the Grand Chapter. However, 'social acceptability' is interpreted by legislation as interpreted by the Grand Chapter…Anybody is eligible now, except the Negro, and the Negro is not legislated against specifically by our organizations. Interpretation indicates that when seventy-five per cent of the communities where we have chapters accept the Negro socially, the fraternity does automatically.[1406]

Curtis later wrote to his friend Kuebler that he feared the UCO chapter would close upon adoption of the original discriminatory legislation and that he felt "sorry that, when we should have cleaned up that mistake, we resorted to ambiguity that was deliberately planned to perpetuate a prejudice."[1407] Note that, despite his feeling "heartsick" over the issue and having not even attended the 1948 annual meeting, Curtis emphasized his loyalty to the fraternity by continuing to use the plural first-person "we."[1408] This institutional loyalty, inspected in the section on Curtis' military masculinity, was already creating a

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[1404] James A. Mullins to John R. Kuebler, May 24, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1405] Curtis to Kuebler, June 3, 1952; "Past Conclaves," Alpha Chi Sigma, 2017, https://www.alphachisigma.org/about-us/conclave/past-conclaves; *Alpha Chi Sigma Sourcebook*.
[1406] Kuebler to Curtis, August 4, 1952.
[1407] Curtis to Kuebler, June 3, 1952.
[1408] Curtis to Kuebler, August 14, 1952; Curtis to Kuebler, June 3, 1952.

conflict with the progressive racial stance inspired by the meritocratic values of his white-collar masculinity and the democratic leanings of his wilderness & physical masculinities.

In May 1952, the UCO Dean of Students reviewed the charters of all honorary or professional societies on campus, and he found that the charter of Alpha Chi Sigma qualified for denial on the basis of its effectively barring black membership. He gave the chapter a short period of time to remove it at the risk of the chapter's closure.[1409] James A. Mullins, the head of the UCO chapter at the time, shared the news with Kuebler. Mullins added that the "chapter will support any resolutions for the removal of the racial restrictions"; he must have felt like his hands were tied since such action could only be taken at the national level.[1410]

Kuebler alerted Curtis to this issue days later.[1411] Curtis had no official role in the organization by this point; however, the two were old friends, and Kuebler knew that Curtis would be interested in the welfare of his former chapter and alma mater. On June 3, Curtis wrote a lengthy reply to Kuebler plainly stating his thoughts on the matter and defending them in light of his disagreements with his friend. "I believe you know--and do not agree with--the position I have held for a long time," Curtis writes, "namely, that Alpha Chi Sigma should remove every restriction in membership that is based on race, creed or skin color."[1412]

[1409] Mullins to Kuebler, May 24, 1952.
[1410] Mullins to Kuebler.
[1411] John R. Kuebler to Dr. Harry A. Curtis, May 28, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1412] Curtis to Kuebler, June 3, 1952.

The reasons that he gives for this invoke value systems associated with multiple masculine archetypes with which he has been associated. His first point invokes frontier masculinity through its strong emphasis of one's independence and individual rights. Rather than focus on the individual rights of a black applicant, Curtis focused first on the right of a chapter to accept whom it wishes and then the right of an individual (presumably a white man) to associate with whom he wishes:

> [T]oday I am quite prepared to leave to the active chapters the privilege of electing a Negro if he is professionally and socially acceptable to the chapter. He might not be welcomed in some other chapter, but what of it? Each of us, individually, reserves the right to determine the circle to which we admit any man, and our professional circle may be wider than our home circle, but, so far as I am concerned, I do not use race, creed, or color as criteria. I associate professionally and on a friendly basis with a lot of men whom I would not care to have in my home or as companions on a camping trip, but this right that I reserve is based on my evaluation of them as men.[1413]

Despite implying a white subject who evaluates others of various races, Curtis concludes that this is an "evaluation of them as men," extending the democratic or anti-hierarchic view of his frontier masculinity to include them, theoretically avoiding a preoccupation with status in lieu of a personal evaluation. That he distinguishes the professional sphere so starkly from the domestic sphere is to be expected; however, his distinction between professional and social circles—such as those with whom he would camp—is notable in light of the social connections that have historically facilitated professional networking, within engineering and American business more broadly, and continue to do so to this day.[1414]

[1413] Curtis to Kuebler.

[1414] Ruth Oldenziel, *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999); Amy Sue Bix, *Girls Coming to Tech!: A History of American Engineering Education for Women*, Engineering Studies (Cambridge, MA: The MIT Press, 2013);

Curtis next focuses on the fraternity nationally with an argument about member qualifications that invokes the meritocratic value system of white-collar masculinity:

> Alpha Chi Sigma is a professional fraternity. We elect men who give promise of becoming competent members of a profession and who have personal qualities that are acceptable. Personality is a complex thing. It involves manners, attitudes, and many other things. But I can not see that it involves color of skin or shape of nose or place of birth or church attended, if any, or what ticket is voted in national elections.[1415]

Curtis admits that one's personality influences his membership. This is arguably evidence that this system is not as scientific or meritocratic as, say, professional hiring and promotion ideally would be; however, even a professional fraternity is essentially a social organization and is bound to consider several factors that could/should be irrelevant to a professional organization. That said, Curtis breaks down the factors that the fraternity should consider for membership and treats them as if they could be tallied on a rubric or objectively evaluated for efficacy within the organization. Since "color of skin" and other factors are not part of one's personality, Curtis argues, they should not be included in the factors considered.

Curtis ends the June 3 letter on a note that displays his military masculinity. "My interest is the welfare of Alpha Chi Sigma," he writes, emphasizing his dedication to the institution.[1416] The threat of the chapter's closure at UCO, Curtis predicts, "may only be a beginning of disintegration" in the fraternity if the issue "is settled on the grounds of some of the narrow prejudices I heard."[1417] The opinions that Kuebler had shared, "which, I

Jane Margolis and Allan Fisher, *Unlocking the Clubhouse: Women in Computing*, Women in Computing (MIT Press, 2002).

[1415] Curtis to Kuebler.

[1416] Curtis to Kuebler.

[1417] Curtis to Kuebler.

assume[,] reflect Council's attitude, lead me to realize how far away I am from sharing your views as to what would promote Alpha Chi Sigma's welfare."[1418] Despite his frank disagreement with Kuebler on this issue, Curtis emphasizes here that they both work in the interest of the fraternity, and he prioritizes those fraternal interests over his personal views on desegregation.

Perhaps because of this, Curtis is a bit more conciliatory in his August 14 letter to Kuebler. Harry asks for the numbers of "Jews...Japs or Chinese or American Indians, or Arabs" allowed into the fraternity since the ambiguous rules were adopted.[1419] "The question of Negro membership is, of course, the most difficult of all, and only time will solve it," Curtis continues, "So far as I am concerned, I would be happy to see the door opened to the Negro, but I realize that at present the Fraternity is not ready for such a radical change."[1420] Curtis the "fighting intellectual" had decided not to try to force change here.[1421]

August 26, however, saw Curtis persist in presenting his views to Kuebler with more logical arguments about the application of the fraternity's rule. Kuebler, it seems, had replied that some minorities had recently been elected by chapters, unintentionally encouraging Curtis to push his case.[1422] "I see that the Fraternity has made more progress than I was aware of along the road toward tolerance," Curtis writes, "It seems to me that the wording of the pertinent Bylaw as it now stands is unsatisfactory in that its meaning is

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[1418] Curtis to Kuebler.
[1419] Curtis to Kuebler, August 14, 1952.
[1420] Curtis to Kuebler.
[1421] "Cancer Fatal to Crusader."
[1422] Harry A. Curtis to Mr. John R. Kuebler, August 26, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis to Chairman, University of Colorado Board of Regents, January 11, 1954.

obscure and, on its face, suggests restrictions that might be so intolerant that the Fraternity does not want to state them openly."[1423] On a practical note, Curtis homes in on the new responsibility of the Grand Recorder to approve of each chapter's candidates. "It appears that the Grand Recorder must now determine social acceptability by deciding who is or is not a Negro, and that is no small assignment; in border line cases it would be an impossible task even for an anthropologist. At any rate, I am pleased that you have only to look out for traces of Negro ancestry now," Curtis sarcastically adds, referencing the acceptance of all other minority groups, "Along with your other responsibilities that should keep you on your toes."[1424]

As the issue persisted over the next two years, Curtis and his values were invoked by others in support of the fraternity's desegregation. In July 1952, Viola Ekeley sent a copy of her late husband's 1940 letter (about Curtis and the UCO chapter) to the national fraternity. Its emphasis on "fairness and square dealing" seemed to speak directly to the issue, and Mrs. Ekeley, still residing in Boulder and surely still associating with families of the chemistry department, may have known of the threat to the chapter.[1425] Her introductory letter, however, merely mentions having found the piece in Ekeley's papers and having "thought you might be interested in reading."[1426] That the rest of her brief letter is limited to identifying Curtis and praising his "great accomplishments in the chemical world" could support her innocent tone—purely thinking that they would be interested in hearing praise for the chapter and one of its former members—or it could be a subtle tactic

[1423] Curtis to Kuebler, August 26, 1952.
[1424] Curtis to Kuebler.
[1425] Ekeley to Eta Chapter of Alpha Chi Sigma, April 15, 1940; Ekeley to Alpha Chi Sigma Fraternity, July 10, 1952.
[1426] Ekeley to Alpha Chi Sigma Fraternity, July 10, 1952.

to garner support for Curtis' desegregationist stance.[1427] John Kuebler passed the letters by Dr. Ekeley and his widow along to the Members of the Alpha Chi Sigma Supreme Council, noting that he did not know under what circumstances Ekeley wrote the 1940 letter to the chapter but that both letters could be relevant in light of the situation.[1428] A year and a half later, S. C. Lind wrote Kuebler from Oak Ridge to oppose the restrictive bylaw, also invoking Curtis in his appeal. "I have talked with Dr. Harry A. Curtis of the T.V.A. Directorate in Knoxville," Lind writes in January 1954, "I find that he and I are in complete agreement as to the wisest policy for Alpha Chi Sigma to follow; namely, to repeal the bylaw disbarring negroes from membership in the national fraternity."[1429]

The initial grace period that the UCO Dean of Students had given to the local chapter had ended, however.[1430] The chapter had appealed to the UCO Board of Regents, which was set to review the appeal that spring, and Alpha Chi Sigma likely called for letters in support of the appeal.[1431] Despite their opposition to the racist bylaw, Curtis and Lind joined their brothers in writing letters to the UCO Board of Regents urging it to allow the local chapter of Alpha Chi Sigma to remain open with the bylaw still in place.[1432]

The letter that Curtis composed to the Board of Regents sought "to present certain facts and comments for your consideration" when hearing the chapter's final appeal, and it

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[1427] Ekeley to Alpha Chi Sigma Fraternity.
[1428] John R. Kuebler to Members of the Supreme Council, July 18, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1429] S. C. Lind to Mr. John R. Kuebler, January 8, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1430] M. E. Dice to Mr. H. A. Curtis, March 24, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1431] Dice to Curtis; Lind to Kuebler, January 8, 1954; Curtis to Chairman, University of Colorado Board of Regents, January 11, 1954.
[1432] S. C. Lind to Chairman, University of Colorado Board of Regents, January 14, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis to Chairman, University of Colorado Board of Regents, January 11, 1954.

suggests a struggle within Curtis to reconcile his democratic dedication to fairness (associated with frontier and white-collar masculinities) with his devotion to his fraternity (associated with military masculinity).[1433] Curtis begins with an introduction of himself that included his association with the university and Alpha Chi Sigma, and he gave a brief history of race-oriented debates in the fraternity to date. In doing so, Curtis presents himself as a 'social justice warrior,' who fought the fraternity's racist bylaws at every opportunity, while simultaneously presenting the fraternity's racist bylaws in a mild light, emphasizing the progress it had made: "Eventually the fraternity removed all restrictions based on race or religion except with respect to Negroes, and since then a few Jews and Orientals have been admitted."[1434] Curtis moves on to an opinion of the current matter, one that actually implies the Board of Regents has not gone far enough in combatting racial restrictions. "Personally, I would like to see all restrictions based on race or religion removed," Curtis writes, "not only by professional fraternities such as Alpha Chi Sigma but by social fraternities. It seems to me that the University errs in singling out the honorary and professional fraternities when the principle involved is so obviously one that should apply to all campus organizations."[1435] With that said, he immediately changes tack, emphasizing the need for pragmatism—which ultimately means refusing to punish the fraternity chapter for Alpha Chi Sigma's racist bylaw. To emphasize this, he likened the Board of Regents' role in this situation to his own role at the TVA:

> Here in the South we are in daily contact with this Negro question and it is very difficult for me to be patient in the face of the intolerance and injustice that I see around me. In the TVA we have about 23,000 employees, some 1,300 Negroes. Over the years we have made good progress in overcoming prejudices against

[1433] Curtis to Chairman, University of Colorado Board of Regents, January 11, 1954.
[1434] Curtis to Chairman, University of Colorado Board of Regents.
[1435] Curtis to Chairman, University of Colorado Board of Regents.

> Negroes. The process has required patience, but I believe that the hundreds of small steps taken by the TVA month by month and year by year have carried us much nearer the goal than could possibly have been reached by a violent frontal attack on the problem. Regardless of how strong our convictions may be, it becomes a matter of good judgment as to how we can make the fastest progress.[1436]

When considering "how best to make progress against intolerance that has no rational basis," Curtis implicates his racist fraternity brothers, comparing them to the Appalachian locals and employees with whom he's dealt, and simultaneously recommends that their racism be indulged. [1437] "It is easy to legislate against prejudices," Curtis writes, "but that is not always the way of progress."[1438] Curtis moves on to an 'all or nothing' tactic, perhaps forsaking the appeal to pragmatism that he had just developed.

I do not think…that forcing a chapter of a professional fraternity to leave the campus because of the national fraternity's restriction against Negro members is a fair thing if social fraternities are to be allowed to continue regardless of similar restrictions… It is the element of unfairness in this case, as I see it, that hurts me. If the action were against all fraternities I might consider it rather poorly timed, but I would not feel the hurt that comes from seeing my Alma Mater doing what seems to me an unfair thing…[1439]

Curtis concludes with one last appeal to pragmatism but stops short of effectively supporting it. "Nor do I think that the proposed action against Eta Chapter will, at this time, promote the cause to which the action is dedicated," Curtis writes, "It will only end the existence of a chapter which is linked for some 600 of us to many other happy memories

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[1436] Curtis to Chairman, University of Colorado Board of Regents.
[1437] Curtis to Chairman, University of Colorado Board of Regents.
[1438] Curtis to Chairman, University of Colorado Board of Regents.
[1439] Curtis to Chairman, University of Colorado Board of Regents.

of days at the University."[1440] Others argued that shutting down the UCO chapter would sacrifice UCO's voice on the issue at the level of the national fraternity, and that leaving it open would push the fraternity toward the "seventy-five per cent of the communities where we have chapters accept[ing] the Negro socially" to automatically repeal the bylaw.[1441] Curtis did not include either of these arguments.

For one typically so eloquent, argumentative, and stubbornly independent and principled, in fact, this letter is fairly anomalous. It cedes ground on presumably higher ideals out of dedication to an institution (and, more specifically, one institution over another); further, it does so in a way that is poorly organized and occasionally a bit self-negating. It is possible but unlikely that Curtis composed it while distracted or rushing. It's far more likely that he struggled to reconcile his two positions, with mixed results. Socialization often acts as a moderating influence, and institutional loyalty may be seen as an example of socialization. Here, we see that Curtis' loyalty to both Alpha Chi Sigma and the TVA encouraged a moderate stance.

Curtis' letter reportedly helped the chapter win its appeal and reopen despite the discriminatory bylaw.[1442] Although he was happy to learn that the Board of Regents accepted the chapter's appeal that March, Curtis continued to press for desegregation, writing that the decision "is not a good reason for our Fraternity to hold fast to restrictions that never should have been adopted and now should be eliminated...I am hoping that the

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[1440] Curtis to Chairman, University of Colorado Board of Regents.
[1441] Lind to Chairman, University of Colorado Board of Regents, January 14, 1954; Dice to Curtis, March 24, 1954; Kuebler to Curtis, August 4, 1952.
[1442] Dice to Curtis, March 24, 1954.

next Conclave [annual meeting] will abolish all restrictions based on race or religion."[1443] That June, the fraternity did just that; Curtis was "pleased to note that the restrictions against the Negro have been lifted."[1444]

Not two months after the vote to end desegregation, several fraternity brothers organized a dinner in honor of brother "Jawn" Kuebler, the Grand Recorder perhaps most involved in the controversy at the national level, for his extended service to the organization.[1445] While corresponding with Curtis about the dinner, organizer Sidney Kirkpatrick wrote, "The best news of all is the possibility that you can be with us for the dinner…In that case I want you to take part in our program to the extent of reading one or two particular paragraphs from that famous 'Nigger-Day in Posy County' letter. I'll return it to you in due course."[1446] Curtis actually did not attend the dinner, citing his need to stay in Knoxville for TVA Board work, so one cannot know whether he would have read the excerpt Kirkpatrick requested.[1447] It is apparent, however, that Curtis had held onto it as a keepsake; he lent it to Kirkpatrick for the dinner and a "Big Scrapbook…about our colorful friend."[1448] Further, Curtis had recently encouraged Kuebler to renew his old practice of writing as 'The Philosopher of Posey County.'[1449] Despite his opposition to the official

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[1443] Harry A. Curtis to Mr. Marion E. Dice, March 26, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1444] Harry A. Curtis to Mr. John R. Kuebler, July 6, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1445] Sidney D. Kirkpatrick to Dr. Harry A. Curtis, August 27, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1446] Kirkpatrick to Curtis.
[1447] Harry A. Curtis to Mr. Sidney D. Kirkpatrick, September 27, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1448] Sidney D. Kirkpatrick to Dr. Harry A. Curtis, August 20, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Kirkpatrick to Curtis, August 27, 1954; Sidney D. Kirkpatrick to Dr. Harry A. Curtis, September 22, 1954, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1449] Curtis to Kuebler, August 26, 1952.

segregation of his fraternity, then, it appears that Curtis tolerated—and may have encouraged—racist humor that would have discouraged Black inclusion.

7.3 Curtis and Women

Another perspective on Curtis and his masculinities can be gleaned from documents showing something of his relationships with the women in his life and his attitude on women's rights and roles more broadly. As with race relations, Curtis held progressive views on gender relations. I posit that this was partly due to his strong adherence to frontier masculinity and frontier culture more broadly: his strong support for individual independence extended to women. It was also partly due to his relatively secure degree of masculinity.

7.3.1 Curtis and Family

In his autobiographical manuscript, Curtis directly shares very little about his childhood family members except for his father. The only direct mention of his mother appears when describing the family's economy and self-sufficiency. "My mother put up hundred[s] of jars of jams and jellies and preserves," he wrote.[1450] Based on contextual evidence from his manuscript, however, one can only imagine that his mother was a very tough and hard-working woman. She raised at least six children on Colorado farms, frequently moving between properties, without the assistance of electrically powered appliances, lighting, or heat.[1451] All of the subsistence farm work that Curtis mentions—feeding cows, horses, hogs; milking cows; storing hundred-pound sacks of flour; growing, using, and preserving

[1450] Curtis, "Handwritten Autobiographical Account," 21–22.
[1451] Curtis, 22–23.

produce and meat; and so on—all would have reasonably involved his mother to a certain degree.[1452] As Ruth Schwartz Cowan describes in *More Work for Mother*, the life of any housewife around the turn of the 20th century was little more than exhausting drudgery—particularly without household servants.[1453] Although Curtis did not make a big deal of all of this in his autobiographical manuscript, he likely would have been familiar enough with his mother's work to naturalize the image of a strong, hardworking woman.

At the same time, it's unlikely that Curtis' mother disagreed with or defied her husband on much. Each time Curtis mentions a decision being made in his household, it is only his father that he mentions. Curtis assumed, for example, that his father had concluded the family should focus on subsistence farming over cash crops: this was his explanation for their lifestyle.[1454] Later, when Curtis wished to attend high school, "My father encouraged me to continue my education, but he did not have to tell me that he could not help me with funds," he wrote, leaving his mother absent from household decisions about Curtis' education and the household budget.[1455]

Curtis married Irene "Polly" Hall in 1911.[1456] Harry and Polly Curtis had two daughters, Jeanne and Patricia, and they remained married until death.[1457] Harry's

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[1452] Curtis, 22–23.
[1453] Ruth Schwartz Cowan, *More Work for Mother: The Ironies of Household Technology from the Open Hearth to the Microwave* (New York: Basic Books, 2011).
[1454] Curtis, "Handwritten Autobiographical Account," 21.
[1455] Harry A. Curtis, "Handwritten Autobiographical Account," 1962, 30, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections This is not abnormal for the time but is worth noting.
[1456] Cattell, "Curtis, Dean Harry A(Lfred)"; D. A. Williams to Hon. Edward J. Thye, June 4, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1457] Cattell, "Curtis, Dean Harry A(Lfred)"; Williams to Thye, June 4, 1948; "Dr. Harry A. Curtis Dies Here At 79."

relationships with these three women tells something of the attitudes that he 'brought to the table' as well as the influence they had on his attitude toward other women.

Polly Curtis appears to have been a well-suited counterpart to Harry: a well-educated and likely independent woman from the American West. She almost certainly hailed from Colorado and had been in Harry's 1908 graduating class at UCO.[1458] Throughout Harry's varied career, Polly became acquainted with or befriended many of his colleagues and their wives, and she particularly enjoyed being a part of the academic communities that employed Harry.[1459] There's no evidence that Polly worked for income outside the home and no information on charitable or community initiatives with which she might have been involved; however, Harry and others expressed respect and appreciation for his wife's influence on his work.[1460] Harry, for example, opened his speech at the 1957 dinner in his honor by praising Polly, "the woman who has been responsible for anything good that I have accomplished."[1461] Such praise was vague enough that it could have simply been acknowledging Polly's supportive role through household and emotional labor; regardless of the details, however, it was valued.

Polly had power in the relationship, which more closely resembled a partnership than a patriarchal structure, and Harry's comfort with this is most clearly indicated by jokes

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[1458] Curtis, "Handwritten Autobiographical Account"; Granger, "Dr. Curtis Still Tough Despite the Tears."
[1459] Harry A. Curtis to William L. Slate, March 21, 1950, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis to Sheldon, May 10, 1948; Howard Howie to Dr. Harry A. Curtis, February 26, 1949, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Gordon R. Clapp to Mr. L. L. Huntington, March 5, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account," 68.
[1460] Clapp to Huntington, March 5, 1957; H. A. Curtis, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1461] Curtis, "Dinner Meeting in Honor of Dr. H. A. Curtis."

related by and about the two. When recalling his return to the Sheffield/Muscle Shoals area upon joining the TVA, Curtis once wrote a friend, "I had a pleasant surprise when I returned in 1933 to discover that I had left something over one hundred dollars on deposit in a Sheffield bank since 1918. My wife promptly confiscated the money on the grounds that I had been happy for 15 years without it."[1462] Though this 1948 narrative fits into a slightly derisive vein of midcentury husband-earns-wife-spends jokes that emphasize the status of the husband as the breadwinner, it indicates that Polly displayed a certain degree of economic power and shrewd wit. Further, that Harry related it to an acquaintance shows a level of good-humored comfort and possibly even pride in her commandeering the sum. (One might also note that the light treatment of such a sum of money, especially several years into the Great Depression, signals a high degree of economic security.) In his autobiographical manuscript, Harry explains the importance of his prized photo albums from his childhood by relating that, "My wife says, jokingly, that if our home should catch fire, I would first rescue my albums, then the painting of one of my boyhood homes, and then look around for my wife."[1463] Such a joke would only exist if the couple were on very good terms, and Harry would have repeated it only if he enjoyed or took pride in Polly's wit. Edythe Taylor, Harry's secretary in the 1930s, recorded one more joke that revealed the power dynamic in this relationship—one that involved the Curtis dog, Laddie:

> Laddie the dog was very intelligent & obedient. He would play dead, shake hands, etc. One day when Dr. Curtis was sick in bed I went to the home for dictation. Made a long distance call for him to cancel a speaking engagement in another city. The man on the other end of the line insisted on speaking to Dr. C. Mrs. Curtis & I told him not to get out of bed. Laddie was in the bedroom & Dr Curtis extended his hand to Laddie & said: 'We are not going to let these women boss us,

[1462] Harry A. Curtis to W. Mitchell, May 10, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1463] Curtis, "Handwritten Autobiographical Account," 29.

> are we Laddie?' Whereupon Laddie extended his paw and the gentlemen shook hands in triumph.[1464]

Taylor does not reveal whether Harry defied his wife and secretary in getting out of bed, and that's likely unimportant to her or to us. Harry's initial reaction is telling enough. Rather than react in anger to his wife and secretary for commanding him, Harry jokingly equated his status to that of the family dog, a dependent animal whose obedience is required, and spoke to it as if they were unionized brethren opposing their employer. A man lacking security would likely react with anger; only one who was fairly comfortable with his status and with the situation would turn it into such a joke. (It's significant that this took place in the domestic sphere and that both women were exerting authority in the traditional role of the woman caregiver; Harry may not have reacted the same way if they were in his office bossing him about his engineering work.)

Polly wasn't always happy with moving around so much for Harry's career. One must remember that, in his varied life, his wife made nearly every geographical relocation that he did, with daughters in tow for much of it. One glimpses the inconvenience of such a lifestyle when learning that they had bought a house in Mapleton, New Jersey, in 1920 or 1921 when Harry started his job with the International Coal Products Corporation, only to see Harry move to South Clinchfield, Virginia, in 1921 to help with the corporate subsidiary's commercial-scale plant. It's unclear whether his wife and daughters eventually followed him for what appeared to be a temporary project; however, they did move to New Haven, Connecticut in summer or fall 1923 for Harry's Yale professorship. Things didn't even seem settled in, since, as Harry wrote to a friend that October, "We rented a furnished

[1464] Taylor, "Edythe Helen Taylor Scrapbook," 5.

house here in New Haven. Didn't want the furniture but had to take it to get the house."[1465] Polly, as the homemaker, was likely the one to handle the logistics of storing and sorting household items until they could find an unfurnished situation that suited. By 1948, Polly was familiar enough with the inconveniences of moving to clearly dislike it: When the Curtises planned their return to Knoxville for Harry's position on the TVA Board, Harry wrote a friend that Polly "is naturally dreading the hardship of moving."[1466]

It wasn't just the logistical or physical hardships that bothered Polly; emotional attachments to certain locations bothered her as well. Upon hearing the news that Curtis would return to Knoxville to join the TVA Board, his friend Sidney Kirkpatrick relayed to Harry a conversation he'd had with his wife:

> Bonnie and I decided last night after a very thoughtful consideration of all factors involved that Polly would really like to get back to that beautiful home and garden where we once visited you in Knoxville. Of course, we remember how the good lady protested about going to New Haven and then cried because you took her away. It doesn't take long, of course, for strong bonds to develop.[1467]

This was, of course, part speculation by the Kirkpatricks; however, it was based on their collective recollection and impression of Polly Curtis.

Their speculation that Polly's sentiments were a major factor in this career change, in fact, are supported, and this leads to another point about her relationship with Harry Curtis. Polly likely had some power in the relationship to influence major moves and Harry's career changes, at least at this point. An extended obituary of Harry Curtis in *The*

[1465] Harry A. Curtis to Mr. Earle E. Daughton, October 17, 1923, Box 1, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1466] Dr. Harry A. Curtis to Mr. S. D. Kirkpatrick, May 11, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1467] Kirkpatrick to Curtis, May 6, 1948.

Knoxville News-Sentinel went into a bit of detail on this period in their lives, probably based on a previous interview with Harry Curtis:

> ...Dr. Curtis and his wife, Polly, had moved … [to] the engineering deanship at Missouri … While there, he told Mrs. Curtis: 'You've followed me all over the United States, and raised children in places where it is not very easy to raise children. You can pick out the last place and we'll settle down and call that home.' ... So she chose Knoxville and he agreed, and they decided they'd come here after his retirement from the university. But President Truman moved up the schedule by naming him to replace his friend, Dr. Morgan, on the TVA board in 1949.[1468]

This may have been a reason why Harry wrote to Edythe Taylor as early as 1946, "I am planning tentatively to return to Knoxville when my job here is done to my satisfaction."[1469] When the news broke in 1948 that Harry was appointed to the Board, one friend wrote that he recalled Polly had wanted this "for a long time"; another wrote that he knew that it had been Harry and Polly's "desire to return to Knoxville."[1470] A fellow dean of engineering and friend of the Curtises also wrote, not knowing if Polly wished this move, but hoping: "I hope that Polly will be satisfied with this last of her many shifts from public to collegiate life and back again."[1471] Curtis replied, "She will be happy in Knoxville, I believe, if we can find a comfortable house."[1472]

Then again, it is possible that Polly's desire only counted so strongly at this point because it aligned with Harry's. She had, after all, "followed me all over the United States,"

[1468] "Cancer Fatal to Crusader."
[1469] Harry A. Curtis to Mrs. Edythe H. Taylor, February 27, 1946, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1470] Barnett F. Dodge to Dr. Harry A. Curtis, May 11, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Dean A. Harvey to Dr. Harry A. Curtis, May 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1471] Ham to Dr. Curtis, May 31, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1472] Harry A. Curtis to Mr. Barnett F. Dodge, May 24, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

something that Harry seems to have recognized was not easy but demanded of her nonetheless.[1473] Further, as an obituary in *The Knoxville Journal* relates, "A minor problem arose when he [Harry] retired from TVA. Mrs. Curtis wanted to live in Connecticut to be near their two daughters in New York. Dr. Curtis 'persuaded' her to remain here."[1474]

Overall, Harry Curtis seems to have valued balancing his work life with his involvement in his home and family. When recounting his extremely busy time at Yale in his autobiographical manuscript, Harry adds, "I have mentioned above [only] a few of my various activities while there, for I had a home and family and children in school and we had many houseguests and often visited friends."[1475] Later, when Harry was UMO Dean of Engineering and both of his daughters were in college there, his family regularly entertained at least one of his daughter Patsy's college friends at home on Sunday evenings, occasions that "were among my most pleasant college memories," one of her old friends recalled.[1476] Also during this period, Polly Curtis spent some time in the hospital, dealing with health complications that involved her eyesight. With Polly away, Curtis explained to Edythe Taylor, "I am both father and mother to the daughters at home."[1477]

Despite the value he seems to have placed on his contributions to the family, his frequent travel and long hours at work in various phases of his life must have made that difficult.[1478] During his 1916 military service, Harry left his wife and first young daughter

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[1473] "Cancer Fatal to Crusader."
[1474] "Dr. Harry A. Curtis Dies Here At 79."
[1475] Curtis, "Handwritten Autobiographical Account," 71.
[1476] Nell Hurley Gross to Dr. Harry A. Curtis, May 5, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1477] Curtis to Taylor, January 18, 1939.
[1478] Curtis, "Handwritten Autobiographical Account"; Taylor, "Edythe Helen Taylor Scrapbook."

in Boulder "from April to September but I made frequent trips home," he recalled.[1479] Once the U.S. joined the war in 1917, Harry again left them "for a few months" before his transfer to Washington, D.C., and then to Sheffield, Alabama allowed him to bring them along.[1480] In 1921, when the International Coal Products Corporation transferred Harry to South Clinchfield, Virginia, "I left my family for the time being in the home I had bought in Mapleton, N.J.," Harry wrote, and did not clarify that they followed him there, so he may have lived away from his wife and daughters until they all moved to New Haven, Connecticut in fall 1923.[1481] Even after he entered the Yale faculty in New Haven, Harry never stayed at home long. He filled his first year there with "monthly trips to South Clinchfield Va. where I still directed the care of the idle carbocoal plant. Also I made frequent trips to Washington to complete the Nitrogen Survey for the Department of Commerce," which he completed in May 1924, and "I continued serving as a consultant for the Fixed Nitrogen Research Laboratory and made frequent calls at the laboratory," where he was appointed Consulting Chemist in March, 1926.[1482] He was also called to Washington frequently for his work on the Muscle Shoals Inquiry in 1925. He traveled to Europe three times in 1926-1927 to consult for the National Fuels Corporation and then spent several months traveling Europe as part of his trip to the International Nitrogen Conference for the USDA. He also recalled that "For a few years beginning in 1927 I was a consultant for the Virginia-Carolina Chemical Co. and made occasional trips to the company's plants," presumably in those southern states, "And I attended many scientific

[1479] Curtis, "Handwritten Autobiographical Account," 66.
[1480] Curtis, 66; Harry A. Curtis to Lt. Lyman R. Flook, October 1, 1956, Box 2 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1481] Curtis, "Handwritten Autobiographical Account," 127; Curtis to Daughton, October 17, 1923.
[1482] Curtis, "Handwritten Autobiographical Account," 69–70; Curtis to Daughton, October 17, 1923; Cattell, "Curtis, Dean Harry A(lfred)"; Curtis, "Vita Harry A. Curtis."

meetings and lectured at many places in the United States."[1483] In September 1933, when Curtis moved to Knoxville for his first position with the TVA, Polly and their younger daughter remained at their home in Woodbury, N.J. for the winter "[s]ince it appeared that I was likely to be traveling a good deal between Knoxville, Muscle Shoals, Washington and elsewhere..." He frequently visited them and "brought" them to Knoxville in April 1934.[1484] His daughters, then—one born in 1914 and the other around 1920—grew up accustomed to having their father away frequently and, sometimes, for prolonged durations.[1485]

For her part, Polly seemed fairly independent and able to manage without her husband's constant presence. One sees indication of this later in their lives, when Polly traveled independently of Harry to visit their adult daughters and grandchildren. More than once, she rented a summer cottage on the coast of New England and, with the help of a nursemaid, vacationed with the grandchildren, and with her daughters when they were able to join.[1486] In 1958, while Harry took his road trip to California and through several state parks, Polly spent "a month or so" in New York with the daughters and grandchildren.[1487] Such trips are not an indication that the couple was unhappy or that they disliked traveling together, however. After Harry retired from the TVA Board, the two traveled frequently around Europe and the United States.[1488]

[1483] Curtis, "Handwritten Autobiographical Account," 70–71.
[1484] Curtis, 242–43. His older daughter was almost certainly in college at this point. See Curtis, 66; Curtis to Taylor, January 18, 1939.
[1485] Curtis, "Handwritten Autobiographical Account," 66; Curtis to Flook, October 1, 1956.
[1486] Curtis to Sheldon, May 10, 1948; Curtis to White, May 22, 1948; Curtis to Boarts, June 2, 1948.
[1487] Harry A. Curtis to John R. Kuebler, June 27, 1958, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1488] Curtis to Taylor, 1959; "Dr. Harry A. Curtis Dies Here At 79"; "Cancer Fatal to Crusader."

The solo trips that Polly made to visit her adult children and grandchildren also does not seem to indicate that she valued spending time with them more than Harry, since the latter had professional commitments. The couple's disagreement on whether to move closer to their progeny after Harry's retirement, on the other hand, may indicate that this was the case.[1489] Regardless, correspondence between and about Harry and his daughters, in addition to the interesting tone that Harry takes in the autobiographical manuscript he wrote (with his daughters as the primary audience) indicate that he had a strong relationship with them, and that they valued certain telling qualities in each other.

Harry Curtis appreciated boldness in both of his daughters. This is seen most clearly in correspondences he wrote that mentioned his youngest daughter, Patricia (nicknamed "Patsy" and "Pat"). In 1923, Curtis wrote to a friend that Patsy, who was not yet of schooling age, "raised Cain all day long. She has a cat about as big as she is which she carries aroung [sic] by the neck most of the time. Occasionally the cat scratches her up, but it doesn't help him any."[1490] That he updated a friend on this shows that he was not ashamed of her boldness; rather, his remark shows pride or at least amusement. Another parent might look positively at such scrappiness in a child but then lecture her to 'act like a lady' once she's grown; however, Harry's attitude, at its core, does not seem to have changed as his daughters matured. In 1939, both of Harry's daughters attended college at UMO while he was the dean of engineering there, and he included them in his news to Edythe Taylor. "Jeanne is thoroughly enjoying her graduate work and is doing very well in school," he wrote of his older daughter.[1491] "Patsy," he continued, "doesn't get as high grades but she

[1489] "Dr. Harry A. Curtis Dies Here At 79."
[1490] Curtis to Daughton, October 17, 1923.
[1491] Curtis to Taylor, January 18, 1939.

leads a gay life. Whenever I spy her on the campus, there is at least one young man trailing along. I have offered her one of Laddie's old collars so that she might lead the boy on a leash," he wrote, referring to the family dog.[1492] That Harry *could* and *did* tease his daughter about her boy friends—and, by implication, her romantic and sexual development—at this time is worth highlighting, as is the fact that he felt comfortable writing his former secretary about it in the family news. First, it shows that Harry and Patsy were close enough that he could mention it to her at all. Had the joke caused a fight over the need for Harry to give Patsy privacy, for example, Harry probably would not have mentioned it to Taylor. Further, Harry's joke seems to be part of a habit of gently teasing his daughters, indicated by his casual mention of it to Taylor as well as a list of undated inside jokes that Harry had with his daughters.[1493]

In 1951, Jeanne wrote her father to urge him to "start writing a little book of essays, Dad, about how you look at things and the philosophy you have evolved over the years," noting that her sister supported Jeanne's idea as well.[1494] "You know Pat and I have always felt you had such liberal good sense and balance, and its [sic] a quality rather rare in these lively times," Jeanne wrote and then elaborated in a paragraph that's incredibly telling about Harry, his daughters, and his relationship with them:

> Pat and I have come to appreciate the kind of unprejudiced, free thinking way that you and Mother brought us up. You may feel and certainly Mother feels that we may have pushed the limits of liberality a little farther than you would, but it is no accident that we believe as we do. I mean the basic things that are good things we learned from childhood--things like a healthy skepticism about pretense and humbug, a willingness to judge people for themselves instead of their position or

[1492] Curtis to Taylor.
[1493] Curtis to Taylor; "Handwritten List of Curtis Family Jokes," n.d., Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1494] Jeanne Webber to Harry A. Curtis, November 15, 1951, Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

> title, an understanding of fairness, and no envy of great wealth. Also a sort of pioneer spirit of self-confidence and curiosity about life. These are all things we got at home. You don't know how many people I run into who aren't interested in anything outside their narrow world; I mean people supposedly educated and in an upper economic stratum, who won't take the trouble to understand anything complicated. Whereas I remember you explaining astronomy to me at the age of seven, logarithms at about 9, and encouraging me to think for myself. Of course sometimes I tend to bite off more than I can chew out of; maybe an excess of self-confidence; but on the other hand, I don't have to go to a psychiatrist, either. You see I think it all comes from your own philosophy and the ideas you have passed on, even unconsciously, to us.[1495]

When analyzing this passage, it may first be worth noting that Jeanne believed her mother to be more conservative than her father, at least with respect to her daughters' choices and philosophies. If this belief is true, there are several possible factors influencing that difference, from divergent backgrounds to exposure to different people and ideas throughout their lives. One possible factor is that Harry may have felt more able to 'afford' a liberal or more lenient approach to his daughters' "push[ing] the limits." Polly, having lived as a woman in the late 19th and early 20th centuries, could have naturally been more sensitive to and fearful of the possible negative impacts of the choices that her daughters, as women, made. Another possibility is that Harry, as a man strongly associated with various masculine archetypes, may have been more open to certain 'masculine' traits in his daughters, and it seems he actively cultivated such traits in them.

As a man with traits that strongly align with white-collar masculinity, Harry encouraged a "curiosity about life," Jeanne recalls, as well as a willingness to "take the trouble to understand [something] complicated." Not only that, but Harry—ever the teacher—taught Jeanne relatively complicated and traditionally "male" subjects like

[1495] Webber to Curtis.

astronomy and logarithmic mathematics at a surprisingly early age. The pursuit of objectivity that is often associated with white-collar masculinity appears here, as well, as when Jeanne mentions that Harry taught them "an understanding of fairness" and set an example of "liberal good sense and balance." Harry even appears to have instilled in them "no envy of great wealth," or a deprioritization of money that is often associated with white-collar masculinity.

Harry apparently cultivated traits associated with physical and frontier masculinities in his daughters, as well. This includes a criticism of hierarchy and a dedication to independence, both qualities of frontier masculinity. Jeanne clearly valued Harry's "encouraging me to think for myself" and cultivating a "pioneer spirit" and "a willingness to judge people for themselves instead of their position or title," implying that doing so was fairly unusual and possibly even ahead of the time in contrast to broader U.S. culture. The "healthy skepticism about pretense and humbug" that Harry taught his daughters was also a fundamental opposition to innate hierarchy; this was also likely rooted in values associated with frontier masculinity but is expressed in a way that also suggests physical masculinity by its association with a down-to-earth culture one commonly finds in lower classes. Finally, it's worth noting that Jeanne mentions self-confidence twice, emphatic that her father had a hand in developing this trait that she may even have had in "excess" as an adult. This quality—and especially having it to a degree that one might "bite off more than I can chew"—is strongly associated with physical masculinity.

Both daughters were well educated and seem to have been fairly successful in their careers, continuing to work even after marrying and having children. Patsy earned at least

a B.A. and went into publishing and editing.[1496] By 1946, Harry reported to Taylor that "Patsy is working for the Macmillan book concern and enjoys her job and environment," living in New York City. She likely remained in New York City the rest of her life, where she grew into the name "Pat," moved to the Alfred Knopf publishing company, and then worked up the ranks of *Family Circle* magazine to become Copy Director by 1976.[1497] She and her husband probably divorced in the late 1960s or 1970s, a growing but still quite rare occurrence in this time period and a possible marker of the independence or self-confidence her father had instilled in her.[1498]

Jeanne earned at least a Master's degree. "Her M.A. thesis seemed to me nearly the equivalent of a Ph.D. dissertation," Curtis noted of the latter with pride.[1499] By 1946, she was also living in New York and worked for *Fortune* magazine, a job to which she returned shortly after the birth of her first child and at which she remained through at least 1948.[1500] By 1962, she and her family had moved to Rye, a suburb of New York City, where she was occasionally "up to her ears in free lance projects," as her husband put it.[1501]

[1496] Curtis, "Handwritten Autobiographical Account," 77; Curtis to Taylor, February 27, 1946; Edythe H. Taylor to Mrs. Patricia Curtis, 1977, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Patricia Curtis to Mrs. Edythe H. Taylor, June 6, 1977, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1497] Curtis to White, May 22, 1948; Curtis to Flook, October 1, 1956; "Dr. Harry A. Curtis Dies Here At 79"; "Curtis Memorial Service Sunday," November 5, 1967, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; "Edythe Helen Taylor Scrapbook," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Taylor to Curtis, 1977; Curtis to Taylor, June 6, 1977.
[1498] "Curtis Memorial Service Sunday"; Curtis to Taylor, June 6, 1977.
[1499] Curtis, "Handwritten Autobiographical Account," 76.
[1500] Curtis to Taylor, February 27, 1946; Curtis to White, May 22, 1948.
[1501] Gordon Webber to Harry A. Curtis, March 4, 1962, Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

Both women had children: Jeanne had three daughters, and Pat had a son and a daughter.[1502] Both of Pat's children were artistically inclined and remained in New York City; in 1977, she reported to Edythe Taylor that her daughter had graduated art school and worked as an assistant art director "for a new magazine called *Us*," while her son was in his senior year at the Mannes College of Music studying classical guitar.[1503]

Harry maintained a good relationship with his daughters and their children. He occasionally visited them in New York, where "but Jeanne and Patsy keep me busy on a program they have planned for my short stay," as he once wrote to a friend.[1504] The daughters likewise visited their parents in Knoxville.[1505] Jeanne and Pat sometimes traveled to Knoxville with their families in tow, and at least once, it seems, they flew down without husbands or children to spend a New Year's weekend with Harry and Polly.[1506] Plans for longer visits were apparently set before Harry's retirement. In 1962, Harry and Polly contributed funds to an expansion of Jeanne's house in Rye with the idea that they might move into part of it.[1507] (This probably contributed to the disagreement between Harry and Polly over remaining in Knoxville after his retirement.[1508])

"Both my children remember their grandparents very well, and especially enjoy telling stories about their grandpa and the games he used to play with them," Pat wrote to

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[1502] Taylor to Curtis, 1977; Curtis to Flook, October 1, 1956.
[1503] Curtis to Taylor, June 6, 1977.
[1504] Curtis to Sheldon, May 10, 1948.
[1505] Curtis to Taylor, February 27, 1946; Curtis to Sheldon, May 10, 1948; Curtis to Taylor, 1959; Harry A. Curtis to Mrs. Edythe Taylor, March 7, 1961, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."
[1506] Curtis to Taylor, March 7, 1961; Curtis to Taylor, 1959.
[1507] Webber to Curtis, March 4, 1962.
[1508] "Dr. Harry A. Curtis Dies Here At 79."

Taylor in 1977.[1509] His grandson Steve, at age 8, wrote a report about Harry explaining that described him as very smart and "a very great man" who was good at checkers and "other games like that." [1510] Around that time, Pat recalled, Steve got into an argument with other children by bragging that Harry knew "more than the Stamford Museum," an incident "that tickled my father a great deal."[1511] Harry's granddaughters "love you and think of you as a lot of fun and kind and wonderful," Jeanne wrote to him in 1951; however, she encouraged him to write his autobiography in part for them, since "Living so far away and seeing you infrequently they may not have a chance to appreciate your ideas as much as Pat and I do."[1512] Steve, the only grandson, was almost certainly the youngest, and this may helped him feel closer to Harry. He was only 9 when Harry retired from the TVA Board and had more time on his hands to do "just exactly what he wanted to do," as one newspaper reported, with a list that included "spend[ing] time with his grandchildren."[1513] There's no clear indication that gender influenced Steve to look up to or identify with Harry more than the other grandchildren, but it's possible. Regardless, his granddaughters had fond memories of Harry and wrote letters to him before his death. One flowery card from his granddaughter Jackie in 1958 was filled with grades she'd earned in school, plans to enter horse shows, and piles of X's and O's in her sign-off.[1514] For his part, Curtis seems to have adored and taken pride in them all. After visiting his first granddaughter, for example, Curtis drew on some of his characteristic values when describing her to Edythe Taylor.

[1509] Curtis to Taylor, June 6, 1977.
[1510] Palitz, "My Grandpa."
[1511] Curtis to Taylor, June 6, 1977.
[1512] Webber to Curtis, November 15, 1951.
[1513] Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis"; Palitz, "My Grandpa."
[1514] Jackie to Harry A. Curtis, February 1, 1958, Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

"The baby is flourishing," he wrote, "She is ten months old now and very busy exploring the world."[1515]

7.3.2 Curtis and Edythe Taylor

Another glimpse of Harry Curtis' relationship with women can be seen in his professional and friendly relationship with Edythe Taylor. Taylor worked as secretary to Curtis for five years (1934-1939) when Curtis was Chief Chemical Engineer at the TVA. [1516] The two maintained a correspondence after his departure, and Taylor created a scrapbook of newspaper clippings, correspondences, and her own recollections of Harry and his family.[1517]

Taylor began working for Curtis on September 29, 1934.[1518] She recalled feeling "reluctant to accept" the position because "I was without government experience in the secretarial field."[1519] Edythe may also have been intimidated by the fact that Curtis "had sent 3 girls back to stenographic pool & had described the secretary who left to go to a foreign country as a 'jewel.'"[1520] Curtis, however, was "insisten[t]," and he offered her a salary $1,000 more a year "than was allotted to this position," finally convincing her to "accept…the challenge."[1521] "Perhaps the fact that I had passed a 120-word a minute shorthand test with a perfect transcription was instrumental," she wrote; however, Curtis

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[1515] Curtis to Taylor, February 27, 1946.
[1516] "Edythe Helen Taylor Scrapbook"; Curtis to Taylor, February 27, 1946.
[1517] "Edythe Helen Taylor Scrapbook."
[1518] Taylor, "Edythe Helen Taylor Scrapbook," 10.
[1519] Edythe H. Taylor to The Honorable Harry S. Truman, Copy, February 4, 1966, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1520] Taylor, "Edythe Helen Taylor Scrapbook," 6.
[1521] Taylor to The Honorable Harry S. Truman, February 4, 1966; Taylor, "Edythe Helen Taylor Scrapbook," 6,8.

later told her that he employed men "at the Fertilizer Works at Wilson Dam…only if they had good personalities."[1522] It appears that Taylor understood that similar value was placed on her own personality.[1523]

Some information about Edythe Taylor may give clues to that personality. Taylor was white, and she was born in Knoxville, Tennessee in 1906, making her 28 years old when she started working as Curtis' secretary in 1934.[1524] She married shortly after starting work at the TVA; however, it's unlikely that the couple had children.[1525] Her husband, George W. Taylor, had attended college and probably played football there when he sustained an injury that would eventually result in a brain tumor.[1526] When he met Edythe, he worked as a football coach and teacher.[1527] He later worked at a local bank "for a few years" around 1939 and then at the TVA.[1528] By 1939, however, George was "ill" enough for it to factor in to the couple's decision to move to Wilson Dam for Edythe's work.[1529] This was likely associated with the tumor, which "resulted in a long illness and finally his demise."[1530] George had passed away by 1959, when Edythe was 53 years old.[1531] The fact

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[1522] Taylor to The Honorable Harry S. Truman, February 4, 1966; Taylor, "Edythe Helen Taylor Scrapbook," 8.
[1523] Taylor, "Edythe Helen Taylor Scrapbook," 8.
[1524] "Employment Contract (Field Service) for Taylor, Edythe H." (Tennessee Valley Authority, May 1, 1939), Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Taylor, "Edythe Helen Taylor Scrapbook," 10.
[1525] Taylor, "Edythe Helen Taylor Scrapbook," 8. Taylor had no children by 1939 (age 33), and she did not mention children in any of her correspondences or reminiscences. See "Employment Contract (Field Service) for Taylor, Edythe H."; Edythe Taylor to Harry A. Curtis, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Edythe H. Taylor to Jeanne Curtis Webber, February 2, 1966, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Taylor to Curtis, 1977.
[1526] "Employment Contract (Field Service) for Taylor, Edythe H."; Mr. and Mrs. Harry A. Curtis to Taylor, December 21, 1939; Taylor, "Edythe Helen Taylor Scrapbook," 10.
[1527] Taylor, "Edythe Helen Taylor Scrapbook," 10.
[1528] Taylor, 10; Mr. and Mrs. Harry A. Curtis to Taylor, December 21, 1939.
[1529] Taylor, "Edythe Helen Taylor Scrapbook," 9.
[1530] Taylor, 9–10.
[1531] Curtis to Taylor, 1959.

that George had attended college and Edythe had surely received some secretarial training sets them socially in the middle class. Possibly because of his illness, however, George may not have earned enough to financially support Edythe without her continuing to work after marriage.

Edythe was optimistic and genuine, possibly to the point of naïveté. In his infamous 1937 "New Year Resolutions" memorandum, Curtis described Taylor as "a member of the Optimists' Club," and added, "She needs to be," before beseeching his colleagues to accept her signature on paperwork whenever possible.[1532] Her optimism worked well in the office but seemed unable to handle Washington politics. During "the Congressional Investigation of TVA," Taylor traveled to Washington, D.C., to assist Curtis, who, she recalled, had "to shoulder the entire burden of answering questions about the technical phases of the Fertilizer Works program."[1533] Her most vivid memory, it seems, was her most unpleasant one:

> During the interrogation of Dr. Curtis by Representative Wolverton and others, I sat near Dr. Curtis at a table which held our correspondence files, in case the investigators desired reproductions of any of them. At one point, Representative Wolverton asked Dr. Curtis: Are you sure that you and your secretary, in collusion, have not held out any of your correspondence from this Committee?' To say I was hurt would be putting it mildly. I thought my reputation and also that of Dr. Curtis was ruined because a congressman of the United States had asked such a questions, After the sessions ended ... Tears were streaming down my cheeks and Attorney General Francis Biddle placed his arm around my shoulder and assured me it was to be considered routine procedure.[1534]

[1532] Harry A. Curtis to "A Dozen or So of My Esteemed Associates," "NEW YEAR RESOLUTIONS," January 1, 1937, Box 7, folder 3; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1533] Taylor to The Honorable Harry S. Truman, February 4, 1966.
[1534] Taylor to The Honorable Harry S. Truman.

There is evidence that she was fairly feminist. In the 1930s, for example, she subscribed to the periodical publication *Independent Woman* and occasionally saved articles from it.[1535] The article "What is Engineering" in the periodical's September 1932 issue so interested Taylor that she copied it out in full by hand. It described engineering and its various fields and encouraged readers (presumably women) to take night courses in engineering if they don't have time to attend a college program during the day.[1536] Taylor copied out a particularly inspiring by-line in more than one location of her scrapbook: "In civilizing energies of the world to the advancement of human welfare lie unique possibilities for feminine accomplishment."[1537] Perhaps this concept of feminine involvement in engineering encouraged her interest in the TVA and her work 'with' Harry Curtis. Her husband's protracted illness likely forced a degree of independence and self-sufficiency on Taylor, and, after his death, she traveled and pursued her own interests. This included a trip around Europe for genealogical research and to New York City, both that she likely took on her own.[1538] And it was not until age 71 that she "decided to give up my apartment & enter a retirement home."[1539]

At the same time, Taylor was a traditionalist to the extent that she valued masculinity in men and femininity in women. In her scrapbook, Taylor wrote, "Mrs Curtis…was [as] feminine as Dr Curtis was masculine" and later noted "Mrs. Curtis - a lovely and very feminine lady."[1540] She had married a football coach, a job that is often

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[1535] "Edythe Helen Taylor Scrapbook."
[1536] Ethel S. Bailey, "What Is Engineering?," *Independent Woman*, September 1932, qtd. in "Edythe Helen Taylor Scrapbook."
[1537] Bailey, "What Is Engineering?", qtd. in "Edythe Helen Taylor Scrapbook," 3, 6.
[1538] Curtis to Taylor, March 7, 1961; Taylor to Curtis, 1977.
[1539] Taylor to Curtis, 1977.
[1540] Taylor, "Edythe Helen Taylor Scrapbook," 5.

associated with a certain degree of physical and military masculinity.[1541] Further, what may have been fairly significant feminism for Knoxville in the 1930s may not have kept up with the times later on. In 1977, Taylor sent Pat Curtis a 1935 piece that Harry Curtis had written on the qualities of a good secretary, convinced that it would be good to publish in *Family Circle*.[1542] "It was fun to read my father's comments on secretaries, and I appreciate your sending them to me," Pat replied, "However, I'm afraid the article on the boss-secretary relationship, and Dad's remarks, while valid for the time they were written, are pretty irrelevant to the interests and needs of *Family Circle* readers today."[1543]

One can tell from her recollections that Taylor highly admired her employer. As she wrote to his daughter Jeanne in 1966, "I held Dr. Curtis in high esteem both as a person and as a professional man."[1544] Fittingly, she titled one reminiscence of him, "A Great Man and a Great Chemical Engineer: Dr. Harry A. Curtis."[1545] Alongside President Harry Truman, in fact, she held Curtis "at the top of my list of esteemed gentlemen"; in fact, she believed that "Many people stood in awe of Dr. Curtis."[1546] Her high opinion of him was rooted in not only his personal qualities, but in the work he did. "It was indeed a privilege and pleasure to be associated with a great man performing a great service to our country," Taylor wrote to his daughter Pat in 1977. "To me, a great man can be likened to a tree growing in the midst of a parched, dry land," she added, without explicitly extending the metaphor to include the contributions he made to agriculture.[1547] Whether due to the man

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[1541] Taylor, 10; Lisa M Frehill, "The Gendered Construction of the Engineering Profession in the United States, 1893–1920," *Men and Masculinities* 6, no. 4 (2004): 383–403.
[1542] Taylor to Curtis, 1977.
[1543] Curtis to Taylor, June 6, 1977.
[1544] Taylor to Webber, February 2, 1966.
[1545] Taylor, "Edythe Helen Taylor Scrapbook," 3.
[1546] Taylor to The Honorable Harry S. Truman, February 4, 1966.
[1547] Taylor to Curtis, 1977.

himself or the nature of the work she supported as his secretary, Edythe believed that "The five-year period I served as secretary to Dr Curtis was one of the most interesting periods of my life."[1548] Multiple times, she maintained that she never got angry at this fiery man: "Not once during the entire period did I ever get 'peeved' with Dr Curtis inside myself, even thought there was a 'Cussed by Curtis Club' in TVA. Dr Curtis was frank & outspoken," she explained in a letter to the Truman Library (addressing President Truman directly).[1549]

Taylor appears to have had a good relationship with Curtis' wife and daughters, as well. "About three weeks after I began work at TVA, I was married, and my husband and I became friends of the Curtis family," she wrote.[1550] This friendship likely included visits to their home and acquaintance with the couple's children and dog.[1551] After leaving the TVA, Curtis often updated Taylor on news of his wife and daughters; Taylor sent her regards to Mrs. Curtis.[1552] After Curtis' death, Taylor contacted his wife and each of his daughters at least once, mainly to discuss the Curtis papers that Taylor still held, but also to share and hear news.[1553] Although she seems to have maintained formal salutations for Harry and Polly, Taylor always addressed Harry's daughters by their first names and continued to use Pat's childhood moniker "Patsy" even after seeing her name printed as

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[1548] Taylor to The Honorable Harry S. Truman, February 4, 1966.
[1549] Taylor to The Honorable Harry S. Truman; Taylor to Webber, February 2, 1966.
[1550] Taylor, "Edythe Helen Taylor Scrapbook," 8.
[1551] Taylor, 5; Jeanne Curtis Webber to Mrs. Edythe Taylor, March 29, 1966, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Curtis to Taylor, June 6, 1977.
[1552] Curtis to Taylor, February 27, 1946; Harry A. Curtis to Edythe Taylor, May 13, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis to Taylor, March 7, 1961; Taylor to Curtis, 1948.
[1553] Taylor mentioned having corresponded with Polly Curtis in her letter to Jeanne in 1966. See Taylor to Webber, February 2, 1966; Taylor to Curtis, 1977.

"Pat Curtis" in *Family Circle*.[1554] Taylor showed fondness for and pride in Jeanne and Pat, saving clippings by them and following their careers with interest.[1555] "In December of 1974, I became aware that you were a Senior Editor of Family Circle. The December 1974 issue of Family Circle to me is the 'greatest' and I have a copy in my files," she wrote Pat with the warmth of a proud aunt, "Your two articles in this issue were impressive."[1556] Taylor also gushed about a Jeanne Curtis whom she erroneously believed to be Harry's older daughter, having read an article by her in *Family Circle* and listened to a live interview of her with enthusiasm.[1557]

For his part, Curtis seems to have valued Taylor highly. His initial salary offer to her was so high that the Personnel Department required her to work for 3 months at the standard rate before they increased her salary to the rate Curtis had set.[1558] She must have been worth that and more to him, as she recalled earning "other increases later."[1559] In 1937, Curtis declared her "an excellent secretary" in a memo to his colleagues.[1560] After he left TVA, Curtis continued to correspond with Taylor for decades, well beyond the standard Christmas cards that the Curtises exchanged with many acquaintances. He shared news on the family and even the family dog.[1561] In 1946, when sharing his tentative plans

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[1554] Taylor to Webber, February 2, 1966; Taylor to Curtis, 1977; Taylor to Curtis, 1948. Harry Curtis likewise addressed her as Mrs. Taylor in his letters to her. See to Taylor, May 13, 1948.
[1555] "Edythe Helen Taylor Scrapbook"; Taylor to Curtis, 1977.
[1556] Taylor to Curtis, 1977.
[1557] Taylor to Curtis; Curtis to Taylor, June 6, 1977.
[1558] Taylor, "Edythe Helen Taylor Scrapbook," 8.
[1559] Taylor, 8.
[1560] Curtis to "A Dozen or So of My Esteemed Associates," "NEW YEAR RESOLUTIONS," January 1, 1937.
[1561] Curtis to Taylor, January 18, 1939; Mr. and Mrs. Harry A. Curtis to Taylor, December 21, 1939; Curtis to Taylor, February 27, 1946; Curtis to Taylor, May 13, 1948; Harry A. Curtis to Edythe Taylor, Christmas card, 1950, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Edythe Taylor, Christmas card, 1958, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special

to return to Knoxville, Curtis wrote to Taylor, "As merely a TVA consultant I might not rate a secretary, but if I should, you know that I would be happy to have you working with me again."[1562] (Taylor had enjoyed working for him enough to remember this suggestion when he was nominated to the TVA Board in 1948, for she offered her secretarial services, adding, "Needless to say, I would be happy to work for you again."[1563] It seemed that the Board staff was already in place, however, since Curtis replied that he would be "probably pretty well set" for office staff.[1564]) Once the Curtises had returned to Knoxville, Edythe probably visited them; over time, Harry more frequently expressed regret that "we never catch a glimpse of you, living in the same town."[1565] When Taylor wrote to Curtis' daughters in the years after his death, each remembered Taylor and recalled that Curtis "thought very highly" of her and her work.[1566]

When they worked together, Curtis treated Edythe with a level of respect and partnership that she found notable. "Dr. Curtis stated I was working **with** him to accomplish a task and not **for** him," Taylor recalled, underlining each of the emphasized words four times.[1567]

This recollection is affirmed by Curtis' 1946 letter that mentions to Taylor the possibility of her "working with me again."[1568] The relationship was also a friendly one. When he was away on vacation, he wrote to update her on their time as if she were a friend. One letter

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Collections; Curtis to Taylor, 1959; Curtis to Taylor, March 7, 1961; Curtis, "Handwritten Autobiographical Account," 78.
[1562] Curtis to Taylor, February 27, 1946.
[1563] Taylor to Curtis, 1948.
[1564] Curtis to Taylor, May 13, 1948.
[1565] Curtis to Taylor, 1958; Curtis to Taylor, 1959; Curtis to Taylor, March 7, 1961.
[1566] Webber to Taylor, March 29, 1966; Curtis to Taylor, June 6, 1977.
[1567] Taylor, "Edythe Helen Taylor Scrapbook," 4.
[1568] Curtis to Taylor, February 27, 1946.

from Petoskey, Michigan, informed her, "We are having a plea[sa]nt trip. Attended Jeanne's graduation and c[a]me on up here..." before relating plans for the rest of their holiday.[1569]

Beyond symbolic prepositions and vacation letters, one may be able to tell something of their working relationship through a piece that Curtis wrote on secretaries. Edythe Taylor once sent him a copy of an article titled, "Does It Pay to be a Good Secretary?" published in *Independent Woman* in September 1932.[1570] Dorothy Thomas, the author of the "facetious" article (as Taylor described it), stressed the selflessness of secretaries; their willingness to be doormats; and their relationships with their employers, who valued holding onto a good secretary but tended to take all their extra work and dedication for granted nonetheless.[1571] "A secretarial position is really the most feminine of jobs," Thomas claimed, one that combined a woman's maternal instincts with her "passion for being a doormat." In such a position, the employer ends up dictating every detail of her life, from where she lives to what she wears to whom she associated with or marries. "Though he may appear to take her for granted, a man rarely mentions his secretary to his family or friends without praise," Thomas asserts, "This may simply be the same masculine vanity...a secretary is one of his possessions that he's trained & he doesn't mind telling the world he's a swell trainer." Thomas spends a portion of the article discussing the desired appearances of secretaries, pointing out that, though there are rarely romantic

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[1569] Harry A. Curtis to Mrs. Edythe H. Taylor, June 22, 1936, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1570] Dorothy Thomas, "Does It Pay to Be a Good Secretary?," *Independent Woman*, September 1932, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Mrs. Edythe Taylor, Note, April 13, 1935, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1571] Taylor to Curtis, 1977; Thomas, "Does It Pay to Be a Good Secretary?"

relationships between them and their bosses, "If you think a man isn't aesthetic in his taste in secretaries ask any employment agency. They nearly all want efficiency experts who look like Follies beauties. There are men who advertise in the newspaper for tall blondes or petite brunettes … Still, men have been known to fire girls simply because they were too attractive--they proved too distracting around the office." On the matter of rewards for secretarial work, Thomas explores the tendency for secretaries to heroize their employers and the idea that helping a man make decisions and run a business "gives the secretary a not unpleasant sense of importance." This seems to pale in comparison to the work that a good secretary does as "a cross between an efficiency expert, a buffer, a messenger boy, a valet, an accessory to the crime, a reception committee, a travel bureau and a doormat." When one hears news that a secretary has received or inherited a substantial sum from her boss or has even married him, Thomas concludes, "just figure the little girl deserved it!"[1572]

Curtis wrote a lengthy reply to the article, addressed to Taylor, in which he spelled out some of his thoughts on the matter, based on the 18 years that he had "had secretaries" to date.[1573] "While the article in the 'Independent Woman' exaggerates in many places," he opens, "there is much in it that is correct." On the qualities of a good secretary, Curtis claims that some are fixed personality traits that a certain woman already has; "The balance are qualities that may be acquired." Among his most "essential" personal qualities, Curtis claims to expect "a pleasing personality … i.e. cheerfulness, courtesy, patience, and the other things which make up an attractive personality." Perhaps in response to the article's emphasis on physical attractiveness, Curtis admits and defends his desire for such:

[1572] Thomas, "Does It Pay to Be a Good Secretary?"
[1573] Curtis to Taylor, April 13, 1935.

> I want a secretary who is reasonably easy to look at. Few women are beautiful, but those who are good looking in various degrees are not scarce. I realize that this attitude is unfair to those whom the Lord himself chose to make ugly; but considering that a man normally spends more time with his secretary than with any other one woman, I refuse to look day after day at a woman who is ugly.[1574]

Moving on to "the professional qualities"—presumably the ones that a person can cultivate—Curtis claimed to value accuracy and "good judgment" most highly, followed by the "ability to turn out work, neatness, punctuality, and a lot of other qualities." As for a response to the motivations for secretarial work that Thomas discusses, Curtis homes in on the suggestion that secretaries find fulfillment in helping a man carry out his business:

> Most of the women who have held this place in my office have been genuinely interested in the work and have given to it an intelligent devotion for which the salary could have been only one of the returns to them. I think that most of them felt that they were helping in carrying forward worthwhile undertakings, and that the interest and pride in the work was as much the source of inspiration to them as to myself.[1575]

Curtis did not solely focus on the secretary in his letter. Although Thomas focused on the demands placed on secretaries and attempted to paint their bosses with broad strokes, Curtis wrote, "I should add that there are also a lot of things that go to make a good Boss, and that I believe it is up to every Boss to be as good a Boss as he can. The Boss-Secretary relationship is not unlike many others in human affairs which require mutual goodwill and patience and a degree of personal compatibility." He closed on a fairly respectful note. "Remembering the years of faithful and intelligent service which secretaries in my office have rendered, I am deeply appreciative of their help all along the way," he wrote, adding lightly, "May the God of good secretaries bless 'em all."[1576]

[1574] Curtis to Taylor.
[1575] Curtis to Taylor.
[1576] Curtis to Taylor.

A few things stand out to me at the current moment of analysis. First, not one year into their working relationship, Taylor and Curtis had established a rapport close and mutually respectful enough that Taylor felt comfortable sending this article to Curtis and Curtis felt comfortable drafting such a reply to Taylor. Second, one may assume that (in Curtis' eyes) Taylor fulfilled all of the desirable traits Curtis listed. He thought her "good looking" and valued her "cheerfulness, courtesy, [and] patience." He would not have tolerated a secretary with his own fiery or stubborn temperament. At the same time, his value of "good judgement," which he later describes as "the habit of thoughtful action," is similar to the emphasis he placed on the intellectual independence of others with whom he worked. Finally, his lines about the need to be a good boss and the inspiration for his secretaries suggest devotion to a democratic or anti-hierarchical ideal.

Taylor left the TVA shortly after Curtis resigned to take the deanship at UMO. "I left TVA because they had no retirement program at that time," she writes in one part of her scrapbook; however, a Presidential Executive Order that April extended the federal retirement program to employees like Edythe, and she was informed that a portion of her salary would be deducted for it.[1577] Perhaps that was the issue. The main reason for her resignation, however, probably hinges on the fact that the Knoxville office of the Chemical Engineering Department closed with Curtis' departure, and the department headquarters moved.[1578] Taylor, who had been stationed in Knoxville, was informed she "would have had to transfer to...Wilson Dam, Alabama" to maintain her salary.[1579] This did not appeal

[1577] A. J. Robertson to Edythe H. Taylor, "Retirement Deductions--Edythe H. Taylor, Pay Roll 17-1," June 13, 1939, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1578] Taylor, "Edythe Helen Taylor Scrapbook," 7.
[1579] Taylor, 9.

to her, particularly because her husband was very ill at the time, likely suffering the effects of his brain tumor.[1580]

7.3.3 Harry Curtis and Other Women

Briefer references to or exchanges with other women—women who were not family members or Edythe Taylor—support the idea that Curtis respected them and sought to hold them to similar standards that he held men (ideology perhaps most in line with what's now considered second wave feminism).

As early as the 1910s, Curtis mentored women students in chemistry. When he taught at UCO, the newly founded Women's Chemical Society of the University of Colorado petitioned him to become its adviser sometime between 1914 and 1916.[1581] Led by president Icie Macy and vice president Eva Baum, the six signers only pointed to his "broad experience in chemistry" as rationale for their selection. [1582] There is no documentation that Curtis agreed to or denied their request, but the fact that the six agreed that Curtis was an appealing candidate for the position is significant. Further, when called into military service in 1916, Curtis appointed Macy and Baum laboratory assistants at the University, along with one man, proof that he had established a good relationship with them, respected their work enough to trust them to carry on his laboratory work while away, and sought to help them.[1583] Curtis maintained a cordial relationship with Icie Macy in the following decades. By 1948, when she wrote to congratulate Curtis on his nomination to

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[1580] Taylor, 9–10.
[1581] Women's Chemical Society of the University of Colorado to Curtis, c 1915.
[1582] Women's Chemical Society of the University of Colorado to Curtis.
[1583] Harry A. Curtis to Professor Ekeley, June 22, 1916, Box 3, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

the TVA Board, Macy—now Hoobler—had married, earned a Ph.D., and was Director of the Research Laboratory of the Children's Fund of Michigan in Detroit.[1584] Curtis replied with thanks in a chatty letter that included news on his wife and daughters as well as himself.[1585]

There is also some proof that Curtis had strong and cordial relationships with his secretaries aside from Edythe Taylor. In his autobiographical manuscript, Curtis writes that he's always received Christmas cards from his former secretaries at UMO. [1586] Further, upon his nomination to the TVA Board in 1948, Julia M. Rost wrote Curtis from the Wilson Dam to ask that he consider her for his clerical staff because she wished to leave Chemical Engineering but would be happy in another TVA division.[1587]

Curtis appears to have also supported the rights and welfare of women with whom he was not closely acquainted, with some moderation. As Dean of Engineering at UMO in 1939, Curtis remained an advocate for the T.V.A., and he wrote Taylor that he was "gradually educating this part of the United States as to what T.V.A. really is... even going so far as to address the local League of Women Voters."[1588] In the 1950s, during and after the debates in Curtis' professional fraternity over admitting black men, Curtis expressed support for their accepting women, as well. In 1952, he wrote Kuebler that he thought a

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[1584] Icie Macy Hoobler to Dr. Harry A. Curtis, July 19, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1585] Dr. Harry A. Curtis to Dr. Icie Macy Hoobler, July 22, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1586] Curtis, "Handwritten Autobiographical Account," 78.
[1587] Julia M. Rost to Harry A. Curtis, May 4, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections. I have found no documentation that Rost worked for him before; however, she was familiar enough with him to request this of him and was confident that he would be a desirable boss.
[1588] Curtis to Taylor, January 18, 1939.

future decision on admitting women "is not likely to cause much disturbance."[1589] In 1954, Curtis wrote to Kuebler, "I am pleased to note that the restrictions against the Negro have been lifted. And it seems strange that consideration of membership for women may follow the lifting of restrictions against the Negro."[1590] He added, on a lighter note, "I am sure that the initiation ritual used in 1902-3 was quite unsuited for a ceremony with women participating."[1591]

Early members of Alpha Chi Sigma recount the fraternity's first initiation ceremony in early 1903 in the organization's *Sourcebook*. This included being blindfolded and led to a cave, verbal abuse, a cross-examination, and some "stunts."[1592] As 1903 pledge Allan Lee recalled of the latter:

> One was to pick up something from a pan of water heavily charged with electricity, and in another I was made to bury my hands in putrid flesh (a piece of raw liver), while the rest of the fellows held vials of disgusting odors to my nose and made cavernous noises calculated to add to my feeling of nausea. This was supposed to represent the decomposing remains of a mythological brother alchemist who had been blown to atoms in the process of his alchemical researches.[1593]

That Curtis considered such a ceremony inappropriate for women in the 1950s is unsurprising; however, it is interesting how closely the ceremony aligns with what many scholars of feminist masculinity studies describe as "tests" of masculinity.[1594] It is also worth noting that Curtis' stance on women members was ahead of its time but not unheard

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[1589] Curtis to Kuebler, August 14, 1952.
[1590] Curtis to Kuebler, July 6, 1954.
[1591] Curtis to Kuebler.
[1592] *Alpha Chi Sigma Sourcebook*, 21–22.
[1593] *Alpha Chi Sigma Sourcebook*, 22.
[1594] Frehill, "Gendered Construction"; Michael S. Kimmel, *Manhood in America: A Cultural History*, 3rd ed (New York: Oxford University Press, 2012); T. Beneke, *Proving Manhood: Reflections on Men and Sexism*, Men and Masculinity (Berkeley: University of California Press, 1997).

of. The idea was proposed by a member in the fraternity's national publication as early as 1922.[1595] The fraternity's *Sourcebook*, however, documents the "heated debate" around the 1970 proposal that finally admitted women—after the motion failed to pass and a "desperate lunchtime negotiation" settled on the agreement to pass the motion if it would "not take effect immediately."[1596]

7.4 Conclusion

Harry Curtis frequently referenced his fondness for intellectual pursuits from childhood onward. He displayed his expertise in chemical engineering through academic and professional achievements. He also taught; participated in educational reform; and consciously pursued learning outside of STEM, claiming to find personal fulfillment in all three. His career choices and recollection of them showed a relative disinterest in money, and his high positions indicate that he could afford to perform this disinterest. He frequently referenced a trust in meritocracy and impartiality, and others identified those qualities in him. Curtis additionally was celebrated for his magnanimity, filling the role of patriarchal leader and mentor in many respects. Curtis also displayed his personal value of and association with white-collar masculine traits through the expectations and judgements he shared about others. He criticized those who failed to focus enough to gain expertise, for example, as well as those who claimed authority beyond their expertise in anything from military procedure to scientific research.

[1595] *Alpha Chi Sigma Sourcebook*, 24.
[1596] *Alpha Chi Sigma Sourcebook*, 24.

We see the theme of systemic bias enabling one to perform white-collar masculinity in inspecting Curtis' relationships with racism and his interactions with women. He appears to have been progressive with respect to race, but he deferred to institutional loyalty, as when he disagreed with his fraternity's race-exclusive membership clause. He likely had strong relationships with his wife and daughters, who were well educated, and he supported confidence, ambition, and daring in his daughters. His former secretary Edythe Taylor was impressed by the respect she received, advertising his relative distaste for hierarchy, although Curtis publicly expressed an old-fashioned desire for attractive secretaries. It's also notable that he likely mentored and may have advocated for women in his field.

CHAPTER 8. CURTIS AND PHYSICAL MASCULINITY

As explained in chapter 3, physical masculinity is rooted in one's physical body as well as the constructive physical labor that one does. Because of the high value this archetype places on physical construction, it is also associated with laborers or their culture; hard or strenuous work of any form; practical or tacit knowledge; and the act of creation more broadly. This archetype is also associated with tests of endurance or strength; sports, games, or physical fights; risk-taking and confidence; and fierceness or passion.

Curtis was at least as well-known for his blunt and often improper manner of speaking as he was for his technical expertise. His cussing and harsh criticism of others drew symbolically on physical masculinity and its association with strength, passion, and lower-class culture. Although no laborer (as an adult), he was known to work very hard and to expect hard work from others. He also displayed the confidence, value of practical experience, and emphasis on fights or tests that one associates with physical masculinity. On a more direct level, he engaged in physical construction when and how he could, and he took pride in his physical or institutional creations.

8.1 "Cussed by Curtis"

No description of Harry Curtis, it seemed, was complete without some mention of his "frank & outspoken" nature.[1597] (Taylor used the above terminology rather mildly in her

[1597] Edythe H. Taylor to The Honorable Harry S. Truman, Copy, February 4, 1966, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Edythe H. Taylor, "Edythe Helen Taylor Scrapbook," n.d., 4, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

letter to Truman and his Library; Curtis, on the other hand, characteristically described himself as "a noted hell-raiser.")[1598] As soon as any description of the man moved beyond his technical expertise, his blunt manner of speaking usually came next. Newspapers often remarked on the "'tough' exterior" of the "outspoken" and "salty engineer."[1599] They shared humorous stories of Curtis' harsh criticism of everyone from a "public power champion" to the UTK president and declared him "one of the most outspoken directors TVA ever had."[1600] Even obituaries in honor of the man described him as "a fiery thinker" with a "caustic tongue"—a "tongue…as sharp as his mind"—and views that "made some enemies."[1601] Curtis' friend H. P. Hammond even noted it in his 1948 letter to a U.S. Senator that urged him to support Curtis' appointment to the TVA Board:

> He is a forthright man who thinks directly … I have already said that he is sometimes blunt in his remarks. If this were an habitual or frequent occurrence or reaction on his part to problems of personal relations with others, I would refrain from endorsing him. But it is not an habitual trait, and people who recognize Dr. Curtis' intelligence and fundamental honesty are not disturbed by it; furthermore, since he will be one of a board of three members, I think a bit of this sort of quality is not bad in the makeup of a group which often has to be frank and outspoken.[1602]

[1598] Taylor to The Honorable Harry S. Truman, February 4, 1966; Harry A. Curtis to J. H. Walthall, May 2, 1951, ; qtd. in Robert Sessions, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

[1599] Julian Granger, "Dr. Curtis Still Tough Despite the Tears," February 12, 1960, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Powell Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis," *The Knoxville News-Sentinel*, March 10, 1963, sec. B-2, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

[1600] Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."

[1601] "Dr. Harry Curtis," July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; "Cancer Fatal to Crusader: Dr. Curtis, Former TVA Director, Dies," *The Knoxville News-Sentinel*, July 1, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

[1602] H. P. Hammond to Senator Chapman Revercomb, May 26, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

A self-described novice to writing letters of this sort, Hammond perhaps made the mistake of dwelling on that quality and all the reasons *not* to worry about it—to the extent that it could suggest some 'yellow flags.'

Closely aligned with Curtis' blunt remarks, the man was known for cussing and crude language, another marker of physical masculinity by association with a passionate nature as well as with lower-class culture. Curtis openly admitted to "cuss[ing] the Personnel Department month in and month out" when he was TVA Chief Chemical Engineer in the 1930s.[1603] In a 1939 memo to John B. Blandford, Jr., the Chief Budget Officer, Curtis decried new budgetary control measures as a requirement to "kiss the big toe of bookkeepers" and declared, "I am willing to co-operate with anyone in trying to make TVA a success, but be damned if I will be a party to wrecking a research and development program by moving technical control from where it belongs to where it does not."[1604] Such administrative departments were not alone in facing Curtis' foul language; his cussing was a frequent enough occurrence that associates light-heartedly formed a "Cussed by Curtis Club" before the engineer departed in 1939.[1605] And when Herbert D. Vogel joined Curtis on the TVA Board of Directors in the 1950s, Curtis frequently butted heads with him and "called [him] every name I could think of."[1606]

[1603] Harry A. Curtis, "Adventures in Faith" (Valley-Wide Meeting of the Joint Cooperative Conferences, Gatlinburg, TN, March 21, 1957).
[1604] Harry A. Curtis to John B. Blandford, Jr., "Release of Funds," March 8, 1939, qtd. in Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1605] Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis"; Taylor, "Edythe Helen Taylor Scrapbook," 4; "Dr. Harry Curtis." The latter called it the "Chastised by Curtis Club," likely because of the nature of the piece (an obituary). This is the only time the alternative nomenclature was found.
[1606] Harry A. Curtis, qtd. in Granger, "Dr. Curtis Still Tough Despite the Tears."

Curtis didn't only cuss when angry, but for casual emphasis. For example, when Curtis consulted for Chester Davis of the National Defense Advisory Committee (NDAC) in 1940, Davis often asked if a planned project could succeed. As Curtis recalled in his autobiographical manuscript, "I always replied: 'You're damned right it can.'"[1607] In 1963, a newspaper interview quoted Curtis, reflecting on his varied career, as saying, "I've enjoyed the whole damn thing."[1608]

Mention of the "Cussed by Curtis Club" brings us to an important point: Curtis' cussing and blunt nature were not simply tolerated in TVA culture; they were celebrated. The 'Club' threw Curtis a going-away party when he left for UMO in 1938.[1609] "[A]ll said they were aware there was nothing personal in his criticisms but were made in behalf of improving the agency," a newspaper would later report on the Club; another added that his "brutal" criticism was "always followed by constructive recommendations."[1610] One could argue that the intent behind and productivity of his criticism encouraged associates to simply *accept* his cursing rather than celebrate it; however, there was no "Constructively Criticized by Curtis Club." Cussing was an integral part of it.

At the 1957 dinner in honor of Curtis, recollections of his caustic remarks and blunt nature were the center of positive attention. The public reading of some of his correspondence tearing into individuals over the years was considered "one of the

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[1607] Harry A. Curtis, "Handwritten Autobiographical Account," 1962, 113, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1608] Harry A. Curtis, qtd. in Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."
[1609] "Dr. Harry Curtis."
[1610] Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis"; "Dr. Harry Curtis."

highlights."[1611] Sessions' speech described "a man whose irascibility and fractious remarks have been the pride--and frequently the despair--of everyone who has known him."[1612] The mention of "despair" probably garnered the most laughs, but his use of the word "pride" here should not be overlooked. In their eyes, Curtis used his coarse personality to champion the TVA and, by extension, its employees, whether he directed his harsh criticism at them or at others. He was also interpreted as championing a democratic culture; as Sessions' commentary addendum explained, "it was immaterial whether he (as a department head) was blasting at the General Manager, or (as a member of the Board) was needling a subordinate officer."[1613] Gordon Clapp wrote in to point out that Curtis' "penchant for calling a spade by its right name…makes him a man of strong yeast in any enterprise."[1614] Harry Case of the Personnel Department wrote another note in his honor, utilizing verbal irony when requesting "an exit interview from the doctor [to] inquire whether he has any suggestions for the improvement of the service. I suspect that all these years he has been holding back various suggestions for this occasion, due to his natural reticence in the matter of offering criticisms."[1615]

Curtis' harsh nature wasn't without its drawbacks, as when it nearly convinced John Oliver to decline the position of General Manager in 1951. In an oral history, Oliver

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[1611] Travis P. Hignett, interview by Mark Winter, April 13, 1983, Box 5, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[1612] Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1613] Sessions.
[1614] Gordon R. Clapp to Mr. L. L. Huntington, March 5, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1615] Harry L. Case to Mr. Lloyd L. Huntington, February 18, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

discussed this time, during which he was TVA's Acting General Manager and was trying to decide if he wanted the permanent position of General Manager:

In a Board/staff meeting I had made some kind of error and he was pretty rough on me, I thought. So I went in to see him after this [14] meeting was over, and told him that I'd thought my position over, and had come to the conclusion that the job wasn't for me—that the Board ought to find somebody else. Curtis responded: 'What are you talking about?' We talked and talked and finally he said: 'I can't understand what you're driving at. Do you mind if I go up and talk to Clapp about this?' I said: 'No, of course not.' I went on back to my office and about an hour and a half later, Curtis came in and said: 'Well, I've been talking to Clapp and he doesn't make any more sense than you do, as far as I'm concerned, but I gather I've done something wrong. I apologize. Now why don't you get to work.'[1616]

Oliver used this anecdote in 1983 to explain why Curtis, "one of my favorite people…was crusty and gruffy…but he was just an old softy underneath." Back 1951, however, Oliver surely saw the man in a different light. To decline such a prominent job—and one that he was already carrying out in acting capacity—would have been a major decision, and to find someone so harsh that the situation seems unsustainable is significant. Oliver came to interpret Curtis' apology as a sign of "softness," and he likely learned to interpret his initial response to Curtis' "rough" criticism as Oliver's having unnecessarily

[1616] John Oliver, interview by Mark Winter, June 16, 1983, 14, Box 8, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

soft skin. Both interpretations, however, are products of a habitus in which harshness is celebrated to the point that the qualifications for "softness" are relatively low.

Travis Hignett also hinted at possible drawbacks to the blunt criticism from Curtis during his oral history interview. "[H]e was a strong character," Hignett mused, "You never were in any doubt as to who was boss when he was there. And that's in a way, a good thing and in a way it's not. . . . I rather prefer more of a teamwork approach, but I did like and respect him."[1617] A. B. Phillips also hinted at Curtis' harsh criticism as a negative trait when he recalled the reviews that Curtis conducted of the Muscle Shoals plants when he was on the TVA Board: "He came down about once a year, and he had a real thorough review of our research program. We'd have presentations and he'd make comments, sometimes very caustic comments about them. He was a great old guy, ***but*** he sure believed in saying what was on his mind."[1618]

As discussed in other chapters, Hignett certainly advanced in the TVA over the years, starting as an engineer at Muscle Shoals in 1938 and rising through the ranks to Director of the Division of Chemical Development by the time he retired in 1973, so his "teamwork approach" was likely an acceptable management style as well.[1619] Phillips worked under Hignett and highly respected him, and Phillips rose to research management as well, at least to the level of Chief of the Process Development Branch.[1620]

[1617] Hignett, interview, 13. Spaced-out ellipses in the original.
[1618] A. B. Phillips, interview by Mark Winter, April 14, 1983, 12, Box 9, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta). Emphasis mine.
[1619] Hignett, interview.
[1620] Phillips, interview. Phillips discusses becoming Chief of the Process Development Branch and later "Assistant Manager," but he appears to have remained in the chemical engineering departments/divisions of TVA.

Note, then, that these criticisms were only provided by 'higher ups' in the TVA, and only in oral histories after their retirements and well after Curtis' death. It could be conjectured from this that others had problems with cussing and harsh criticism from Curtis, as well, and that they left employment with Curtis over time or never found a safe platform to voice their objection (for whatever reason). If this is the case, there is unfortunately no proof of it; almost all comments about Curtis' blunt nature were framed in the positive or were limited to mildly hinting at negative aspects. As Dr. Walter H. MacIntyre, Head of the Chemical Research Department at the UT University Farm, put the common sentiment, Curtis was "a hard-boiled engineer with a heart of gold."[1621]

8.2 Blue-Collar Imagery

Curtis associated himself with blue-collar imagery throughout his life. He stressed his lower-class roots (to the extent that he had them) and the need to support from high school onward. The description of his childhood, for instance, included a long list of all the conveniences they lived without, and what he told to his grandson left the impression that Curtis "was very poor when he was a boy."[1622] As he worked his way through high school, Curtis recalled, "In time I developed to a fine art the method of living on an income of almost nothing per week, an art that later stood me in good stead during college years."[1623]

[1621] Taylor to The Honorable Harry S. Truman, February 4, 1966; Edythe H. Taylor to Jeanne Curtis Webber, February 2, 1966, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Taylor, "Edythe Helen Taylor Scrapbook," 4.
[1622] Steve Palitz, "My Grandpa," January 23, 1962, Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."
[1623] Curtis, "Handwritten Autobiographical Account," 31.

Curtis also displayed a marker of lower-class culture and thus physical masculinity through the attention he paid to money. As discussed elsewhere, a concern or desire for money is associated with lower-class culture, while white-collar masculinity rewards an attitude that deprioritizes money relative to other interests. Although Curtis was known for choosing jobs based on his personal interest and ability to contribute to the broader community, he did pay attention to salary, as one sees in his autobiographical manuscript and other summaries of his varied career. His recollections of negotiating pay and his later discussions of them show that his income certainly wasn't meaningless to him. Curtis' autobiographical discussion of teaching, for example, discusses salary first, opening with the claim that "If one is to find satisfaction in college teaching he must look elsewhere than to the salary received."[1624] Curtis went on to chronicle his initial salary of $800/year, eventually earning about $1,000/year as a professor at UCO. By contrast, "I have since received more than ten times that salary in teaching and more than twenty times in other occupations. College salaries are higher today, but still much below what industry pays for men of similar training and experience."[1625] When the Vacuum Oil Company wanted to employ him in 1930, "I set a salary at more than double that I was receiving at Yale but that did not end their urging." Because he'd already agreed to serve a year with the National Research Council, he agreed to serve as Vacuum Oil's consultant 1930-31 and then become a full-time employee.[1626] "[T]he proposition was an extremely attractive one, or I would not have given up my chair at Yale to accept it," he wrote in 1933.[1627] Compensation

[1624] Curtis, 43.
[1625] Curtis, 43.
[1626] Curtis, 72.
[1627] Harry A. Curtis to Dr. Livingston Farrand, August 7, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

certainly helped Curtis' decision to work for the TVA as its chief chemical engineer, though conflicting recollections make it unclear to what extent.[1628] (See the section "TVA Recruitment of Curtis" in chapter 9). A document in his files titled "Part of the Record" lists his main employment and consulting jobs over the years with the monthly or annual rates paid for most, although this document may have been created to provide information requested of him rather than simply for his own records.[1629]

With "a flair…for dispelling stuffiness like an intellectual gadfly," as Gordon Clapp put it, Curtis also promoted his identification with blue-collar culture by unapologetically claiming or implying that certain status symbols or elements of upper-class culture were not for him.[1630] Reflecting with an old friend on their time in London during World War II, Curtis made clear that he didn't "hobnob": "When we were in London you may recall that I tried to get you to go to a tea with me but you declined," L.V. Burton wrote in a letter to Curtis. That tea party led to Burton's having a fine oil portrait painted of him for free, an opportunity that he regretted Curtis had missed out on for himself.[1631] "Now about that London tea party," Curtis replied, "It seems that I missed the boat. But, at the time, it looked to me as though you were getting into deep water and I wasn't sure enough that I could keep afloat. You evidently did, and have tangible evidence that you can hobnob with highborn ladies and painters of kings."[1632] Regardless of whether that "deep water" involved more than socializing with aristocracy, Curtis betrays some lack of confidence on

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[1628] Curtis, "Handwritten Autobiographical Account."
[1629] Harry A. Curtis, "Part of the Record," n.d., Box 7, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1630] Clapp to Huntington, March 5, 1957.
[1631] L. V. Burton to Dr. Harry A. Curtis, August 11, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1632] Harry A. Curtis to L. V. Burton, August 31, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

his part in 1945. In 1948, however, the remark strikes a chord that is at least neutral if not self-promotional: Curtis was implying that he didn't "hobnob"; he just wasn't that kind of person. This exchange occurred while Curtis was still Dean—a title that, he claimed, took him some time to feel comfortable hearing.[1633] Six years later, as TVA director and one of the most prominent men in Tennessee, Curtis would decline honorary membership in a country club, apparently still inclined to eschew 'hobnobbing' to some extent.[1634]

8.3 Hard Work

Curtis valued hard work throughout his life. From an early age through retirement, he worked hard, enjoyed challenges that required significant effort, and expected hard work from others. As discussed in chapter 3, these qualities strongly contribute to one's identification with physical masculinity through an association with blue-collar, physical labor as well as with much-lauded 'tests of endurance.' Curtis, it seems, had enough material and structural privilege to grant him access to the capacity to 'rise through the ranks' but enough impediments to present himself as fairly 'self-made,' to see clear benefits of hard work, and ultimately to place extremely high value on hard work throughout his life. He was required to do manual chores on the family farm as a child; he later worked a variety of jobs to pay his way through high school and college, including as a hired ranch hand and as an axman for a railway survey (both in high school).[1635] He recalled devoting almost all his time to his employment and schoolwork as an

[1633] Harry A. Curtis to Mrs. Edythe H. Taylor, January 18, 1939, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1634] Harry A. Curtis to Mr. C. Jack Brakebill Jr., December 30, 1954, Box 7, folder 4; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1635] Palitz, "My Grandpa"; Curtis, "Handwritten Autobiographical Account."

undergraduate.[1636] His professional life seemed no easier, scattered with mentions of long hours and strenuous work. He reflected on his "first hitch with TVA" as "a period of hard an intensive effort on my part and a period that I greatly enjoyed."[1637] Even once he left the TVA Chemical Engineering Department for his post as Dean of Engineering at UMO, Curtis reflected, "I had thought that I would not have to work so hard here, but it still seems that I am not smart enough to finish my day's work in the allotted eight hours."[1638] Two decades later, after his retirement from the TVA Board, "A former associate in TVA" discussed Curtis' "constant" work as a consultant, calling him "'one of the busiest men in retirement I've ever seen.'"[1639] Indeed, Curtis stopped his consulting work only after an eye injury left him physically unable to do the work.[1640]

Others recognized and applauded Curtis' "[t]remendous capacity for work," as Edythe Taylor put it.[1641] This was closely related to comments of his "energy" and "vigor"—qualities mentioned, not least, in letters supporting his appointment to the TVA Board.[1642] Such comments were also directed at Curtis with airs of disbelief. "How in the dickens does one man find the time and have the energy to do so darn many things," a friend rhetorically asked Curtis in 1948.[1643] Edythe Taylor liked to relate a story about

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[1636] Curtis, "Handwritten Autobiographical Account."
[1637] Curtis, 252.
[1638] Curtis to Taylor, January 18, 1939.
[1639] "Cancer Fatal to Crusader."
[1640] Curtis, "Handwritten Autobiographical Account"; Granger, "Dr. Curtis Still Tough Despite the Tears."
[1641] Taylor, "Edythe Helen Taylor Scrapbook," 4; Arthur M. Miller to Hon. Chapman Revercomb, May 23, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Hammond to Senator Chapman Revercomb, May 26, 1948; Hollis W. Harris to Harry A. Curtis, May 13, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; "Cancer Fatal to Crusader."
[1642] Hammond to Senator Chapman Revercomb, May 26, 1948; Harris to Curtis, May 13, 1948; "Cancer Fatal to Crusader."
[1643] Harris to Curtis, May 13, 1948.

Curtis' refusal to slow down after contracting malaria at Wilson Dam in the 1930s: "One day…I found him stretched out on a drafting table in his private office, since he had been weakened by the malaria. Seeing a man with such a tremendous capacity for work was astounding."[1644]

Curtis sought out and enjoyed challenges, a pattern that heavily influenced his "varied career."[1645] He often framed his job satisfaction by challenges he faced on the job—the more the better (at least of the type of challenges he liked)—and he explained employment changes in terms of completing one challenge and/or looking forward to the next.[1646] This was especially apparent in academia, a system designed to offer stability as one of its main advantages. "Personally, I never looked upon 'tenure' as one of the advantages of a career in teaching," Curtis explained, adding, "If any University had required of me a contract to stay more than a single year I would have refused to sign."[1647] His deanship at UMO is a classic example of this: "When the position was offered me in the summer of 1938 it occurred to me that here was the kind of a job that I had not yet tackled, and that it might be both challenging and rewarding," Curtis wrote.[1648] Fortunately for him, "It proved to be both," and he remained there over ten years, though he started itching to return to Knoxville and technical consulting as early as 1946.[1649] Upon leaving his secure deanship for the TVA Board, Curtis wrote to an acquaintance, "Perhaps one is foolish to leave the shelter of a University at my age but the T.V.A. job appeals to me and

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[1644] Taylor, "Edythe Helen Taylor Scrapbook," 5.
[1645] "Dr. Harry A. Curtis Dies Here At 79," *The Knoxville Journal*, July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1646] Curtis, "Handwritten Autobiographical Account."
[1647] Curtis, 45.
[1648] Curtis, 76.
[1649] Curtis, 76.

I am used to moving from job to job in the past forty years."[1650] Another friend wrote to Curtis upon hearing the news, "Do you remember 10 or 15 years ago you were planning your life so that you could retire at 65 and do a few things you wanted to do instead of spending all your time doing things you had to do. How about it? Is this the same thing?"[1651] Those familiar with Curtis' independent streak surely knew that the short answer was "yes."

In addition to being a hard worker himself, Curtis expected similarly great effort from those around him. As early as 1916, in perhaps his first official managerial position as an officer in the Colorado Cavalry, Curtis recalled how he "worked" his men "and cussed them and certainly improved their knowledge of riding, shooting, and drilling. I was unnecessarily exacting and harsh and was not a popular officer."[1652] He admired those who did work hard, as when he worked on the Nitrogen Survey in 1923 and witnessed Secretary of Commerce Herbert Hoover's long hours in the hot summer with no AC. Curtis left the office "about six p.m. but out in front of the building Mr. Hoover's limosine [sic] was always there waiting for him."[1653] Between that and the qualities of competence, confidence, and "vigor" that Curtis witness of Hoover in meetings, "I would never have guessed that the great depression…would have caught him lacking in understanding" and solutions.[1654] Long hours were not limited to Curtis and his superiors; in 1939, Curtis wrote to Taylor about some consulting work he'd recently done for the TVA at Muscle Shoals:

[1650] Harry A. Curtis to Mr. James S. Thompson, May 24, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1651] Ham to Dr. Curtis, May 31, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1652] Curtis, "Handwritten Autobiographical Account," 207.
[1653] Curtis, 225–26.
[1654] Curtis, 227, 226.

"It took all of three days and most of the evenings to get through with matters to which Dr. HAM [Morgan] wanted attention and, because of this lost time, I had to work everybody at the Shoals overtime in order to cover the ground."[1655]

One might see this attitude towards work ethic most clearly in Curtis' opinions of those who did not, in his opinion, work hard or earn their rewards. His frustration with "loafers" in academia, for example, is pointed out several times throughout Curtis' autobiographical manuscript.[1656] He explains tenure as a tactic by which colleges could "gracefully" end the employment of inferior teachers before offering them permanent positions. Without "trying to condemn 'tenure,'" Curtis adds, "It is my observation that few schools actually weed out incompetent teachers when they should under this plan ... So it works out, with exceptions here and there, that a professor can not be fired for being an exceptionally incompetent teacher."[1657] Later, while reflecting on his time in the Yale Chemistry Department, Curtis recalls that it "was not as strong an organization as I had expected to find in 1923…There were a few good teachers and a few good research men on the faculty of the department but there were also too many loafers, amongst both the older and the younger men. The teaching loads at Yale were purposely held low so that staff members might have plenty of time to do creative writing or research. Too many of the faculty did neither."[1658]

[1655] Curtis to Taylor, January 18, 1939.
[1656] Curtis, "Handwritten Autobiographical Account." See also his description of "lazy" and hard-working officers in the Colorado Cavalry during WWI, pp. 205-206.
[1657] Curtis, 44–45.
[1658] Curtis, 74.

This attitude extended to appointments to TVA leadership, many of which Curtis considered political rather than meritocratic. He implied that AE Morgan was appointed TVA Chairman simply because he "spent a lot of time in Washington" D.C. at the time.[1659] According to Curtis, James P. Pope was appointed TVA director in January 1939 in "what surely might be called a 'political appointment.' Pope had been defeated for re-election in Idaho." Pope "served creditably as a director but was not given to hard work and never became entirely familiar with all of TVA's business."[1660] Curtis believed that this wasn't limited to the TVA Board; he took a brief jab at political appointments in his speech at the 1957 dinner in his honor. "[T]he ink was scarcely dry on the printed TVA Act in 1933 when several members of the Congress began trying to use the TVA as a place in which to plant some 'deserving Democrats,'" Curtis said, "and now, twenty-odd years later, there are some folks looking for berths for 'deserving Republicans.'"[1661]

The attitude also arises in a curious form during the eight pages of his autobiographical manuscript that Curtis dedicates to Walter Trent, a con-man with whom Curtis only had "incidental contact" through the years.[1662] This "purported inventor…one of the smoothest and most successful promoters of an unsuccessful process that I have ever known," garnered a large amount of funding for "the so-called Trent Process" for de-ashing coal.[1663] Neither integral to the history of coal carbonization nor Curtis' work in the area, this part of the "Ventures in Coal Carbonization" chapter seems only intended for

[1659] Curtis, 236.
[1660] Curtis, 269–70.
[1661] Curtis, "Adventures in Faith."
[1662] Curtis, "Handwritten Autobiographical Account," 133.
[1663] Curtis, 133–34.

amusement and to provide a foil against which Curtis could define himself.[1664] Trent "somehow secured a commission as an officer" in the Army during WWI and, stationed near Washington, D.C., he quickly interested his superior officers in the Trent Process.[1665] "Thinking that the process might have military value," the officers worked their way up the chain of command to secure Trent laboratory space in a "wooden shack" belonging to the National Bureau of Standards.[1666] "A year or two passed before the Bureau awoke to the fact that Mr. Trent was promoting a vigorous get-rich-quick scheme and that there was a well-worn path down to the shack…being trod by Congressmen, Senators, heads of Government bureaus, bankers, representatives of foreign governments and a variety of business men."[1667] Trent had an international business plan for his proposed corporation; a suite at a luxurious hotel; and a bar stocked with "a choice selection of alcoholic beverages" during Prohibition ("presumably obtained through his friends at foreign Embassies").[1668] He entertained and coaxed "many a thirsty soul in Washington" to fund his work, and he made important enough connections that the Bureau of Standards had difficulty evicting him from their space.[1669] Curtis entered the story as the plant supervisor for the International Coal Products Corporation, requested to investigate the Trent Process. [1670] Trent met him at the hotel suite, "no doubt thinking that I would be able better to assess the merits of his process if I had first partaken of some choice liquor."[1671] Curtis' sobriety apparently remained intact (whether by refusing alcohol or 'handling' it remains unclear),

[1664] Curtis, 133–41.
[1665] Curtis, 134–35.
[1666] Curtis, 135.
[1667] Curtis, 136.
[1668] Curtis, 136–37.
[1669] Curtis, 137.
[1670] Curtis, 137.
[1671] Curtis, 138.

and he questioned the process' inability to recover its amalgamizing agent. At a later date, he noted the "constipated" new recovery unit's failure to produce anything at all as well as the fact that Trent's two grinding mills were simply modifications of mills that were already there.[1672] "A few days after my second visit," Curtis wrote, "it occurred to me that Trent was probably also copying some previously known process of de-ashing coal."[1673] A quick patent search revealed this to be true, and his corporation lost interest in the process.

Briefly chronicling several more scams in which Trent was later involved, Curtis ended with the humorous conjecture that, if still alive, Trent was setting up yet another plant somewhere and, if he had died, "there is a de-ashing plant set up to handle the 'good pit coal' said to be used down below."[1674] The moral of the account went unwritten, but it leaves an impression of Curtis and his view of the world. First, Curtis conveyed that lazy and disingenuous people exist who claim to be inventors, and that Curtis was not one of them. Second, Curtis' description of all the schemes Trent got away with for some time shows that "there's a sucker born every second," as the phrase goes; by contrast, Curtis was no sucker. He could employ sobriety, technical expertise, and a good deal of common sense to see through the charlatans who claimed credit for work they had not done.

8.4 Practicality

Although Curtis showed markers of white-collar masculinity through his dedication to well-rounded intellectual development and academic institutions, he placed great value on practical experience and good business sense, both markers of physical masculinity. Time

[1672] Curtis, 138–39.
[1673] Curtis, 139.
[1674] Curtis, 139–41.

and again, Curtis vocalized the opinion that even the most brilliant and educated man needed practical knowledge. His autobiographical recollection of time in the Colorado Cavalry was almost entirely dedicated to an assessment of each officer's practical skills (or, mainly, their lack); even the "best educated" among them would not become a "competent military officer," in Curtis' opinion, without more time dedicated to personal experience with horses, firearms, drills, and camp discipline.[1675] We see this interest in practical experience translate to engineering research when Curtis requested recommendations for men to staff his Vacuum Oil Co. lab in 1931, writing to a friend, "I am anxious to secure men who have considerable experience in research on these two lines of products [lubricants and white products] and, of course, am anxious to get men of research ability and acceptable personality."[1676] Note that he listed experience first, followed by ability and personality. Formal education may have been implied but was not explicitly mentioned.

Curtis brought this emphasis on practical experience to the TVA as, while Chief Chemical Engineer, he cut P. H. Royster, "a fellow with a streak of genius," out of a research contract because of Royster's devotion to theory over material reality.[1677] John P. Ferris recalled that Curtis' own work in the early days of TVA contained "outstanding contributions" to engineering and science, "But there was something more,- the hard-

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[1675] Curtis, 205–6.
[1676] Harry A. Curtis to Marion E. Dice, January 21, 1931, Box 1, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections. White products are highly distilled oil and gas products, such as kerosene and gasoline. See David Wood, "Oil & Gas Industry Glossary of Selected Terms To Accompany a Range of Training Courses Offered to Industry Professionals" (DWA Energy Limited, November 2012), https://www.dwasolutions.com/images/DWA_Oil_Gas_Glossary.pdf.
[1677] Curtis, "Handwritten Autobiographical Account," 234, 169–70.

headed judgments which a well-informed business executive might apply..."[1678] By the time Curtis joined the TVA Board, Ferris believed, he "possessed the needed know-how from the world of manufacturing enterprise" to be effective.[1679] Another called him "an extremely able and experienced man" when supporting his nomination to the Board.[1680] As TVA Director, Curtis worked for Valley business development, using pragmatic methods to cooperate with other local institutions to work for the Valley's prosperity through industrial growth.[1681] When a "public power champion" criticized Curtis for lacking "'crusading zeal[,]' 'Crusaders are often ineffective,' Harry Curtis shot back," emphasizing practical results over idealism.[1682]

Curtis emphasized practical knowledge and application in his academic publications, as when he emphatically opposed the editor of *Industrial and Engineering Chemistry* who requested his article's diagrams in metric units.[1683] "I am in sympathy with the movement to adopt the metric system of units, but I do not think that such a movement can be promoted by fanatical devotion," Curtis wrote. "As a practical matter, where drawings go to shops for construction of equipment, it is a waste of time to use metric dimensions so long as the shop is set up on the other units. I would work to get the shop

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[1678] Punctuation in the original. John P. Ferris to Mr. Lloyd L. Huntington, March 17, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1679] Ferris to Huntington.
[1680] Mr. D. O. Myatt to The Hon. Chapman Revercomb, June 16, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1681] "Cancer Fatal to Crusader."
[1682] Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."
[1683] Harry A. Curtis to Dr. H. E. Howe, Draft of letter, n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections. This undated correspondence, mentioning "Dr. Lum," is almost certainly from 1934 or 1935 and referring to James H Lum and Harry A Curtis, "Coal Carbonization—The Plastic Stage," *Industrial & Engineering Chemistry Analytical Edition* 7, no. 5 (1935): 327–33. See also F. J. Van Antwerpen, "Harrison Estell Howe," *Science*, New Series, 97, no. 2508 (January 22, 1943): 82–84.

changed, but would not muddle the job until the shop is changed," he added, implying that the article wasn't simply a theoretical contribution but was intended for practical use. He continued, more broadly, "Consistency is a necessary attainment only in mathematics. Its worship in other fields leads to grief and is followed rigidly only by fanatics." Curtis went on to point out the inconsistencies in metric time; the journal's use of non-metric units in other areas (volume, long distances, months, temperature); and inconsistencies in far more pressing areas (like divorce laws and traffic regulations). Hardly finished, Curtis then relayed a very long, funny dream that he supposedly had in which the editor functioned and spoke entirely in metric units throughout his day, extending the situation to absurdity and roasting the poor man in the process.[1684] The article was published with standard units in its diagrams.[1685]

Harry Curtis presented himself as no technocrat; however, he believed that experts in science and technology could be effective administrators by making use of their practical experience (assuming they had gained enough of it). This view is laid out quite clearly in a 1935 correspondence that Curtis sent to Lilienthal, titled "Sez One Expert to Another." Curtis was writing in response to a reading selection that Lilienthal sent him (and likely others). The author of this piece, Laski, had argued that technical experts should not stray from their field of expertise. Curtis opened by agreeing with the claim that technical expertise does not inherently give one leadership abilities. "To be sure, there is no reason to expect that because a man knows the facts and theories and skills of engineering, or chemistry, or law, he will do well in handling problems where these things are not

[1684] Curtis to Howe, n.d.
[1685] Lum and Curtis, "Coal Carbonization—The Plastic Stage."

involved," reasoned Curtis, pointedly including Lilienthal's own area of (legal) expertise, "And doubtless the achievements of the experts in their various lines have given the laymen too much respect for the opinions of these folks in fields where scientific expertness has no application." Curtis further agreed with the author that science and technology had progressed far more quickly than had "the enormously more difficult fields of government, and the adjustment of social situations in a rapidly changing physical environment," as witnessed in WWI and the population's plight during the Great Depression. "But getting back to this man Laski: his implication is that because a man has expertness in some one line, he is disqualified in fields where expertness, in the sense here used, is unknown." He pushed back on the claim, pointing out the logical fallacy inherent in the idea "that technical experts have any qualities which render them necessarily unfit for such work, unless it be a too highly developed regard for facts," and citing several examples of chemists who were successful and famous administrators or politicians. These "[a]nd a hundred other cases" could illustrate Curtis' core argument:

> Success in the non-technical world turns on qualities of intellect, temperament, and experience which the technical expert may or may not have...The fact is that where successful technical men have, by choice, or force of circumstances, taken up other lines of activity they have in general been successful--not because they were experts, but because they had the qualities which make for success in the broader fields of study.[1686]

Lilienthal was likely using the Laski piece to imply that Arthur Morgan (an engineer) was unfit to wield power over the TVA Board of Directors. Curtis probably agreed on this individual case; his autobiographical manuscript makes clear that—at least in retrospect—

[1686] Harry A. Curtis to David E. Lilienthal, "Sez One Expert to Another," Draft of memo, August 14, 1935, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

he had little respect for Arthur Morgan or his "assum[ing] that he was 'it' and the other two directors would be only his advisers."[1687] Here, however, Curtis struck a tone that pushed for cooperation for the sake of pragmatism, almost lecturing "Mr. Director" with his concluding "hope that the three experts…who comprise our Board…may prove that even technical men may have those qualities of leadership and tolerance and breadth of interest which will make it possible for other experts…to work with enthusiasm on their small jobs."[1688]

This didn't always work out as smoothly as Curtis may have imagined, even with respect to his own capacity for TVA administration. In *Prisoners of Myth*, Erwin Hargrove presents an example of Curtis' limitations resulting from his love of science. In 1951, Curtis penned a brief paper criticizing the Chestuee project ("a 'little TVA,' operating intensively" in a smaller watershed). He pointed out that the plan for it had changed and that TVA had made "exaggerated and unsubstantiated claims" about the positive effects of good soil management on flood prevention without any proper scientific study on it. He called for more research, effectively delaying or cancelling the project. "John Oliver answered Curtis's paper with a letter illustrating the perspective of an administrator compared to Curtis's scientific outlook," Hargrove writes.[1689] Oliver pushed for more coordination from the TVA to encourage "different TVA divisions to work together on resource development"; to "abandon this challenge" would be a setback to cooperative

[1687] Curtis, "Handwritten Autobiographical Account," 236.
[1688] Curtis to Lilienthal, "Sez One Expert to Another," August 14, 1935.
[1689] Erwin C Hargrove, *Prisoners of Myth: The Leadership of the Tennessee Valley Authority, 1933-1990* (Princeton University Press, 1994), 134.

efforts in general.[1690] "Curtis and Oliver were talking past each other," Hargrove writes, "the one calling for good science and the other for imaginative administration."[1691]

8.5 Confidence

As noted in chapter 3, confidence and ambition were closely identified with physical masculinity. Curtis exuded confidence throughout his life. Reflecting on his youth in his autobiography, Curtis declared himself a "smart-aleck" when entering high school and as an undergraduate. While interviewing for high school, Curtis informed the principal that his limited funds could only afford two years of the four-year curriculum, "so would he please register me for half the courses this year and half next," doubling his load. "He only smiled at the smart-aleck before him and agreed."[1692] Curtis again spoke above his station as an undergraduate when speaking to the college president, "a scholarly and somewhat austere old gentleman," whom "Most of the students avoided…as much as possible."[1693] "I guess that I was still somewhat the smart-aleck," Curtis wrote, "for I use[d] to drop in at his office frequently to tell him some idea I had for improving the University."[1694] This included suggestions about the building materials used for university buildings.[1695]

As an undergraduate in the lab, the "eagerness" he showed in chemistry "soon brought me to the attention" of his life-long friend and mentor, Prof. John B. Ekeley.[1696] Curtis doesn't describe that 'eagerness,' but it's unlikely Ekeley would have noticed it

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[1690] Hargrove, 134–35.
[1691] Hargrove, 135.
[1692] Curtis, "Handwritten Autobiographical Account," 31, 30.
[1693] Curtis, 39.
[1694] Curtis, 39, 41.
[1695] Curtis, 41.
[1696] Curtis, 35.

without Curtis' confidence. Curtis was also clearly a visible leader among his undergraduate cohort because he was elected President of the Combined Senior Class shortly before its graduation in 1908.[1697] Later, Curtis would show signs of that confidence as soon as he was employed at TVA. He personally described the 1933 plan for conversion of the Muscle Shoals plants that he submitted to the TVA Board as "ambitious."[1698]

Others recognized and highlighted these qualities of confidence and ambition in "the stalwart Harry Curtis."[1699] "I admire your guts and ambition," wrote Sidney Kirkpatrick to Curtis in 1948, as Curtis waited for his appointment to the TVA Board.[1700] In 1949, another friend chimed in on this theme. If Curtis could figure out the formulas for the TVA to accomplish its goals and "arouse more confidence" in it, Howard Howie wrote to Curtis, then "[y]ou have the courage and 'know how' to accomplish them."[1701] Direct compliments aside, when Hignett was asked about Harry Curtis in his 1983 oral history, he replied the "he was a strong character. You never were in any doubt as to who was boss when he was there."[1702]

8.6 Games, Fights, and 'Testing Mettle'

As described in chapter 3, physical masculinity often involves games, fights, and tests of one's endurance or strength (or simply qualities); these can all be materially present and

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[1697] Curtis, 42.
[1698] Curtis, 242.
[1699] John Oliver to L L Huntington, March 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1700] S. D. Kirkpatrick to Dr. Harry A. Curtis, May 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1701] Howard Howie to Dr. Harry A. Curtis, February 26, 1949, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1702] Hignett, interview.

physically acted out, or they could be images applied metaphorically. Harry Curtis was occasionally associated with such things through others' descriptions of him, the analogies he personally used, and his support for 'weeding out' weak or ineffective individuals and institutions.

Several people praised Curtis for his "strength" over the years, using a metaphor to physicality that's so common it's often overlooked.[1703] When Ray Copson spoke at the 1957 dinner in honor of Curtis, he admitted finding it difficult to summarize the man in just a few words. As a result, he turned to an anecdotal memory: "In Dr. Curtis' living room he has a little chest that was given to him by his daughters. Who should know him better than they? On this chest is a little brass plate with these words: 'You're a poor benighted heathen but a first class fighting man.'"[1704] The engraved line was from the Rudyard Kipling poem "Fuzzy-Wuzzy," penned in honor of certain Sudanese warriors fighting in opposition to British colonization in the 1880s, and rich in imagery of physical masculinity and passionate masculinity, as well as associations with the 'noble savage' that might be fruitful to try to unpack.[1705] Regardless of whether Curtis' daughters meant to reference the entire poem and make a direct analogy between Curtis and African militants, the line alone

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[1703] Beverly Burbage, interview by Mark Winter, September 15, 1983, Box 1, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Hignett, interview.
[1704] Ray Copson, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1705] James Sexton, ed., *English Literature: Victorians and Moderns*, BCcampus Open Textbook Project (Canada: BCcampus, 2012), http://open.bccampus.ca/find-open-textbooks; Roger Ayers, "Fuzzy-Wuzzy," The Kipling Society: The New Readers' Guide to the works of Rudyard Kipling, 2005, http://www.kiplingsociety.co.uk/rg_fuzzywuzzy1.htm.

is significant. It simultaneously ties Curtis to the "fighting" imagery of physical masculinity and to its lower-class ties.

Curtis also occasionally used imagery of games and physical fights. In 1944, as a consultant to the Department of the Interior as it explored the possibility of building a public potash recovery plant, Curtis pushed for a "Government Reserve" area large enough to supply raw materials to a plant large enough to compete through economies of scale.[1706] Notably, Curtis explained the idea through a metaphor to a children's game: "[I]f the United States Government was going to play marbles in the potash industry the Government should not lack marbles—in this case potash enough for a big refinery."[1707] Four years later, in the flurry of correspondence about Curtis' appointment to the TVA Board, he described TVA administration as "rough and tumble" more than once.[1708] Musing to Sidney Kirkpatrick, Curtis wrote, "Why any man should agree to leave a deanship and get into the rough-and-tumble of TVA administration is a mystery to me," then added, "The appointment has to receive Senate approval before I am a director and I shall probably get a mauling."[1709] Curtis made neither Senatorial 'maulings' nor TVA administrative culture sound attractive, and yet that was the point: He was man enough to face them out of his "interest…in the TVA."[1710]

[1706] Curtis, "Handwritten Autobiographical Account," 260–64.
[1707] Curtis, 263.
[1708] Harry A. Curtis to Prof. Roscoe H. Suttie, May 10, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Dr. Harry A. Curtis to Mr. S. D. Kirkpatrick, May 11, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1709] Curtis to Kirkpatrick, May 11, 1948.
[1710] Curtis to Suttie, May 10, 1948; Curtis to Kirkpatrick, May 11, 1948.

Curtis also occasionally exposed his support for a culture of 'weeding out' the weak or ineffective. As a professor, for example, his views of student retention aligned with those of many contemporary engineering programs.[1711] In a discussion of effective teaching methods, his autobiographical manuscript provides an example problem that utilizes the Law of Multiple Proportions and a categorization of students by their success in finding the solution:

> In any large chemistry class this assignment always revealed:
> a) Several students who found the correct procedure without help
> b) Several others who would reach the goal with a little help
> c) A rather large group which needed considerable help
> d) And a smaller group which seemed incapable of taking any step independently[1712]

By the end of the course,

> Almost without exception I found that groups a) and b) passed with good grades. Class c) students were scattered from the top to the bottom of the grade scale. Not many of class d) student survived to the end of the course. Of course, it might be argued that I taught the course in such a way that only students who already had, or were led to acquire, the ability to reason from facts to correct conclusions would succeed in the course. To this charge I plead guilty. [1713]

Curtis, then, admits awareness of a school of thought that promotes 'teaching for success'—providing extra resources for those who needed to catch up on such skills, for example—and he rejects it. Later in the manuscript, he takes time to describe the Yale Chemistry Department protocol of "gently weeding out graduate students who managed to pass courses but who were deemed to be poor candidates for the Ph.D. degree."[1714] After

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[1711] Lisa M Frehill, "The Gendered Construction of the Engineering Profession in the United States, 1893–1920," *Men and Masculinities* 6, no. 4 (2004): 383–403.
[1712] Curtis, "Handwritten Autobiographical Account," 51.
[1713] Curtis, 51–52.
[1714] Curtis, 74.

assessing a graduate student at the end of his first year, the department and informed him if they thought his "chances of eventually qualifying for a Ph.D." were slim, effectively encouraging him to leave the program.[1715] Both "weed out" practices were very common in academia at the time and are still common today.[1716] Regardless of their flaws or merits, Curtis was part of the culture that supported them.

His views of 'weeding out' the weak extended to the scale of institutions. For example, in his 1957 speech "Adventures in Faith," Curtis implied several opinions on what helps an institution "survive" or fail by reflecting on what the TVA had done to that point. Mentioning the "constant evidence of growth, development, and change" he witnessed during his 24-year association with the Agency, Curtis mused, "I realize that the TVA has survived and grown strong because it has retained flexibility and resilience, and has not been afraid of change as circumstances change. Only its principles and philosophy have been constant...In its time to date the TVA has, fortunately, had no chance to grow fat and complacent."[1717] Curtis did not specifically point to the institutions that he thought *had* "grow[n] fat and complacent" or resistant to change; however, this line reflects his long-time loathing of bureaucracy and suggests a broader vision wherein some institutions pass the 'test' over time, while others (who have fallen victim to bloated bureaucracy or complacency) do not pass the test and are weeded out.[1718]

[1715] Curtis, 75, 74.
[1716] Frehill, "Gendered Construction"; Amy E. Slaton, *Race, Rigor, and Selectivity in U. S. Engineering: The History of an Occupational Color Line* (Cambridge, MA: Harvard University Press, 2010).
[1717] Curtis, "Adventures in Faith."
[1718] Curtis; Harry A. Curtis to "A Dozen or So of My Esteemed Associates," "NEW YEAR RESOLUTIONS," January 1, 1937, Box 7, folder 3; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."

8.7 Physical Construction

As discussed in chapter 3, perhaps the most basic quality constituting physical masculinity is some link to physical constructions. In the value system of this archetype, one is considered most masculine if one directly constructs some physical object; however, relating to construction by directing it or by building something abstract (like a program or an institution) 'counts' towards one's masculinity to a lesser degree. Curtis related to construction by all three means.

8.7.1 Physical construction & his employment

As a chemical engineer, the materials with which he worked were particularly significant. This is a logical result of the nature of the work; its discussion and importance also contributes to one's association with physical masculinity. Having first exposed himself to chemistry in a childhood friend's woodshed, his "greatest delight" upon entering high school "was in the chemical laboratory, which consisted of a few pieces of glassware and a cabinet of chemicals"—modest enough, but "vastly superior" to the woodshed.[1719] When Curtis was sent to Muscle Shoals during WWI, "[h]is laboratory was an old stove factory," a detail important (or at least interesting) enough to warrant mention in an obituary 46 years later.[1720]

This improvised physical space for a chemical engineering laboratory wasn't an isolated incident, as Curtis explains in his autobiographical manuscript. During his section on the development of chemical engineering education, Curtis takes time to explain that,

[1719] Curtis, "Handwritten Autobiographical Account," 31.
[1720] "Dr. Harry A. Curtis Dies Here At 79."

chemical engineering's being "a messy operation," its turn-of-the-century labs "were relegated to the basement rooms of the chemistry building, and it took about twenty years for the chemical engineering laboratories to emerge from this gloomy environment."[1721] Without enough vertical space in these basement labs for distilling columns, chemical engineers dug pits into the laboratory floors commonly enough that "it came to be thought that no properly designed chemical engineering laboratory could be missing these pits."[1722] Newly designed labs with plenty of headroom also provided pits, including the new Yale lab that Curtis took over in 1923. "I had to board over those pits with heavy planks," he recalled, ending an aside that he apparently considered significant enough to impart to future generations.[1723] Perhaps this memory stuck in his head because he did find great joy in the nice industrial lab space he settled into at Yale, "with two-storey [sic] headroom and a saw-tooth glass roof overhead," he recalled decades later.[1724] At the time, he wrote an update to a friend. Although Curtis was well into his first term there, the news on his work at Yale was limited to a description of his "fine big industrial lab, with a travelling crane overhead, sawtooth glass roof, water, steam, air, D.C. and A.C., show service, etc."[1725] Such considerations are very important to an engineer, which is perhaps why Edythe Taylor recalled some decades after Curtis first joined the TVA that the Agency "furnished him with greatest amount of manpower & material with which to work on a project than he had ever had before."[1726]

[1721] Curtis, "Handwritten Autobiographical Account," 179.
[1722] Curtis, 179.
[1723] Curtis, 180.
[1724] Curtis, 180.
[1725] Harry A. Curtis to Mr. Earle E. Daughton, October 17, 1923, Box 1, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1726] Taylor, "Edythe Helen Taylor Scrapbook," 4.

Curtis, however, didn't simply associate with the material world by *having* nice materials with which to work, but by *doing*. This degree of action, he often implied, differentiated him as a chemical engineer from the chemists with whom he worked. Although Curtis had been hired to find ways to use the by-products from a pending coal carbonization plant in the 1920s, he quickly found that the pilot plant and its full-scale predecessor had major problems, including parts that "simply wouldn't work."[1727] At this point, he recalled, "I left the laboratory program in the hands of my staff of chemists, donned overalls and thereafter spent all my days in the pilot plant. This action of mine did not go unnoticed in the Newark or New York offices of the ICPC and within a few months I unexpectedly found myself appointed superintendent of the pilot plant."[1728] Although unexpected, the appointment did not seem to offend him; he continued this work and was apparently good enough at it that the corporation transferred him to manage the plant in South Clinchfield, VA, when it failed to run.[1729] The dirty physical work of plant repair (and solving the big problems) apparently suited him better than working in a lab with a "staff of chemists."[1730]

As Chief Chemical Engineer of the TVA, his primary focus was again on the physical structure of plants, as he set out to retool U.S. Nitrate Plant No. 2 for phosphatic fertilizer production. In terms of material and staff, this was the largest project he had managed yet.[1731] Noting in 1961 that both were still running, Curtis took great pride in the

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[1727] Curtis, "Handwritten Autobiographical Account," 124.
[1728] Curtis, 124–25.
[1729] Jaques Cattell, ed., "Curtis, Dean Harry A(Lfred)," in *American Men of Science: A Biographical Directory* (Lancaster, PA: The Science Press, 1949), Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."
[1730] Curtis, "Handwritten Autobiographical Account," 124.
[1731] Taylor, "Edythe Helen Taylor Scrapbook," 4.

longevity of the plant and the associated laboratories he'd set up. He also took pride in their impact. "After its initial attempt to discredit the TVA research," he wrote, "the fertilizer industry…sent scores of its technical men and executives to the plant and laboratories to check up on TVA developments."[1732] Proud of his own engineering at the TVA in the 1930s, Curtis—by contrast—personally discredited A. E. Morgan by dissociating him from physical construction. In his autobiographical manuscript, Curtis noted that, despite Dr. A. E. Morgan's doctorate being merely an honorary degree, Morgan "had become well-known as an engineer, or rather as a manager of engineering projects."[1733] The distinction was significant; Curtis relegated the TVA Director to the symbolic role of a mere manager or administrator, not a *true* engineer with direct involvement in manipulation of the physical world. Curtis continued that A. E. Morgan "had eventually organized his own engineering firm--the Morgan Engineering Co.--which had done important flood control work in the Ohio Valley," again, emphasizing that the firm had done the work, not the man.[1734]

After re-entering the ranks of collegiate administration himself as Dean of Engineering at UMO, Curtis missed his direct involvement with engineering practice. Writing Edythe Taylor in 1939 that he'd recently done some consulting for the TVA at Muscle Shoals, he admitted, "I enjoyed immensely the opportunity [to] spend days with the men at the Shoals on engineering and research problems. It did make me homesick for that part of my old job."[1735] Perhaps this is largely why he continued engineering consulting during his time at UMO and well into retirement from the TVA Board. Even as he served

[1732] Curtis, "Handwritten Autobiographical Account," 160.
[1733] Curtis, 235.
[1734] Curtis, 235.
[1735] Curtis to Taylor, January 18, 1939.

on the TVA Board, this may be the underlying reason why he became director of the Office of Chemical Engineering during the Agency's 1952 restructuring.[1736]

8.7.2 Physical construction outside of employment

Connections to physical construction appear in Curtis' activities outside of work, as well. As a young professor at UCO, Curtis took pride in both his physical and organizational construction of the UCO Camp. He claimed credit for the first "Arapahoe Peak Excursion"—the camping trip that, he claimed, eventually led to the organization of the camp—and he contributed to the idea of a permanent summer camp.[1737] Curtis also considered a few notes on its physical construction important enough to chronicle decades later in his autobiographical manuscript and in a recollection sent to *The Colorado Alumnus*.[1738] According to Curtis, he was the one to survey the thirty-acre tract of land that the college obtained from the U.S. Forest Service, and he built a bridge over a creek to the campsite.[1739] He and another UCO professor also "supervised the construction of a log cabin."[1740] He clearly took pride in the work he did to start a camp that became very popular and was "still in operation, now fifty years since the first Arapahoe Peak trip that led to its founding"—to the point that the piece he wrote for *The Colorado Alumnus* was meant to "supplement" a recent article that had omitted the camp's prehistory.[1741]

[1736] Hargrove, *Prisoners of Myth*, 129.
[1737] Harry A. Curtis, "Preliminary Draft of the 'Story of the Founding and Development of the University Camp,'" 1933, Box 3, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account," 64.
[1738] Curtis, "Preliminary Draft: Story of University Camp"; Curtis, "Handwritten Autobiographical Account," 64; Harry A. Curtis to Mr. C. Henry Smith, February 28, 1933, Box 3, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1739] Curtis, "Handwritten Autobiographical Account," 64.
[1740] Curtis, 64; Curtis, "Preliminary Draft: Story of University Camp."
[1741] Curtis, "Handwritten Autobiographical Account," 64–65; Curtis to Smith, February 28, 1933.

Curtis also enjoyed physical construction on a smaller scale through his hobbies, shaping physical objects through woodworking and gardening.[1742] In retirement (if not before), Curtis had a woodworking shop in his basement and reportedly "turn[ed] out excellent work" there.[1743] It also appears that Curtis was not averse to doing the manual labor necessary to work on his own house; he was digging out his own basement as late as 1951.[1744]

8.8 Physical Appearance and Habits

Because, as discussed in chapter 2, physical masculinity ultimately centers on one's body and associations with it, the apparent health and habits of an individual's body significantly contributes to an association with physical masculinity. Curtis 'fit the bill' here through his masculine appearance, including the apparent lack of any physical deformations or deficiencies, as well as his persistent habit of chewing nickel cigars.

One can see from photos that Curtis was, at least, "normal"-looking for a white American man in the early- to mid-20th century (Figure 2). A photograph of Curtis fairly early in his career (Figure 3)—sometime between earning his Ph.D. in 1914 and first joining the TVA in 1933, putting him in his 30's or 40's—shows a clean-cut, healthy-looking man standing erect in a laboratory setting, with shoulders back and one hand on a

[1742] "Cancer Fatal to Crusader"; Harry A. Curtis to John R. Kuebler, June 27, 1958, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis"; "Dr. Harry A. Curtis Dies Here At 79"; Kirkpatrick to Curtis, May 6, 1948; Harry A. Curtis to Mrs. Edythe H. Taylor, February 27, 1946, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1743] "Cancer Fatal to Crusader"; Granger, "Dr. Curtis Still Tough Despite the Tears"; Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."
[1744] Jeanne Webber to Harry A. Curtis, November 15, 1951, Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

piece of equipment that is out of the shot. His broad shoulders and neck, strong jaw- and brow-line, and straight nose were all features physically pegged "male."[1745] A wrinkled lab apron partially obscures a white shirt with bowtie and vest, a visual combination of physical and white-collar masculinity reminiscent of the civil engineers in Oldenziel's *Making Technology Masculine* who balanced proper building site clothes with "carefully chosen headgear and shoes."[1746]

Figure 2: Harry A. Curtis in his 30's or 40's. [1747]

[1745] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995).
[1746] *Small Photograph of Dr. Curtis*, n.d., photograph, n.d., Box 15, folder 8; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Ruth Oldenziel, *Making Technology Masculine: Men, Women and Modern Machines in America, 1870-1945* (Amsterdam: Amsterdam University Press, 1999), 57, 61.
[1747] *Small Photograph of Dr. Curtis*.

Image removed to avoid possible copyright infringement in SMARTech repository.

Figure 3: Harry A. Curtis at age 64.[1748]

A second photograph shows the Curtis with whom more were familiar: a man more senior in his career and life, the outspoken and highly visible TVA engineer, consultant, and director. The unidentified newspaper clipping containing this picture identifies Curtis at age 64, in the TVA's Washington office shortly after being nominated to the TVA Board.[1749] Curtis is bespectacled but shows no signs of poor health, and he has the tidy black Chevron moustache that he had taken to wearing by the time he joined the TVA in 1933.[1750]

[1748] AU wirephoto and Associated Press, "Named to TWA [Sic] Board," 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1749] AU wirephoto and Associated Press.
[1750] Ferris to Huntington, March 17, 1957.

Other clues to Curtis' physical appearance can be found in correspondence and brief descriptions of him. Curtis was probably not particularly tall, suggested by a letter to an old friend recalling a funny story in which Curtis lent a common friend "mountain clothes" to take him hunting, and "The coat sleeves only reached to a point about midway between elbows and wrists. Likewise the pant legs stopped at least a foot too soon. "[1751] A description of Curtis when he was the TVA Head Chemical Engineer appeared in a tribute letter sent to the 1957 dinner in his honor. "I remember first seeing [Curtis]; I didn't know who he was," John P. Ferris wrote, "Stocky, black-mustached, successful looking, obviously competent. He had apparently stepped out of the world of business."[1752] Here Ferris picks up not only on basic physical features but also Curtis' style at the time—clean-cut and dressed in a way to work in business—as well as his general carriage or demeanor, something about him that could strike a 1930s observer, at first glance, with the impression that he was both "successful" and "competent."[1753] Curtis was probably not considered ugly, as evidenced by a lighthearted mention from W. H. MacIntire of seeing Curtis' "facial physiognomy…in the local papers" in 1949.[1754] "[M]y first thought was to send you a clipping," MacIntire wrote Curtis, "On second thought, however, one would hesitate to imply that you look like what I looked at as purported to portray your distinctive Valentino, Robert Taylor, Clark Gable, and Gregory Peck features."[1755] Mentioning some of Hollywood's most attractive male stars of the time, MacIntire was clearly joking by

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[1751] Harry A. Curtis to Mr. John R. Kuebler, September 21, 1958, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1752] Ferris to Huntington, March 17, 1957.
[1753] Ferris to Huntington.
[1754] W. H. MacIntire to Harry A. Curtis, February 12, 1949, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1755] MacIntire to Curtis.

hyperbole—the 64-year-old Curtis was almost certainly not as dashing as them—and yet Curtis was handsome enough that a depiction of him could be considered unflattering. No 'Quasimodo' would have received a comment like that from a friend. Further, Curtis may have maintained himself fairly well through the years, suggested by his continued outdoor pursuits, fairly physically demanding hobbies, and a comment about the "bald heads and bulging waistlines" of his cohort at his 50-year UCO reunion.[1756]

Another clue to Curtis' appearance and what others thought of it comes in a flurry of correspondence about a drawing of Curtis printed on the cover of the July 19, 1948 issue of *Chemical and Engineering News,* a depiction of Curtis' face and shoulder in front of an agricultural landscape, an industrial plant, power lines, and a map of the Tennessee Valley (Figure 4).[1757] The cover commemorated the news that Curtis had been nominated to the TVA Board; however, the verdict of all who mentioned the drawing was that the artist had done a poor job of depicting Curtis.[1758] Indeed, when compared to contemporary photos of Curtis, the drawing shows a man with a smaller and rounder nose, a softer and rounder

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[1756] Curtis to Kuebler, June 27, 1958; Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis"; Harry A. Curtis to Mr. John R. Kuebler, June 3, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Gordon R. Clapp to Mr. S. D. Kirkpatrick, August 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Granger, "Dr. Curtis Still Tough Despite the Tears"; "Cancer Fatal to Crusader"; Burbage, interview.

[1757] Arthur Conrad, ed. Walter J. Murphy, *Chemical and Engineering News* 26, no. 29 (July 19, 1948): cover.

[1758] Conrad; Jas. K. Hunt to Dr. Harry A. Curtis, August 13, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; MacIntire to Curtis, February 12, 1949; Curtis to Murphy, July 26, 1948; Walter J. Murphy to Dr. Harry A. Curtis, August 10, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Dr. Harry A. Curtis to Dr. Icie Macy Hoobler, July 22, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Dr. Harry A. Curtis to Mr. James K. Hunt, August 30, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Gustavus J. Esselen to Dr. Harry A. Curtis, July 21, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

jawline with the suggestions of an underbite, and rather villainous eyebrows to accompany his slight frown.[1759] Green shadows, suggestive of a green light reflected on Curtis from below, makes the entire illustration even more cartoonishly ominous.

Image removed to avoid possible copyright infringement in SMARTech repository.

Figure 4: A "savage" depiction of Curtis on the cover of *Chemical and Engineering News*.[1760]

Jas. K. Hunt wrote Curtis after discussing the cover with at least one other common acquaintance:

> This is to suggest that you bring suit against the artist, and also the American Chemical Society, for slander, libel, and malicious mischief. I feel sure this

[1759] Conrad; AU wirephoto and Associated Press, "Named to TWA [Sic] Board"; Associated Press Wirephoto, "Named to TVA," May 5, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1760] Conrad; Harry A. Curtis to Mr. Walter J. Murphy, July 26, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

> picture must have caused you great 'mental anguish,' which I believe in itself is sufficient grounds for a damage suit. Jack Perry and I compared notes on this matter and agreed that, although you may have neither the face nor figure of Clark Gable, the picture in question is nevertheless libelous.[1761]

Like MacIntire, Hunt was joking by hyperbole, implying that Curtis would reasonably be a little bit bothered; however, he and Perry seemed to have seriously agreed that Curtis was more handsome than the drawing showed.

Others focused more on the apparent attitude of the man in the drawing, contrasting it with Curtis' kind demeanor. "It certainly does not properly portray the Harry Curtis that I know and whose friendship I value," wrote Gustavus J. Esselen.[1762] In response to a note from Curtis, Walter J. Murphy, editor of *Chemical and Engineering News*, apologetically agreed. "I am afraid the artist missed that kindly smile that used to greet us at 40 Berkeley Square," he wrote, recalling their interactions in WWII London.[1763]

As for Curtis, he complained to several that "[t]he artist who prepared the cover certainly made me look savage."[1764] He was surprised to find himself on the front of the journal; had he known, he wrote, he "might have arranged to look a bit less savage."[1765] "My wife says that I grow mellow with age," he added to another.[1766] It's worth noting the terminology of this complaint because it speaks to a couple of themes. First, physical masculinity in the 20th century increasingly discouraged a man from appearing to care about his attractiveness, tempering a focus on one's physique and encouraging a culture

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[1761] Hunt to Curtis, August 13, 1948.
[1762] Esselen to Curtis, July 21, 1948.
[1763] Murphy to Curtis, August 10, 1948.
[1764] Curtis to Murphy, July 26, 1948; Curtis to Hoobler, July 22, 1948.
[1765] Curtis to Hoobler, July 22, 1948.
[1766] Curtis to Hunt, August 30, 1948.

that derided self-care as feminine.[1767] Second, the opposition solely to looking "savage" invokes the white masculinity that contrasts itself with relatively "uncivilized" nonwhite men, no matter the degree to which a white man might approach "savagery" in his performance of physical masculinity—as discussed in Bederman's *Manliness and Civilization*.

On the theme of Curtis' appearance to others, it's also worth noting that he was frequently seen with a cigar; that is, he "[s]moked cigars incessantly," as Edythe Taylor recalled.[1768] When she worked as Curtis' secretary in the 1930s, "He instructed me to always have a box of…cigars and many matches in his private office." She continued with a humorous recollection: "[W]hen he had a cigar his mouth and dictated a letter to a man whose name he pronounced in French, I was lost." Rather than remove the cigar from his mouth to clarify, "He gave me a letterhead on which the man's name appeared."[1769] When Curtis awaited approval of his appointment to the TVA Board, a friend joked that, "if you can still buy those nickel cigars, I am sure that by chewing up a few more each day you can handle this additional assignment without too much difficulty."[1770] Curtis replied, "I shall need a lot of cigars to chew on and I can't find any of the good old nickel variety in the market these days."[1771] After sustaining an eye injury in 1960, the TVA Board, including Vogel, sent him a get-well letter and a box of cigars.[1772]

[1767] Bederman, *Manliness and Civilization*; Timothy Beneke, *Proving Manhood: Reflections on Men and Sexism*, Men and Masculinity (Berkeley: University of California Press, 1997).
[1768] Taylor, "Edythe Helen Taylor Scrapbook," 4.
[1769] She lists the specific brand of cigars, but it's illegible. Taylor, 4.
[1770] A. H. Monk to Harry A. Curtis, May 5, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1771] Harry A. Curtis to A. H. Monk, May 10, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1772] Granger, "Dr. Curtis Still Tough Despite the Tears."

Cultural association with the cigar is overwhelmingly masculine. Men have historically used tobacco much more frequently than women--a trend that exists to this day—and cigars have generally been considered more masculine than cigarettes since the latter were invented. Cigars were very commonly smoked in the early 20th century; to compete with rising cigarette sales, 1920s cigar manufacturers adopted cigar machines, causing the price of most cigars to plummet to 5 cents or less.[1773] Recognizing that few women smoked cigars, firms c. 1930 emphasized the masculinity of cigars with slogans like "Be a Man—Smoke Cigars" and illustrations of women in swimsuits, and they "implied that cigarettes were effeminate," explains Patricia Cooper.[1774]

8.9 Conclusion

Curtis was well-known and celebrated for his 'uncivil' tongue and gruff personality, to the degree that employees formed a 'Cussed by Curtis Club.' He emphasized his relatively poor upbringing and displayed markers of blue-collar culture, including a distaste for certain trappings of the upper classes. Curtis valued and expected hard professional work from himself and others, reflecting this inclination among white-collar men to have it fill in for direct physical adversity. He displayed ample confidence, and he emphasized the value of practical experience and practical approaches. Curtis also celebrated hardiness, (non-physical) fights, and tests of mettle, and he engaged in physical construction and recreation. He also looked the part: appearing a healthy, white man with a cigar habit who looked 'normal' enough that colleagues could joke about his depiction in art.

[1773] Patricia A. Cooper, "'What This Country Needs Is a Good Five-Cent Cigar,'" *Technology and Culture* 29, no. 4 (October 1988): 779–807.
[1774] Cooper.

CHAPTER 9. CURTIS' MASCULINITIES IN ACTION: HYBRID MASCULINITIES AND EXAMPLES

9.1 Curtis and Frontier Masculinity

As described in Chapter 3, frontier masculinity is built on an association with the nonhuman environment. It is closely associated with this relationship and its corollaries: independence or self-sufficiency, 'adventuring' geographically or on symbolic frontiers, and colonization or domestication of the 'other.' Curtis certainly needed his traits of white-collar masculinity to be respected in academic and TVA leadership roles; however, it was his close identification with frontier masculinity and physical masculinity that set him apart and inspired others to declare, "Here, then, is a man."[1775] As the first section of this chapter shows, Curtis earned an association with frontier masculinity from his very birth and childhood, and he maintained and cultivated it well into adulthood through travel, selection of jobs and locations of residence, recreational activities, and a dedication to individual independence for himself and others.

The second section of this chapter inspects Curtis' performance of military masculinity, which is associated with participation in the military or a war effort; the use of military imagery; and more abstract qualities like individual subsumption for an institution. Although Curtis often complained about aspects of the military and individuals in it, he earned the symbolic right (or the social capital) to do so through other associations

[1775] Robert Sessions, "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

with military masculinity. He was a member of the military in WWI, and his work supported the military and U.S. war efforts at several points. He was closely involved in several institutional 'teams,' from fraternities to employers to professional societies.

After analyzing Curtis' performance of each masculinity in isolation throughout these final three chapters, the third section of this chapter presents two case studies that show multiple masculinities operating simultaneously in a hegemonic bloc at the start and the end of Curtis' career with the TVA.

9.1.1 Childhood on a Western Farm

Curtis noted in multiple instances that he was born in a log cabin, to the point that he appeared to consider it a mark of pride.[1776] The fact that it was typical for someone born in Douglas County, Colorado at this time "to have a log cabin as his first home" only adds to identification with frontier masculinity: Curtis was born into a frontier world, in this respect.[1777] The Curtises and their neighbors lived without a "phone, or electric lights, or central heat, or radio, or television unit, or refrigerator, or electric washing machine, or vacuum cleaner, or automobile."[1778] Although the family soon moved from his birthplace, Curtis consciously noted that they again lived in log cabins on the ranch his father was leasing in autumn 1901, when Curtis registered for high school. He went into detail on how

[1776] Harry A. Curtis, "Handwritten Autobiographical Account," 1962, Box 15, folder 11; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis, "Part of the Record," n.d., Box 7, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Steve Palitz, "My Grandpa," January 23, 1962, Box 15, folder 2; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1777] Curtis, "Handwritten Autobiographical Account," 16.
[1778] Curtis, 22–23.

three log cabins were joined for "the main building," and that he slept and maintained a "workshop and studio" in his own small cabin.[1779]

Beyond the log cabin, his was a farming and ranching family, and his personal depiction of this world is of one that still retained very recent memories of a classic pioneering life. He was the son and grandson of Welsh immigrants, who in 1871 entered the U.S. and settled on a cattle farm in Douglas County.[1780] (Curtis noted, "Even at this date the pioneer days in Colorado were nearly over" due to the incursion of railroads.[1781]) Curtis goes into detail describing local farmers' trading and contact with the Native Americans who migrated between their reservations and Denver, all before he was born.[1782] He also describes cattle roundups and branding, exhibiting first-hand experience of the branding process but noting that the community-wide roundups were "an annual affair" in the state through the 1870's—again, before he was born.[1783]

This tendency to dwell on events and practices before Curtis' birth served multiple possible purposes. First, it provided family history and context. His autobiographical account was written for his daughters, and a description the world of their grandparents would have been relevant and interesting to them. The description of such events also provides more information to the context in which he was born. Curtis may not have personally traded with Native Americans, but his upbringing was surely shaped by the fact that he was born to people who did. Second, it links Curtis to frontier masculinity. To have

[1779] Curtis, 30.
[1780] Curtis, 12.
[1781] Curtis, 12.
[1782] Curtis, 18–19.
[1783] Curtis, 17–18.

been born in a log cabin on a western ranch, and to have been born into a community that had recently participated in classic 'cowboy' activities, are more legitimate markers of this masculinity than any of the less-authentic trappings that those without such backgrounds consciously adhered themselves to (as discussed in chapter 3). It may also be significant that, in setting out to tell his own story but spending several pages on his parents', Curtis somewhat conflated his autobiography with that of his father's. This speaks to the high importance of father figures, as discussed in chapter 2.

That said, it was a common method of Victorian novelists to start one's story by explaining the hero's origins and parentage.[1784] Theodore Roosevelt, for instance, built on this common practice in his first chapter of *The Winning of the West*, in which he provided a history of the white American race, its supposed predecessor in the English race, and the "extended act of racial conquest" stretching from a primarily Germanic conquest of ancient England to the white settlement of the American West. "As Roosevelt saw it," Gail Bederman explains, "this act of manly conquest established the American race as a race apart—a race different from its English parent."[1785] In light of this, it is noteworthy that Curtis began his story with the American settlement of his Welsh forebears—no earlier, and no later.

Curtis had a childhood worthy of frontier masculinity, nonetheless, and he was very nostalgic of it. He mused fondly of times "in my boyhood when I ranged horseback over the western edge of the plains."[1786] He contributed to farm chores from an early age,

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[1784] Gail Bederman, *Manliness and Civilization: A Cultural History of Gender and Race in the United States, 1880-1917* (Chicago: University of Chicago Press, 1995), 178.
[1785] Bederman, 178–79.
[1786] Curtis, "Handwritten Autobiographical Account," 16.

reportedly milking cows every morning at age 4.[1787] The albums of photos he took recording the "people, places, farm animals, scenery, etc." of his childhood were so dear to him that "My wife says, jokingly…if our home should catch fire, I would first rescue my albums, then the painting of one of my boyhood homes, and then look around for my wife."[1788] Amidst the hard work and limited income, Curtis recalled that "we lived comfortably and happily."[1789] He conjectured from the vantage point of the 1940s, "I doubt that any farm family of six could, in these days, get along comfortably on an eighty-acre farm, half of which was dry land. Perhaps the gadgets which now serve us in our homes have closed the door to the way of living we experienced and enjoyed in the closing decade of the nineteenth century."[1790]

9.1.2 Work in the Phosphate Fields

As an adult, his work on phosphatic fertilizers took him outdoors often, to phosphate fields in which his rugged character likely contributed to his legitimacy as a technical expert. While Chief Chemical Engineer at the TVA, Curtis advised prospecting in the phosphate fields of middle Tennessee and accompanied H. A. Morgan on trips to phosphate fields in Western states to encourage their development.[1791] In 1939, he took a long "field trip…a very pleasant and educational experience…[of] rambles over the western phosphate fields in the summer of 1938" with a small Congressional committee for a federal report on phosphate outcrops in Montana, Wyoming, Idaho, and Utah.[1792]

[1787] Palitz, "My Grandpa."
[1788] Curtis, "Handwritten Autobiographical Account," 29.
[1789] Curtis, 22.
[1790] Curtis, 23.
[1791] Curtis, "Handwritten Autobiographical Account."
[1792] Curtis, 253–55.

While Dean of Engineering at UMO, Curtis frequently worked in the Western phosphate fields.[1793] A large part of this was consulting for the Central Farmers' Fertilizer Company, a group of 14 farmers' cooperatives that had purchased a million-dollar phosphate deposit from a private corporation to develop for fertilizer.[1794] Over the course of at least two years, Curtis took "a nominal fee" from the company to make surveys for the purchase, at times "wallow[ing] through snow three feet deep," and at other times "spen[ding] practically all…summer riding horse back over mountains, living in tents, etc."[1795]

9.1.3 Outdoor Recreation

This surely was not entirely unpleasant work to Curtis, since he enjoyed outdoor recreation as an adult and pursued it often.[1796] As an undergraduate at UCO, he recalled, he enjoyed the company of physics professor (and, later, department head) O. C. Lester "on the many long hikes we made in the mountains."[1797] Later, while teaching there, Curtis

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[1793] Curtis, "Handwritten Autobiographical Account"; E. G. Peterson to Sen. Elbert Thomas, May 5, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; D. A. Williams to Hon. Edward J. Thye, June 4, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Hollis W. Harris, May 22, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Mr. Harry M. Edelstein, May 22, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1794] Williams to Thye, June 4, 1948.
[1795] Curtis to Edelstein, May 22, 1948; Williams to Thye, June 4, 1948; Curtis to Harris, May 22, 1948; Curtis, "Handwritten Autobiographical Account"; Peterson to Thomas, May 5, 1948.
[1796] Curtis, "Handwritten Autobiographical Account"; Harry A. Curtis, "Preliminary Draft of the 'Story of the Founding and Development of the University Camp,'" 1933, Box 3, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Mr. John R. Kuebler, September 21, 1958, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Mr. Reuben B. Robertson, Jr., June 14, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to John R. Kuebler, June 27, 1958, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Powell Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis," *The Knoxville News-Sentinel*, March 10, 1963, sec. B-2, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1797] Curtis, "Handwritten Autobiographical Account," 37.

convinced at least one visiting fraternity brother to go camping and hunting with him and his brother-in-law, even lending his friend some "mountain clothes." They slept "down in the sand with the [one] blanket over the three of us" in snowy conditions.[1798] By this point, Curtis had "learn[ed] to shoot left-handed" so that he could continue to go hunting after having damaged his right eye while viewing a solar eclipse; this remedied setback shows a dedication to the sport.[1799]

He also worked to offer UCO students "a real taste of the mountains" by taking them on camping trips and eventually establishing a permanent camp for the university.[1800] While still an instructor at UCO in 1911, Curtis convinced the director of the UCO summer school to allow a guided camping trip and mountain climb, likely the school's first.[1801] Under his leadership, Curtis recalled, roughly fifty students, "mostly inexperienced in mountain camping and unused to high altitudes," hiked, spent one night camping, and climbed Arapahoe Peak in a day.[1802] The women rode wagons into camp with the baggage, and they (and some men) slept in the empty cabins there while the rest slept outside. All seem to have made the hike to the summit. The trip was so popular that about 125 students registered for it the next year.[1803] Eventually, due to logistical issues and the trip's popularity, the University obtained land for a permanent camp. This plan, Curtis maintained, was the direct result of conversations held around on Prof. Thompson's

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[1798] Curtis to Kuebler, September 21, 1958.
[1799] Julian Granger, "Dr. Curtis Still Tough Despite the Tears," February 12, 1960, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1800] Curtis, "Preliminary Draft: Story of University Camp"; Curtis, "Handwritten Autobiographical Account."
[1801] Curtis, "Preliminary Draft: Story of University Camp"; Curtis, "Handwritten Autobiographical Account."
[1802] Curtis, "Preliminary Draft: Story of University Camp."
[1803] Curtis; Curtis, "Handwritten Autobiographical Account," 63.

campfire, at times when Thompson stayed in his family's camp and Curtis "pitched his tent somewhat higher up the creek" (emphatically 'roughing it' more than Thompson).[1804] The University Camp operated for decades afterwards.[1805]

Correspondences reference camping trips and stays at friends' mountain cabins throughout the 1930s and 40s.[1806] In 1948, Curtis took a 5,000-mile road trip to "Colorado, California and adjacent territory." The final destination was the California wedding of Curtis' only niece and a visit with his sisters, but he also managed to visit "Bryce [Canyon], Zion, Sequoia, and Yosemite" national parks and go trout fishing with friends in Colorado.[1807] As a member of the TVA Board, Curtis and John McAmis, Director of Agricultural Relations, "went horseback riding in the mountains on Saturdays. McAmis

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[1804] Curtis, "Preliminary Draft: Story of University Camp"; Curtis, "Handwritten Autobiographical Account," 63–64.
[1805] Harry A. Curtis to Mr. C. Henry Smith, February 28, 1933, Box 3, folder 9; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."
[1806] Curtis to Robertson, Jr., June 14, 1948; Arthur M. Miller to Harry A. Curtis, July 28, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Mr. S. D. Kirkpatrick, August 30, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis, "Handwritten Autobiographical Account."
[1807] Harry A. Curtis to Prof. Robert M. Boarts, June 2, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Curtis to Kirkpatrick, August 30, 1948; Miller to Curtis, July 28, 1948; "Dr. Harry A. Curtis Dies Here At 79," *The Knoxville Journal*, July 2, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

kept the horses and would haul them out there to ride horseback."[1808] Well into his retirement, Curtis continued to camp (including "in the high Sierras"), fish, and hunt.[1809]

Curtis also enjoyed gardening. He likely started gardening as a hobby while at the TVA in the 1930s, if not earlier.[1810] In his retirement from the TVA Board, "He loved to putter with both flowers and vegetables in his garden at the Curtis home."[1811] In fact, it was a rake accident while gardening that injured Curtis' good eye in 1960 and curtailed such activities; nonetheless, by the time he had passed away Curtis had grown and maintained "a garden of shrubbery and flowers" in a lot adjacent to his Knoxville home.[1812] Although gardening—and especially growing flowers—may be considered a feminine pastime in certain contexts, here it appears to support Curtis' frontier masculinity. First, having grown up on a farm, Curtis and those who knew him likely considered this a continuation of the

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[1808] Travis P. Hignett, interview by Mark Winter, April 13, 1983, Box 5, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); Beverly Burbage, interview by Mark Winter, September 15, 1983, Box 1, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta); R. A. Schatzel to Harry A. Curtis, September 20, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis"; Personnel Department, "Study of Experience Backgrounds and Earnings of TVA Administrative and Executive Personnel" (Tennessee Valley Authority, September 1943), Box 397, folder 9; Administrative Files, 1933-1957; Records of the General Manager; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[1809] Curtis to Kuebler, June 27, 1958; Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis."
[1810] S. D. Kirkpatrick to Dr. Harry A. Curtis, May 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections. Harry A. Curtis to Mrs. Edythe H. Taylor, February 27, 1946, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections. Also note that the Curtis home in Missouri had garden space in its front and back yards; see the photo in Mr. and Mrs. Harry A. Curtis to Mrs. Edythe H. Taylor, Christmas card, December 21, 1939, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1811] "Cancer Fatal to Crusader: Dr. Curtis, Former TVA Director, Dies," *The Knoxville News-Sentinel*, July 1, 1963, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1812] "Dr. Bell Buys Curtis Home," July 12, 1964, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Granger, "Dr. Curtis Still Tough Despite the Tears"; "Dr. Harry A. Curtis Dies Here At 79"; "Cancer Fatal to Crusader."

frontier-oriented 'know how' and physical labor that featured in his childhood. Second, to the extent that frontier masculinity is correlated to the 'husbandry' and 'civilization' of the non-manmade world (see chapter 3), gardening may be considered a symbol of this. That is, it may be a way for a man to 'commune with nature.'

By the time he had passed away, Dr. Curtis had grown "a garden of shrubbery and flowers" into an adjacent lot of his two-story house.[1813] The gravestone he shared with his wife included a large etching of wild mountainous terrain: two tall pine trees standing on gently rolling land with the occasional shrub in front of several mountains, tall clouds, and flying birds.[1814]

9.1.4 Travel

As discussed in Chapter 3, another feature of frontier masculinity is travel, especially to distant or foreign places; this serves as either a form or a symbol of adventure. Curtis was nothing if not well traveled within the U.S. and in Europe. As Curtis would later reflect, the 'career course' he selected in 1908—to pursue his interests and contributions rather than income or security—"meant moving from place to place."[1815] By the time of his death, the 15 years he lived in Knoxville as a TVA Director and a retiree was the longest he had lived in one place continuously.[1816] He frequently moved for new jobs every few years (at most), and he often took work trips as a consultant and while working for the TVA.[1817] He

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[1813] "Dr. Bell Buys Curtis Home."
[1814] Arthur Lizotte and Sandy Heffernon, "Harry A Curtis," Find A Grave: Memorials, July 28, 2005, https://www.findagrave.com/memorial/11440691/harry-a-curtis.
[1815] Harry A. Curtis, qtd. in "Dr. Harry A. Curtis Dies Here At 79."
[1816] "Dr. Harry A. Curtis Dies Here At 79."
[1817] Curtis, "Handwritten Autobiographical Account"; Harry A. Curtis to Arthur M. Miller, July 19, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

also traveled extensively within the U.S. for pleasure, while working and during retirement.[1818]

He traveled to Europe three times in 1926 and 1927 as a consultant for the National Fuels corporation.[1819] In 1928, Curtis made his first prolonged trip to Europe to represent the USDA at the International Nitrogen Conference. He traveled around a bit on the way to the conference, which was held on a ship sailing the Adriatic Sea. After the conference ended, attendees enjoyed a tourist cruise, and then Curtis visited several plants of new acquaintances he had made at the conference, sightseeing along the way.[1820] By the end of the three-month trip, Curtis had visited at least 39 cities and towns in France, Belgium, Germany, Switzerland, Austria, Czechoslovakia, Greece, and Italy (parts of which are now in Croatia and Yugoslavia).[1821]

Curtis would roam abroad several more times through his life, including for one more extended European stay in May through September 1945, on a wartime mission for the Technical Industrial Intelligence Committee (TIIC) of the U.S. Army.[1822] Having some time in London while waiting for his mission, Curtis made friends and managed to do some sightseeing with colleagues before he "finally got to Berlin and other German targets."[1823] Shorter European trips involved consulting assignments or simply vacations with his wife

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[1818] Curtis, "Handwritten Autobiographical Account"; Harry A. Curtis to Edythe Taylor, Christmas card, 1959, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; "Dr. Harry A. Curtis Dies Here At 79"; "Cancer Fatal to Crusader."
[1819] Curtis, "Handwritten Autobiographical Account," 71.
[1820] Curtis, "Handwritten Autobiographical Account."
[1821] Curtis, 105; Google Maps, accessed March 13, 2020, https://www.google.com/maps.
[1822] Curtis, "Part of the Record"; Curtis, "Handwritten Autobiographical Account."
[1823] Harry A. Curtis to Mr. R. A. Schatzel, September 22, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Schatzel to Curtis, September 20, 1948.

and younger daughter.[1824] Curtis also traveled to British Columbia, Canada, in 1939, possibly as a TVA consultant.[1825]

9.1.5 Frontier Imagery

Beyond the material ways in which Curtis lived frontier masculinity, this man also engaged with the frontier symbolically. The frontier imagery promoted by the TVA (as discussed in chapter 3) appealed to Curtis and likely contributed to his initial recruitment. He would later reflect on his first conversation with H.A. Morgan as an inspiring moment:

> He had a great vision of what the TVA might do for southern agriculture and, specifically, the TVA had inherited the U.S. nitrate plants at Wilson Dam which might fit into the agricultural program. The TVA needed a chemical engineer who would take the nitrate plants in hand and who would set up a research program on fertilizers. Would I join Dr. H. A. in trying to realize his dream of a vastly improved agricultural situation in the Tennessee Valley? The man, his vision, and his enthusiasm attracted me and when a formal offer from the TVA came along a few days later I accepted.[1826]

This job appears to have been presented as an adventure in multiple ways. First, the Tennessee Valley was emphasized as a place that needed help, a frontier at least with respect to agricultural development. Second, Curtis was being offered an opportunity to do something novel in his field, to do something never before done with U.S. Nitrate Plants 1 and 2, thus pushing metaphorical boundaries at least as much as physical ones. Fittingly, Curtis titled his 1957 retirement dinner address "Adventures in Faith."[1827] Building on the

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[1824] Curtis to Miller, July 19, 1948; Curtis to Taylor, 1959; Curtis, "Handwritten Autobiographical Account."

[1825] Arthur M. Miller to Mr. J. Buchanan, September 7, 1939, Box 7, folder 4; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

[1826] Curtis, "Handwritten Autobiographical Account," 233–34.

[1827] "Excerpts and Records: Dinner Meeting in Honor of Dr. H. A. Curtis, Eighth Annual Valley-Wide Meeting, Union-Management Cooperative Conferences," March 21, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis,

idea that "The TVA Act of 1933 was an adventure in faith on the part of Congress," Curtis reflected on his time with it before focusing on the topic of the conference, the Joint Cooperative Committees. Curtis was not averse to using frontier imagery in his language elsewhere, from frequently referring to his employment situations as "hitches" to requesting a "pow-wow" with a long-time fraternity brother about the organization.[1828]

Having grown up on a farm, Curtis continued to identify with farmers throughout his career. Particularly because so much of his chemical engineering work focused on fertilizer production, it fit nicely with a larger mission to serve a population that he held dear. In support of Curtis' 1948 appointment to the TVA Board, one friend wrote that Curtis "never lost touch with farm problems," particularly during his efforts to improve agriculture.[1829] As Chief Chemical Engineer at the TVA, Curtis worked closely with and "became very fond" of J. C. McAmis, the head of the Agricultural Relations Division.[1830] His autobiographical manuscript shows a great deal of pride in the "Farm Test-Demonstration" ("T-D") program that he credited McAmis with designing and to which Curtis's department contributed fertilizers.[1831] Curtis declared the program "a very successful one," adding, "I visited scores of these T-D farms and attended dozens of meetings where T-D farmers and their wives told their stories. It was an inspiration to hear

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"Adventures in Faith" (Valley-Wide Meeting of the Joint Cooperative Conferences, Gatlinburg, TN, March 21, 1957).

[1828] Curtis, "Handwritten Autobiographical Account"; Harry A. Curtis to Mr. John R. Kuebler, August 26, 1952, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

[1829] Arthur M. Miller to Hon. Chapman Revercomb, May 23, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

[1830] Curtis, "Handwritten Autobiographical Account," 247.

[1831] Curtis, 248.

them..."[1832] It was apparently such an inspiration that Curtis mused—if perhaps jokingly—about purchasing a Knoxville-area farm himself.[1833]

More broadly, the Coloradoan came to identify with the South. He "got his first good look at the Tennessee Valley" during his WWI work in Muscle Shoals, living there for two years.[1834] ("Since that long ago day when World War I landed me at the Shoals, it seems that destiny has linked me with the South," Curtis later wrote to an old acquaintance in 1948, upon his impending return to Knoxville on the TVA Board.[1835]) Despite moving north and east after WWI, his interest in the area persisted. "A number of us who studied with you at Yale can remember your interest in Tennessee Valley even in those days," reminisced a former student of his.[1836]

This interest wasn't limited to the Tennessee Valley or to the technical missions of Muscle Shoals & the TVA. After living in South Clinchfield, Virginia, in 1921-1923, Curtis wrote fondly of the rural lifestyle there, from the local sheriff, who, "by his own testimony, had 'never been nowhere,'" to "the local Klu [sic] Klux Klan which lacked a sense of humor…the clubhouse we built…a possum hunt…the 'Holy Rollers'; etc."[1837] Having left the operation for his new post at Yale, Curtis exposed a bit of homesickness for the Virginian county in his personal correspondence; however, he continued to visit

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[1832] Curtis, 250.
[1833] J. N. Junkins to Dr. Curtis, May 13, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1834] "Cancer Fatal to Crusader"; "Dr. Harry A. Curtis Dies Here At 79."
[1835] Harry A. Curtis to W. Mitchell, May 10, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1836] W. S. Guthmann to Dr. Harry A. Curtis, August 3, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1837] Curtis, "Handwritten Autobiographical Account," 115, 118; Williams to Thye, June 4, 1948; Edythe H. Taylor, "Edythe Helen Taylor Scrapbook," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

South Clinchfield monthly for the next year to oversee the plant and its transition to a new manager.[1838] These trips appear to have been rejuvenating, helping him connect to his frontier masculinity despite his new identity as an Ivy League professor. "I am going to spend a day hunting coons next trip down there," Curtis mused to a friend in 1923, "and old man Howell is saving up a bee-tree to be cut."[1839]

After moving to Knoxville in 1933, however, Curtis and his wife seem to have fallen in love with the place.[1840] This was not simply the love for a rural or remote area: after relocating to Columbia, Missouri for the UMO deanship, Curtis occasionally referred to that area as a "remote place," in contrast to Knoxville and elsewhere.[1841] This was a fondness for the South and for that southern city in particular; Curtis expressed their desire to return to Knoxville as early as 1946—long before the offer of TVA directorship—and Polly may have indicated her desire to return even before then.[1842] When news of his nomination became public, several friends recalled or posited that the couple would be happy to return.[1843] "I seem to recall that you said once that you liked Knoxville better than any place else that you had lived," wrote one.[1844] Curtis confirmed that they would indeed

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[1838] Curtis, "Handwritten Autobiographical Account," 69; Harry A. Curtis to Mr. Earle E. Daughton, October 17, 1923, Box 1, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1839] Curtis to Daughton, October 17, 1923.
[1840] Harry A. Curtis, "Vita Harry A. Curtis," n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections; Ham to Dr. Curtis, May 31, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Barnett F. Dodge to Dr. Harry A. Curtis, May 11, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1841] Dr. Harry A. Curtis to Mr. S. D. Kirkpatrick, May 11, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1842] Curtis to Mitchell, May 10, 1948; Curtis to Taylor, February 27, 1946; Dodge to Curtis, May 11, 1948; "Cancer Fatal to Crusader."
[1843] Dodge to Curtis, May 11, 1948; Kirkpatrick to Curtis, May 6, 1948; Dean A. Harvey to Dr. Harry A. Curtis, May 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Ham to Curtis, May 31, 1948.
[1844] Ham to Curtis, May 31, 1948.

be happy to go back.[1845] Others welcomed the prospect of having Curtis "return where you belong, and where you are needed," as one put it.[1846] By the time he retired from the Board, his wife wanted to move to Connecticut, close to their daughters, but Curtis still loved Knoxville so much that he reportedly "persuaded" her to remain there with him.[1847] They lived there until he passed away, at which point Polly did finally move to Connecticut.[1848]

Curtis' involvement in the symbolic frontier and 'firsts' also involved Curtis' construction of programs and institutions/groups through his life. For example, he designed and created (got the bureaucracy to approve of) the Chemical Engineering program and department at Yale[1849]. A major reason why he wanted to do so, he later reflected, was that "I thought being the granddaddy of chemical engineering at Yale would be something I'd like to have on my record."[1850] He was similarly proud of the development work he did in his professional chemical fraternity, Alpha Chi Sigma. As Vice President and the President of the national organization, he "installed" a chapter at the University of California and one at Stanford University, the only legacies of those terms that he mentions in his autobiographical manuscript.[1851]

[1845] Curtis to Kirkpatrick, August 30, 1948; Curtis to Mitchell, May 10, 1948.
[1846] Dr. Walter H. MacIntire to Harry A. Curtis, June 11, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; W. H. Mitchell to Harry A. Curtis, May 6, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1847] Harry A. Curtis, qtd. in "Dr. Harry A. Curtis Dies Here At 79."
[1848] Taylor, "Edythe Helen Taylor Scrapbook," 2; "Dr. Bell Buys Curtis Home."
[1849] "Cancer Fatal to Crusader"; Curtis, "Handwritten Autobiographical Account," 69.
[1850] "Cancer Fatal to Crusader."
[1851] Curtis, "Handwritten Autobiographical Account," 65.

9.1.6 Stewardship Philosophy

Philosophically, Curtis connected to the natural world heroically as a 'steward,' an identity popular among farmers, ranchers, and explorers. This connection emphasized husbandry over conservation, sometimes to the point of what some 21st-century observers might label exploitation. For example, in his work for the Commerce Department's 1944 initiative to actively develop the phosphate and potash deposits in the public domain out west, Curtis argued that the federal government should not build its own plants, and that the best way to lower costs for farmers was to find more economical ways to transport potash from private plants to farmers.[1852] If the federal government *were* to actively develop these resources, Curtis argued, they should set aside a "Government Reserve" ten times the one in existence; mining this much land was the only way to provide for a "big refinery" with low enough production costs to compete with the potash industry.[1853] The additional area was never reserved, and the project was abandoned before a public refinery was built.[1854] On the other hand, while at Yale (1923-1930), he consulted for the Connecticut Water Commission on "several problems concerning stream pollution."[1855]

As Dean of Engineering at the UMO, Curtis shared some thoughts on agricultural engineering in a brief editorial for the *Ag Engineer*, a new student-run periodical from the Missouri Branch of the American Society of Agricultural Engineers. Curtis first praised the periodical for providing opportunities for student development, through their creating the publication and by connecting with agricultural engineering "beyond the confines of

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[1852] Curtis, "Part of the Record"; Curtis, "Handwritten Autobiographical Account," 261–64.
[1853] Curtis, "Handwritten Autobiographical Account," 264.
[1854] Curtis, 261–65.
[1855] Curtis, 70.

classrooms and books."[1856] He then launched into a rather philosophical reflection of the relationship between engineering, more broadly, and "living things":

> Agriculture and engineering were once considered as naturally associated…But in the course of years agriculture and engineering have drawn very far apart, and each has lost something in the separation. Engineering has become too much the servant of industry and those who practice engineering too much preoccupied with steel and concrete and mechanisms and energy in its various forms; they have lost the sense of kinship with all the living things of the world, have forgotten their absolute dependence on the products of soil and rain and sunshine. Meanwhile the agriculturist has noted with interest, and perhaps wonder, the great and varied accomplishments of engineering, some of which he has been able to utilize, but most of which have belonged to another world than his. It is high time that engineers began to think of agriculture, not alone that engineering of all sorts may be brought to bear on this most important of all fields of human activity--agriculture--but that engineers may regain a contact which is wholesome and good for their industry-soaked souls.[1857]

Curtis' interest in agriculture may have cooled during his years on the TVA Board, and he developed a greater interest in a form of conservation that was ultimately meant to develop the land for industrial use. As one obituary explained, in working towards the long-term development of the Tennessee Valley, Curtis came "to believe that the Valley's future prosperity will depend largely on its continued industrial growth, creating the need for land no longer farmed to be 'protected' from erosion or trees 'not worth cutting.'"[1858] At first glance, one may get an image of industrial plants' needing less land than agriculture, leaving the formerly-farmed land fallow to return to a 'natural' state without human interference. The need to "protect" the land from erosion, however, implies human

[1856] Harry A. Curtis, "The Deans Say: (Dean of Engineering)," *Ag Engineer*, n.d., Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1857] Curtis.
[1858] "Cancer Fatal to Crusader."

interference, as does the curious idea that land needs to be "protected" from trees that would be "not worth cutting" because their timber wouldn't serve human needs.[1859]

9.1.7 Self-Sufficiency

As discussed in Chapter 3, another concept closely related to frontier masculinity is that of self-sufficiency. Curtis was raised with an ethos of material self-sufficiency and a passion for intellectual independence that he would carry through his life and even preach to others.

His childhood home was one built around "economy," as Curtis put it in his autobiographical manuscript.[1860] "Apparently my father had reached the conclusion that the less a farmer buys and sells the better off he is," Curtis mused, "for it was always our aim to be as self-contained as possible." [1861] Their farm production, Curtis claims, was mainly for their own consumption, selling milk for "our chief source of cash income and it was never plentiful," occasionally selling some hay or grain, and milling their requisite flour but once a year.[1862] "I believe that if we had actually been snow-bound from October to April we would not have run short of food."[1863] His father's frequent struggle to own a farm (which he lost sometime in the 1890s, possibly due to economic recession) probably emphasized the family's determination to remain self-sufficient when possible.[1864]

[1859] Harry A. Curtis, qtd. in "Cancer Fatal to Crusader."
[1860] Curtis, "Handwritten Autobiographical Account," 21.
[1861] Curtis, 21.
[1862] Curtis, 21–22.
[1863] Curtis, 22.
[1864] Curtis, "Handwritten Autobiographical Account."

As mentioned in a previous section, Curtis supported himself and paid his own way through high school and college.[1865] He also valued material self-sufficiency later in life, even on an interpersonal level. When he declined an honorary membership to a local country club upon his admission to the TVA Board of Directors and his return to Knoxville, the only justification Curtis cited was, simply, "I have made it a lifelong rule to pay my own way and not to accept large favors which I could not hope to return."[1866] (The special membership—reserved for the governor, justices of the state supreme court, the UTK president, and TVA directors—required dues but waived the $500-plus initial fees.)[1867]

Curtis was also determined to pursue an intellectual self-sufficiency of sorts. Recall his childhood pursuits in science and technology that (he proudly noted) occurred outside the classroom, as well as his deliberate pursuit of a liberal education in college.[1868] As a professor, he spent time meditating on how one becomes a good teacher or a good student: "I arrived at the conviction that a student is really on his way when he consciously takes his own education in hand. I saw then that I had long ago begun to do this."[1869] He reflected on his extra reading and humanities courses when in undergraduate as well as his acquaintances with professors in other fields, musing, "At this time I did not clearly realize that I had in fact taken my own education in hand," as if it were already ingrained in his personality.[1870]

[1865] Curtis.
[1866] Harry A. Curtis to Mr. C. Jack Brakebill Jr., December 30, 1954, Box 7, folder 4; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1867] Mr. C. Jack Brakebill Jr. to Harry A. Curtis, December 22, 1954, Box 7, folder 4; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1868] Curtis, "Handwritten Autobiographical Account."
[1869] Curtis, 57–58.
[1870] Curtis, 58.

9.1.8 Preaching Independence

Finally, Harry Curtis was so enmeshed in the independence inherent in frontier masculinity that it influenced his support of others' material and (especially) intellectual independence. Quite early in his teaching career, Curtis emphatically encouraged students to take charge of their own intellectual developments, believing that "the greatest single service a teacher can render a student is to get him to plan and put into practice his own procedure toward the goals of technical competence and liberal education."[1871] When reflecting on poor and successful teaching styles in his autobiographical manuscript, Curtis recalled, "In my own experience I particularly enjoyed those classes in which the students could and did more or less take over the class discussion, argue with each other and even get excited."[1872]

As Chief Chemical Engineer at the TVA, Curtis encouraged the delegation of authority to employees through cooperative initiatives, a suggestions scheme, and individual assignment.[1873] "Dr. Curtis delegated authority when he perceived an employee was capable and willing to accept responsibilities," Edythe Taylor later wrote to President Truman and the Truman Library, "& upon many occasions he stated that his employees were not working <u>for</u> him but <u>with</u> him in accomplishing a task."[1874] This mentality emphatically extended not just to technoscientific employees but to secretaries, as well. Taylor frequently noted his use of "working with him," and this terminology crops up in

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[1871] Curtis, 60, 57–59.
[1872] Curtis, 55–56.
[1873] Curtis, "Adventures in Faith"; Taylor, "Edythe Helen Taylor Scrapbook."
[1874] Emphasis in the original. Edythe H. Taylor to The Honorable Harry S. Truman, Copy, February 4, 1966, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

Curtis' personal correspondence.[1875] Speculating to Taylor in 1946 about the possibility of returning to Knoxville as a TVA consultant, Curtis noted, "you know that I would be happy to have you working with me again."[1876] He supported Taylor's independent and adventurous spirit outside of work as well. Some time after her husband's premature death, Taylor planned a lengthy solo international trip for genealogical research. "Your plan to take a trip to far-away lands sounds interesting, and we hope that you can work out satisfactory arrangements," Curtis wrote for himself and his wife, adding, "the trip should be fun."[1877]

His strong support for an independent spirit in the TVA extended beyond Curtis' direct employees. Regarding the TVA's overall methodology in the 1930s, Curtis sat firmly in H. A. Morgan's camp, proselytizing its work with existing local institutions as a means to empower them and, by extension, all Valley residents. Curtis, in turn, followed H. A. Morgan's criticism of A. E. Morgan's approach to the Valley, described in chapter 4. He interpreted this approach as declaring that "the TVA should go about the tasks specified in the Act without regard to the opinions and wishes of local people or local organizations."[1878] Decades later, during his speech at the 1957 dinner in his honor, Curtis expressed appreciation for the rise of "justice" in company-labor dealings, noting that, "before there can be much willing cooperation between a company and its employees, simple justice must prevail, and that is a situation that has been slow in coming."[1879] He

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[1875] Taylor, "Edythe Helen Taylor Scrapbook," 4; Curtis to Taylor, February 27, 1946.
[1876] Curtis to Taylor, February 27, 1946.
[1877] Harry A. Curtis to Mrs. Edythe Taylor, March 7, 1961, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.
[1878] Curtis, "Handwritten Autobiographical Account," 237.
[1879] Curtis, "Adventures in Faith."

took time to reflect on the Ludlow Massacre of striking coal miners in Colorado, which "I remember well - and I do not admit to being an old man."[1880] He took a moderate tone as he proceeded, noting, "Times have changed since then, and public opinion has changed, and company thinking has reluctantly and slowly changed, and labor organizations have grown strong and wealthy and, unfortunately, not as firmly self-disciplined as they should be."[1881] Curtis, it seemed, disliked any organization's growing "fat and complacent," regardless of its status or goal.[1882]

In that same speech, Curtis declared his "fondest hope for TVA" after his retirement: that the "new member on the TVA Board after next May…in addition to competence and fine character, may possess a mind of his own, a thoroughly and sturdily independent mind."[1883] He would repeat this hope for a "sturdily independent man" at least once, adding that TVA would have "hell to pay internally and externally" if his predecessor were not one.[1884] He did not make this assessment in a vacuum: General Vogel had joined the Board in 1954. Curtis frequently fought the new Eisenhower appointment on several fronts as the latter sought to diminish the might of the public corporation (see the section "Curtis vs. Vogel," below).[1885] Nonetheless, it is fitting that the solution Curtis envisioned was another man at least as independent as he. This meant critical thinking skills as well a freedom from association with influential institutions. A 1960 article on Curtis reported that he had been "scared to death" when A. R. Jones succeeded him in 1957 because Jones

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[1880] Curtis.
[1881] Curtis.
[1882] Curtis.
[1883] Curtis.
[1884] Harry A. Curtis, qtd. in "Cancer Fatal to Crusader."
[1885] Erwin C Hargrove, *Prisoners of Myth: The Leadership of the Tennessee Valley Authority, 1933-1990* (Princeton University Press, 1994); "Cancer Fatal to Crusader."

had worked with the Budget Bureau and the Kansas Commission. His fears failed to materialize. The paper summarized Curtis' assessment with brief direct quotations: "...'from all I've learned' Mr. Jones is a 'pretty steady wheelhorse' of 'independent mind' who does his own digging when a question confronts him."[1886]

9.2 Curtis and Military Masculinity

9.2.1 Curtis in the Military

At certain points in his life, Curtis was swept up in war efforts, voluntarily if not enthusiastically. According to his autobiographical account, once Curtis surmised that the U.S. would become involved in WWI, "Without giving the matter much thought I just assumed that if this country did declare war I would enlist. And since I knew nothing of military matters the idea occurred to me that I should get some training at the first opportunity."[1887] As a result, Curtis joined Troop D of the First Colorado Cavalry in the Colorado National Guard in January 1916, over a year before the U.S. entered the war.[1888] He rose to corporal and then sergeant—but only, he later maintained, under the urging of his superior officer, a UCO Dean who had revived their formerly inactive troop.[1889] He was commissioned as a second lieutenant in June 1916, and first lieutenant in April 28, 1917, just after the official U.S. entry into the war.[1890] His troop was drafted into Federal Mexican Border Service but remained in Colorado the entire time he was in it.[1891] During that time,

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[1886] Granger, "Dr. Curtis Still Tough Despite the Tears."
[1887] Curtis, "Handwritten Autobiographical Account," 204.
[1888] Curtis, 204–5; Wilbur Fisk Stone, ed., *History of Colorado*, vol. Volume 1 (Chicago: The S. J. Clarke Publishing Co., 1918), 729, https://www.google.com/books/edition/History_of_Colorado/-uVYAAAAMAAJ?hl=en&gbpv=0; "Dr. Harry A. Curtis Dies Here At 79."
[1889] Curtis, "Handwritten Autobiographical Account," 204.
[1890] Curtis, 207, 208; "Dr. Harry A. Curtis Dies Here At 79."
[1891] Curtis, "Handwritten Autobiographical Account," 205.

Curtis trained and drilled his men in riding and shooting.[1892] He recalled that it was "a maturing experience" and that "I did learn something of handling men" through it.[1893] When he was called to D.C. in September 1917 and assigned to the Nitrate Division of the Army's Ordnance Department, "my days with troops in the field…came to an end."[1894]

9.2.2 Curtis' Contribution to Defense

Although no longer a military officer in the field, Curtis contributed to war efforts several more times as an engineer and educator. As part of the Ordnance Department's Nitrate Division from 1917 to 1919, Curtis' work at U.S. Nitrate Plant #1 and the Fixed Nitrogen Research Laboratory (FNRL) was of great military importance, and he consciously emphasized this.[1895] The production of gunpowder and high explosives, he explained in his autobiographical manuscript, required fixed nitrogen (or its products). As a result, every country with a modern military relied on natural deposits of fixed nitrogen, which only existed in certain countries, particularly Chile.[1896] "No nation could feel safe in national defence [sic] so long as the only large supply of fixed nitrogen was in Chile alone," Curtis wrote.[1897] As a result, the U.S. sought methods to synthetically fix free nitrogen at U.S. Nitrate Plants #1 and #2.

As the U.S. entered WWII, Curtis again contributed to national defense in multiple ways. As a consultant to the TVA, Curtis contributed to the production of "elemental phosphorus used in incendiary and smoke bombs" as the Muscle Shoals phosphorus plant.

[1892] Curtis, 207; "Dr. Harry A. Curtis Dies Here At 79."
[1893] Curtis, "Handwritten Autobiographical Account," 216, 208.
[1894] Curtis, 210; Curtis, "Vita Harry A. Curtis."
[1895] Curtis, "Handwritten Autobiographical Account"; Curtis, "Vita Harry A. Curtis."
[1896] Curtis, "Handwritten Autobiographical Account," 82.
[1897] Curtis, 83.

This plant produced 60% of the elemental phosphorus for such use in WWII, and it would later produce all of the elemental phosphorus used in the Korean War—both facts proudly noted in one of Curtis' obituaries.[1898] Curtis' main employment during WWII, however, was as Dean of Engineering at UMO. Here, ""I toyed with the idea of taking leave from my position at the University of Missouri and getting into some phase of war work," he recalled.[1899] The "war work" came to him, however, when his department received groups of Army and Navy recruits for technical training, a program he directed.[1900] Once the program ended, Curtis "was again considering" what he could do for the war effort when another opportunity arrived.[1901] He was sent on a technical mission to Europe in summer 1945 as part of the Technical Industrial Intelligence Committee of the U.S. Army.[1902] Curtis left no record documenting details of the mission once it reached continental Europe; however, the fact that the committee consisted solely of "a small group of technical men" at this point suggests that it involved assessment of the enemy's development and production of materials relevant to the war.[1903] By 1948, Curtis had contributed enough to national defense that Walter N. Jones felt able to point it out in his letter supporting Curtis' appointment as director of the TVA (an agency that had consciously linked itself to national defense in several ways, as discussed in chapter 6). "Throughout his career," Jones wrote of Curtis, "he has responded unreservedly when his country has called."[1904]

[1898] "Cancer Fatal to Crusader."
[1899] Curtis, "Handwritten Autobiographical Account," 266.
[1900] Curtis, 266.
[1901] Curtis, 267.
[1902] Curtis, 267–68.
[1903] Curtis, 267.
[1904] Walter N. Jones to The Honorable Chapman Revercomb, May 24, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

9.2.3 Criticism of the Military

Despite his participation in the U.S. military and all of the work he did to support it, Harry Curtis was emphatically critical of the military at nearly every turn. One may initially interpret his criticism of the military as a feature that disassociates him from military masculinity; indeed, this was effectively what he intended, since he appears to have truly disdained those who donned the mantel of military masculinity without earning it. A closer inspection, however, suggests that the content of Curtis' criticism of the military actually emphasized his own military masculinity: Most of the time, his criticisms expected a *better* military and implied that he (or someone as competent as he) could have done better in reaching its goals (with which he implicitly agreed). Contrast this with, say, a pacifist, whose critique focuses on the fundamental goals and methodology of any military (no matter how effective), and one may see that the values, personality, and (resultingly) masculinity of this man align very closely with those of the U.S. military. Beyond his mild criticism of the "terrible war gas" that his friend and department chair at Northwestern had developed during WWI, Curtis showed no pacifist tendencies.[1905]

"[T]he two years I spent in military service during World War I constituted a period in which I worked very hard and accomplished very little," Curtis wrote in his autobiographical manuscript.[1906] Reflecting on all of the time he had spent in federal service, Curtis declared this period "the least satisfactory to myself or productive of worthwhile results."[1907] His initial management of his troops in 1916 forced him to take

[1905] Curtis, "Handwritten Autobiographical Account," 67, 96.
[1906] Curtis, 216.
[1907] Curtis, 28.

"thoughtful note of my own shortcomings"; otherwise, Curtis places the blame for all of his frustrations on the incompetence, laziness, and poor organization of others in the military.[1908] When he enlisted, Curtis claims, "I had no liking for things military but now turned attention to them," and his dislike quickly turned to disrespect.[1909] He was quickly promoted to "corporal and then…sergeant, not really knowing enough for each job," he claims, implicating those who promoted him.[1910] When his troop was camped near Golden, Colorado with a few other Colorado Cavalry troops, Curtis wrote, "I venture the guess that seldom has so much ignorance of military matters been assembled in one camp."[1911] Major J. Nelson Smith was in charge of the squadron.[1912] According to Curtis, Smith "had evidently been in the National Guard for some time but was almost completely innocent of any knowledge of horsemanship, rifles, sidearms, drill or camp discipline," Curtis recalled, adding, "He was a kindly, lazy fellow."[1913] Of the four captains below him, two "were uneducated and lazy fellows," as well.[1914] The other two—a "genial tobacco-chewing lawyer" and his own captain Washburn, dean of the UCO pharmacy school—were hard workers but had not yet had enough experience to be "competent military officer[s]."[1915] Given that Curtis grew up riding horses and enjoyed hunting, the ignorance of riding and shooting that he observed in "the whole squadron" and its officers was surely disappointing.[1916] His troop "was mustered out of Federal service" in the fall so that its

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[1908] Curtis, 208.
[1909] Curtis, 204.
[1910] Curtis, 29–30.
[1911] Curtis, 205.
[1912] Stone, *History of Colorado*; Curtis, "Handwritten Autobiographical Account," 30.
[1913] Curtis, "Handwritten Autobiographical Account," 30.
[1914] Curtis, 30–31.
[1915] Curtis, 30–31.
[1916] Curtis, 31; Curtis to Kuebler, September 21, 1958; Lindsay, "Honors Are Old Hat for Ex-TVA Director Curtis"; Granger, "Dr. Curtis Still Tough Despite the Tears"; Burbage, interview.

student members could return to class, and Curtis declared that first summer of service in 1916 "a waste of time."[1917]

The next summer, his troop was stationed at Camp Baldwin, CO, under the command of "a lieutenant colonel, a pompous gent whose military experience was limited to the Philippines."[1918] Curtis was a second lieutenant and had profited from his experience training men; however, "The cavalry drill manual had been completely revised and much changed since our camp days a year earlier and we had to begin all over again."[1919] Further, two troops in his squadron were assigned new officers that year who "were innocent of military training, those of Troop F being particularly ignorant."[1920] Perhaps for that reason, "the men of Troop F mutinied" that August, shortly after Curtis had been commissioned a first lieutenant in the Army. "The officers were relieved of duty and I was placed in command," he recalled, "The men had been recruited in the coal-mining region of southern Colorado and were a mixed lot of Mexicans, Indians, and other foreign origins and were supposed to be a tough outfit. I had no trouble with the troop and worked the men hard."[1921] He did so until he was ordered to D. C. and reassigned to the Army Nitrate Division.[1922]

Once he was transferred to Sheffield, AL (adjacent to Muscle Shoals), Curtis found that he had not left frustration behind. The Army had initially planned to locate the Nitrate Division's laboratory in Washington, D.C., but the division "finally set up" a laboratory in a former stove factory near U.S. Nitrate Plant #1 "to investigate the conversion of ammonia

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[1917] Curtis, "Handwritten Autobiographical Account," 207–8.
[1918] Curtis, 208.
[1919] Curtis, 209.
[1920] Curtis, 209.
[1921] Curtis, 209–10.
[1922] Curtis, 210.

to nitric acid."[1923] Curtis worked here "with a staff of chemists and chemical engineers until the war ended,"[1924] but the entire military group at Sheffield consisted of "about forty commissioned officers and nearly three hundred enlisted men." The Colonel overseeing this project and the Lieutenant Colonels he appointed to it (a U Michigan chemical engineering dept. chair and a Michigan graduate with industrial experience) were all quite competent, by Curtis' estimate.[1925] On the other hand, Curtis wrote, "In immediate command of the enlisted men was a Captain J. B. Hemphill whose ignorance of things military reminded me of some of the officers at Camp Golden and Camp Baldwin."[1926] Curtis would later jokingly refer to this time as the "Battle of Sheffield," perhaps (out of self-deprecating humor) highlighting that this was no warfront, or perhaps due to the frustrations they faced in their work.[1927] U.S. Nitrate Plant #1 was under construction but left incomplete at the end of the war, and Curtis, "Reviewing this second period…would say that my contribution to the winning of the war was exactly zero."[1928]

Another period of frustration with the military came in 1940, when Curtis assisted Chester Davis, a member of the National Defense Advisory Committee. The Committee was worried about the country's supply of fixed nitrogen in case of war; however, the Army refused to supply Davis information on its predicted needs or sources of the material.[1929] Curtis convinced Davis that "he had a right to know what the Army planned" for ammonia

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[1923] Curtis, 93.
[1924] Curtis, 93.
[1925] Curtis, 210–11.
[1926] Curtis, 211.
[1927] Harry A. Curtis to Lt. Lyman R. Flook, October 1, 1956, Box 2 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1928] Curtis, "Handwritten Autobiographical Account," 93, 216.
[1929] Curtis, 106.

production and got him to authorize Curtis to procure that information.[1930] When the Army continued to give Curtis "the old run-around," he proposed that the NDAC refuse to approve any Army contract until Davis received the needed information.[1931] Davis convinced the rest of the committee to back him on this.[1932] "A few days later I was summoned to Davis['] office," Curtis recalled, "Around his table sat a group of very mad Army generals."[1933] Curtis relayed the rest of the story in a way that emphasized his level-headed cleverness and the anger of the generals. In the end, he got the needed information the next day.[1934]

Even in his role as an educator, Curtis grumbled about the work he did with the military and likely butted heads with those in charge. As dean of engineering at UMO in 1943, his department received about 1,200 Army and Navy enlistees for technical training. Curtis recalls, "I was up to my neck in one phase of the war effort. It was not a very satisfactory venture since the Army's idea of education does not agree with that of educators. I was glad when the Army suddenly abandoned the program and all the trainees departed."[1935]

Although Curtis rejoined the war effort in 1945 through the TIIC's mission to Europe, most of his autobiographical recollections of that experience were of his time waiting around in London and a lack of quality oversight. He recalled "that I have never

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[1930] Curtis, 109.
[1931] Curtis, 109–10.
[1932] Curtis, 110.
[1933] Curtis, 110.
[1934] Curtis, 110–11.
[1935] Curtis, 266.

encountered such confusion, muddling, and poor management elsewhere or at any other time in my life to date."[1936]

9.2.4 Opposition to Bureaucracy and Hierarchy

Perhaps the trait for which Curtis was most well-known, aside from his technical expertise, was his opposition to bureaucracy and hierarchy throughout his life. As discussed in chapter 3, an opposition to these often-intertwined features is an extension of the dedication to independence and self-sufficiency inherent in frontier masculinity, and the antithesis of a major trait of military masculinity. Curtis seems to have inherited this quality as his birthright and held onto a form of it even as he climbed the ranks of a bureaucratic system.

Curtis was raised with a disdain for "the law-makers in Washington" who failed to grasp the practical effects of limited homestead allotments or the legal loopholes Coloradoan farmers used to extend their land holdings nonetheless.[1937] As a student, he broke rank in the academic hierarchy by befriending teachers, principals, professors, and even the UCO president, occasionally stopping by the office of the latter with suggestions for the school.[1938]

When heading the Nitrogen Survey in the 1920s, Curtis managed to create a Nitrogen Survey Division in the Commerce Department, despite the Survey's being a relatively short-term project. "This was high hat on my part and considerably a concession

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[1936] Curtis, 268.
[1937] Curtis, 13–15.
[1938] Curtis, "Handwritten Autobiographical Account"; John B. Ekeley to Eta Chapter of Alpha Chi Sigma, April 15, 1940, Box 4 folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.

on the part of the Department, but I had two things in mind at the time," he wrote, "First, I didn't want any assistant-assistant[-]assistant somebody-or-other to meddle in my job and, second, as head of a division I was authorized to attend the intervening weekly conferences that Secretary Hoover held with his staff."[1939]

In 1925, as part of the Muscle Shoals Inquiry Committee, he maintained a "dim view of government attempts to operate a commercial enterprise," writing almost all of the minority report, including "some sour remarks about government bungling in business."[1940] Curtis' view of public-private enterprises, of course, would shift through his work with the TVA: "I was not…as liberal in my thinking as I became later, and…These remarks were later to plague me at times when I was supporting the TVA in the witness stand."[1941]

As the TVA Chief Chemical Engineer, Curtis occasionally worked to flatten the hierarchy below and above him, and he railed against the bureaucracy that developed in the Agency's first decade. The Chemical Engineering Division created a suggestions scheme very early in its existence, Curtis claimed, and the chemical engineering operations at Wilson Dam experimented with management-labor undertakings long before the well-publicized establishment of the first Joint Cooperative Committee in 1942.[1942] Curtis also directly criticized Lilienthal for implying that technical experts were poorly suited to the TVA Board.[1943] Curtis was not standing up for engineer-turned-TVA-chair A. E. Morgan—Curtis made it clear at various points that he considered this Morgan incompetent

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[1939] Curtis, "Handwritten Autobiographical Account," 223.
[1940] Curtis, 35–36.
[1941] Curtis, 35–36.
[1942] Curtis, "Adventures in Faith."
[1943] Harry A. Curtis to David E. Lilienthal, "Sez One Expert to Another," Draft of memo, August 14, 1935, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections.

and unfit for leadership—but his willingness to so vehemently 'check' Lilienthal on this generalization confirms that no one in the corporate hierarchy was immune to his blunt criticisms.[1944] Two years later, during a Presidential committee's investigation of TVA leadership, Curtis supported a restructuring of the Agency that separated the TVA Board from technical leadership and that created a position for "a general manager if jurisdiction and independence were given to the technical men at the head of TVA activities."[1945]

Such a desire for independence was apparent in his infamous "New Year Resolutions" memo, sent to "A Dozen or So of My Esteemed Associates" on January 1, 1937. In it, Curtis resolved to delegate as much bureaucratic procedure as possible so that he could "henceforth devote more of my time to creative technical work and less to signing forms." He struck a vehement tone, thinly disguising his disgust with a good sense of humor. "During the past three years I have tried by protest, by ridicule, by joking, by hyperbole, and by various other means, to do my bit toward keeping our T.V.A. from sinking in the deadly mire of petty rules, red tape, delays, and cumbersome procedures into which Government organizations sooner or later disappear," he opened, adding, "It is not evident that I have succeeded in more than displeasing some of you folks." Apparently giving up on his ability to reform the entire system, Curtis settled for requesting that everyone accept the signature of his secretary (Edythe Taylor) or his "able chief assistant, Mr. Arthur Miller, who has a fine personality and is temperamentally better suited than I

[1944] Curtis to Lilienthal; Curtis, "Handwritten Autobiographical Account"; Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."
[1945] Hargrove, *Prisoners of Myth*, 70.

am to handle some of the jobs that drive me wild."[1946] In a note of dark humor, Curtis added, "Mr. Miller is just now released from a hospital. His next stop may be an insane asylum; mine certainly will be if I see any more forms, or red tape, or job descriptions, or Boards of Reviews or Administrative Memoranda." The humor appeared again in his excessively long and exaggerated closing:

> Here's wishing all you folks a Happy New Year. May those of you who love red tape have much of it to love; may those who think that T.V.A. is a model business organization, continue in this happy idea; may those of you who think that T.V.A. is a just and generous employer of men, continue so to think; may those of you who take comfort in endless delays have no occasion to hurry; may those of you [who] make rules for this and that never falter in your faith; may every man who is inspired to issue an administrative memorandum be taken seriously; may those who revel in 'forms' never lack for need of new ones; in short, may each of you in the coming New Year find joy in your jobs. And, in the same spirit of tolerance, bear with me if I worship other gods than these.[1947]

Significantly, he took aim not only at those who appeared to "love" excessive paperwork and procedures, but also at those who were happy with the Agency's organization and employment practices. His criticism spread more widely than may have been the original intent; it was not merely the paperwork that tested his limits, but qualities of the entire institution. Regardless, the memo became famous in the Agency. After Curtis left for the UMO Deanship, Edythe Taylor recalled that the TVA Board asked her for a copy of it "for use in a meeting."[1948] The memo was also read aloud at the 1957 dinner in his honor as humorous evidence of his character.[1949]

[1946] Harry A. Curtis to "A Dozen or So of My Esteemed Associates," "NEW YEAR RESOLUTIONS," January 1, 1937, Box 7, folder 3; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1947] Curtis to "A Dozen or So of My Esteemed Associates."
[1948] Taylor to The Honorable Harry S. Truman, February 4, 1966.
[1949] Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."

His distaste for increasingly complex TVA bureaucracy followed Curtis to his resignation as Chief Chemical Engineer and beyond.[1950] In fact, he would later point to it as one of the main reasons he initially left: "Several months prior to the summer of 1938 there had been some changes made in the administrative set up in the TVA that displeased me[,]" he reflected, "and I told Dr. H. A. at that time that I did not see how I could accommodate myself to the changes. I was therefore in a receptive mood when the University of Missouri offered me the deanship in the College of Engineering."[1951] Curtis was so well known for "curs[ing] 'red tape'" by this time that colleagues at a farewell party for the engineer gifted him "a big roll of red tape framed in mourning."[1952] In 1939, settling into his new roles as Dean of Engineering and TVA consultant, Curtis wrote Taylor that his latest consulting trip to Muscle Shoals "did make me homesick for that part of my old job. But there are too many annoyances in T.V.A. for a man of my temperament, and I would not want to return under present organization."[1953]

With the deanship, Curtis had reached the upper echelons of administrative bureaucracy, and he would stay there as a member of the TVA Board. This may have softened his view of bureaucracy somewhat, but he still did what he could to flatten hierarchy and simplify bureaucratic procedure when he could. As dean, he befriended

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[1950] Dr. Harry A. Curtis to Mr. D. O. Myatt, May 10, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections. Harry A. Curtis to Mrs. Edythe H. Taylor, January 18, 1939, Box 1, folder 1; Edythe Helen Taylor Scrapbook, MS.0994, University of Tennessee Libraries, Knoxville, Special Collections. Curtis also "cussed the Personnel Division month in and month out," a sentiment that the head of Personnel sarcastically confirmed. See Curtis, "Adventures in Faith"; Harry L. Case to Mr. Lloyd L. Huntington, February 18, 1957, Box 7, folder 13; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1951] Curtis, "Handwritten Autobiographical Account," 255.
[1952] Curtis to Myatt, May 10, 1948.
[1953] Curtis to Taylor, January 18, 1939.

students and the employees under him, from faculty to secretaries.[1954] While supporting his nomination to the TVA Board, one friend claimed that Curtis held "no fondness for a paternalistic government."[1955] Meanwhile, Curtis wrote to a friend, "I believe that the TVA should explore all the possibilities which offer promise of giving to a government agency that flexibility which is so valuable in private industry."[1956]

This goal did not change once Curtis was ensconced on the Board. At that point, each recommendation from TVA staff went through several layers of bureaucratic approval before being passed up the hierarchy. "The result was that anything that came out of Recreation prepared by the technical people on my staff bore very little resemblance to what the General Manager and the Board saw," Robert Howes recalled, adding, "I'm just using myself as an example; it was the same throughout the organization."[1957] The new TVA Director took field trips to different TVA locations across the Tennessee Valley, and he picked up on this. "I want to know what the staff thinks down in the field," Curtis reportedly declared, "I don't want to know what the General Manager's office thinks."[1958] Curtis proposed a more streamlined approach: division directors would again reported directly to the General Manager; the offices that had been set up between them would be eliminated; and "the people who were doing the work" would attend relevant meetings between the General Manager and the Board.[1959] He "persuaded" the rest of the Board to

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[1954] Curtis, "Handwritten Autobiographical Account," 78.
[1955] Alfred H. White to Arthur H. Vandenberg, May 20, 1948, Box 7, folder 12; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1956] Curtis to Myatt, May 10, 1948.
[1957] Robert M. Howes, Second Oral History Interview, interview by Mark Winter, March 30, 1982, 10–11, Box 5, folder 3; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[1958] Harry A. Curtis, qtd. in Howes, 10–11.
[1959] Howes, 11.

approve it, "And so instantly," Howes recalled, "instead of going through something like seven layers of review, there was only one man between me and the General Manager and only two between the me and the Board. This made a tremendous difference."[1960] This new system endured in the TVA for decades to come.[1961]

Another restructuring in 1952 turned "the technological [departments]—construction engineering, power, and chemical engineering" into dominant offices (over such divisions as forestry and regional studies), and it allowed TVA Director Curtis to also direct the Office of Chemical Engineering.[1962] Curtis likely envisioned this as a further step toward direct communication between "the staff…down in the field" and the Board.[1963]

Curtis was depicted in "partnership" with Tennessee Valley residents and institutions outside the TVA, as well. "It wasn't long before Dr. Curtis was personally demonstrating his version of TVA 'partnership' with the people and institutions of the Valley," reads one obituary.[1964] He helped recruit quality leadership for UTK's chemical engineering programs, and he helped other Southeastern universities in a similar fashion. Working in such "partnership" with local academia surely supported the TVA, but so too did helping local research and industry outside of academia: Curtis helped with the creation of a state minerals laboratory in Asheville, North Carolina, and he helped bring a large newsprint manufacturing plant to Calhoun, Tennessee. At a glance, this may read like the magnanimity of white-collar masculinity, but Curtis supported a sentiment of working *with*

[1960] Howes, 11.
[1961] It lasted at least "until" the General Manager who served in 1982. See Howes, 11.
[1962] Hargrove, *Prisoners of Myth*, 129.
[1963] Harry A. Curtis, qtd. in Howes, Second Oral History Interview, 10–11.
[1964] "Cancer Fatal to Crusader."

local institutions (like the North Carolina state government) and helping them "to do better the jobs they were set up to do."[1965]

In his 1957 speech at the dinner in his honor, Curtis spoke very positively of TVA's relative independence from bureaucratic control:

> The TVA Act of 1933 was an adventure in faith on the part of Congress. It was based in faith that such a unique Federal agency as the TVA could do the job visualized; faith that men who professed a belief in the wisdom and feasibility of the Act could be given freedom in devising fair and reasonable ways of doing the job. Section after section of the TVA Act cites what the TVA is authorized to do, and the words 'must' or 'shall' seldom appear in the text. Never before or since has the Congress gone so far in an adventure in faith.[1966]

Continuing to set faith and freedom in opposition to bureaucratic control, Curtis shifted to a smaller scale: Within the TVA, he claimed, procedures developed from a similar faith "that men and women employees can be depended upon to do their jobs intelligently and honestly and enthusiastically, and can be given freedom to devise and carry out programs consistent with TVA's aims and goals."[1967]

Narrowing focus again, Curtis discussed the Central Join Cooperative Committees (the subject of the conference) and cooperative and hierarchy-flattening initiatives by others in the TVA. He pointed out some early cooperative initiatives by the chemical engineering division, and he lauded the Agency's Maps and Surveys Branch for its recently-printed branch directory. The democratizing force of the directory, in Curtis' eyes, was the fact that it contained names and photos of its employees, but no position titles "with the exception of the four elevator operators, the building superintendent, and the

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[1965] Curtis, "Handwritten Autobiographical Account," 237.
[1966] Curtis, "Adventures in Faith."
[1967] Curtis.

concessions operator. Mr. Robert E. Frierson is just one of the employees and if anyone wants to know his positions he will have to look elsewhere for the information." Curtis added, "I believe that the esprit de corps indicated by such a publication as this must inevitably contribute toward efficient operation of the branch."[1968] Curtis even touched on the work of the Personnel Division, noting that—while he "cussed" them frequently as Chief Chemical Engineer and occasionally "still cuss[ed] the outfit" as Director—"this I want to say: When history comes finally to evaluate the accomplishments of TVA, the job that the Personnel Division did in management-employee relationships will, I believe, be rated near the top of the list."[1969]

9.2.5 Other Qualities of Military Masculinity

As discussed in chapter 3, one can display qualities that associate one with military masculinity regardless of a direct material relationship with the military or war. In addition to his own relationship with the U.S. military throughout his adult life, Curtis exhibited qualities associated with military masculinity, such as his dedication to institutions or groups of which he was a member.

Curtis' dedication to institutional affiliations can be seen most readily in his membership in several fraternities and honorary societies and his lifelong commitment to his professional chemical fraternity in particular. As an undergraduate, Curtis appears to have been chiefly responsible for organizing a chapter of Alpha Chi Sigma, the national professional chemical fraternity, at his school.[1970] In 1908, a few days before earning his

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[1968] Curtis.
[1969] Curtis.
[1970] Ekeley to Eta Chapter of Alpha Chi Sigma, April 15, 1940.

bachelor's degree from UCO, Curtis "became a charter member" of the Eta chapter of the fraternity.[1971] Curtis must have been heavily involved in the organization from the start because he served as its national vice president in 1912 to 1914, and then as its national president (titled the "Grand Master Alchemist") from 1914 to 1919.[1972] In these capacities, he installed a chapter of the fraternity at the University of California in 1913 and one at Standford in 1916.[1973] He was elected the fraternity's historian in 1919 and authored a book on its history, published in 1927.[1974] He contributed several articles to Alpha Chi Sigma's periodical, *The HEXAGON*, as late as 1943.[1975] He was credited as "one of the men who has had much to do with the flavor of the potent fraternal brew fermented by this organization."[1976] In May 1963, he received the John R. Kuebler Award, "presented for outstanding service to the Fraternity and outstanding service to the profession," but he passed away before its formal presentation that September.[1977] As Kuebler himself—the fraternity's Grand Recorder and editor of *The HEXAGON*—wrote in 1939, "when one thinks of Harry A. Curtis, one thinks of Alpha Chi Sigma."[1978]

[1971] Curtis, "Handwritten Autobiographical Account"; *Alpha Chi Sigma Sourcebook: A Repository of Fraternity Knowledge for Reference and Education*, Academic Year 2013-2014 Edition (Indianapolis, IN: Alpha Chi Sigma Fraternity, 2013), https://www.alphachisigma.org/document.doc?id=536; Curtis, "Vita Harry A. Curtis"; Ekeley to Eta Chapter of Alpha Chi Sigma, April 15, 1940.
[1972] *Alpha Chi Sigma Sourcebook*, 28; Curtis, "Vita Harry A. Curtis"; Curtis, "Handwritten Autobiographical Account," 65.
[1973] Curtis, "Handwritten Autobiographical Account," 65.
[1974] *Alpha Chi Sigma Sourcebook*, 25, 93. Curtis confirms but recalls different dates for its publication (1926 or 1928). See Curtis, "Handwritten Autobiographical Account," 65; Curtis, "Vita Harry A. Curtis."
[1975] Harry A. Curtis, "Alchemy," ed. John R. Kuebler, *The HEXAGON* 33, no. 8 (May 1943), reprinted in *Alpha Chi Sigma Sourcebook*, 75–78.
[1976] "Alchemy", reprinted in *Alpha Chi Sigma Sourcebook*, 75–78.
[1977] *Alpha Chi Sigma Sourcebook*, 56–57; "Cancer Fatal to Crusader."
[1978] "Paracelsus," ed. John R. Kuebler, *The HEXAGON* 30, no. 2 (November 1939), reprinted in *Alpha Chi Sigma Sourcebook*, 93–95.

As an undergraduate, Curtis also joined the school's chapter of the social fraternity Sigma Nu and was president (or "Commander") of the chapter in 1907-1908.[1979] Around 1919, Edythe Taylor recalled, Curtis started working with Dr. D. S. Hamilton to collect the Gamma Kappa Alumni Fund, which was used to purchase the lot for construction of the chapter's house in Boulder.[1980] During his time in college, Curtis was also elected to the honorary scientific society Sigma XI and the honorary engineering fraternity Tau Beta Pi.[1981]

9.3 Examples

Having inspected several ways in which Curtis tailored a masculinity that was associated with several masculine archetypes, I now move on to inspect the case studies that show multiple masculinities influencing situations simultaneously. These occur at the start of Curtis' career with the TVA, with his recruitment to and early orientation in the Agency, and at the end of his career there, with his opposition to Chairman Vogel while on the TVA Board. These were moments of conflict on an individual level, and, notably, moments of conflict on the institutional level of the Agency. Observing Curtis' actions and interpretations through the lens of multiple masculinities, the degree to which contrasting masculine traits work in tandem is particularly notable. Rather than a collection of traits in tension, these studies show a cohesive masculine bloc.[1982]

[1979] Curtis, "Handwritten Autobiographical Account," 35; Taylor, "Edythe Helen Taylor Scrapbook"; "Welcome to Sigma Nu Boulder," Sigma Nu Boulder, 2019, https://www.sigmanuboulder.com.
[1980] Taylor, "Edythe Helen Taylor Scrapbook," 10.
[1981] Curtis, "Vita Harry A. Curtis"; Curtis, "Handwritten Autobiographical Account," 41.
[1982] Demetrakis Z Demetriou, "Connell's Concept of Hegemonic Masculinity: A Critique," *Theory and Society* 30, no. 3 (2001): 337–61.

9.3.1 The Recruitment of Curtis to the TVA, 1933

One can see the multiple masculine archetypes with which Curtis was associated interacting in specific moments or eras of his life. For example, multiple masculinities appear to have influenced Harry Curtis' decision to join the TVA in 1933.

The simple story is that A. E. Morgan approached Curtis in summer 1933 to offer him the position of Chief Chemical Engineer at the TVA, and Curtis turned him down. In the late summer of that year, H. A. Morgan approached Curtis to convince him to take the position, and Curtis accepted. The issue at hand is why Curtis accepted the position that he had earlier declined, and how certain masculine archetypes were reflected in the process.

Curtis writes about the experience more than once in his autobiographical account. He first writes about it in a portion that he penned in the 1940s or 1950s, and he revisits it in the portion that he started writing in 1961. Curtis held an interesting and likely well-compensated job as director of research at the Vacuum Oil Company in Paulsboro, New Jersey, and he implies in the c. 1950s account that this was why he declined the initial offer by A. E. Morgan. By the time H. A. Morgan approached him, Curtis writes, "my research job with Vacuum Oil had gone sour because of a merger of Vacuum Oil and the Standard Oil of New York, and I was curious as to what Dr. H. A. Morgan had in mind."[1983] If this was the case, Curtis relied on values of physical masculinity in his decision. First, he was not concerned with income when A. E. Morgan approached him; however, having lost the guarantee of a secure income by the time H. A. Morgan came around, Curtis considered the job. This correlates to a concern with material gain, or "bread and butter concerns"

[1983] Curtis, "Handwritten Autobiographical Account," 167–68.

exhibited by physical masculinity. In this light, his "curious[ity]" about H. A. Morgan's thoughts may well have focused on possible compensation and job security than anything else.

Correspondence between Curtis and his friend Dr. Livingston Farrand, President of Cornell University, confirms that Curtis knew by August 1933 that his position with the Vacuum Oil Company would not last.[1984] He was already looking for another position by then; however, income was not his only concern. On August 7, Curtis explained to Farrand that the merger had resulted in cuts to his R&D department. Those now in charge, Curtis wrote, were "unwilling to spend any large sums in this direction…and unwilling to pay the salaries necessary to hold first class research men."[1985] As a result, he had resigned, with an end date of September 1, "and the company is treating me rather generously in the matter of an extension of salary beyond the date I leave."[1986] In this letter, Curtis consciously avoids appearing desperate by mentioning this generosity as well as the fact that "I have been offered an industrial position and shall no doubt be able to locate again in industry if I care to do so." He was writing Farrand because he did not, in fact, want to work in industry:

> I…would prefer to return to a university environment. I have, however, rather run the gamut of professional jobs, ending with the chairmanship of the chemical engineering department at Yale. I think, possibly presumptuously, that I am now

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[1984] Harry A. Curtis to Dr. Livingston Farrand, August 7, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Livingston Farrand to Harry A. Curtis, September 29, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections; Harry A. Curtis to Dr. Livingston Farrand, November 4, 1933, Box 2, folder 1; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[1985] Curtis to Farrand, August 7, 1933.
[1986] Curtis to Farrand.

> qualified to serve as dean in a technical school or as president of one of the smaller universities.[1987]

Did Farrand know of any pending vacancies of that sort, Curtis wondered? Though income is a factor in the situation Curtis presents to Farrand, Curtis diminishes it, assuring his friend that he can find a paying job. Drawing on the values of white-collar masculinity, Curtis emphasizes the desire for a fulfilling job—more specifically, a fulfilling job in academia. At the same time, his "possibly presumptuous" ambition and self-promotion drew on a culture of physical masculinity that the classic white-collar masculine archetype would eschew (trusting that one's merits would be self-evident and scientifically assessed).

Further, Curtis' 1961 account claims that his job at the Vacuum Oil Company had already gone "sour," and he was already seeking out "other connections" for a new job, when he was approached by A. E. Morgan and turned down the position.[1988] If this is the case, it confirms that he had reasons other than the loss of his job to accept H. A. Morgan's offer when he had rejected A. E. Morgan's. It does make sense that the TVA job would have grown more appealing with time as other avenues closed to him or were rejected by him. It would have appealed to his white-collar masculinity as he rejected less interesting positions, and surely to his desire for income associated with his physical masculinity (not least because of the economic context in which he sought a position—"it is not a very promising time at present," as Farrand replied to his August 7 inquiry).[1989] The explanation that Curtis offers in his 1961 account, however, is far more personal: "[A. E.] Morgan

[1987] Curtis to Farrand.
[1988] Curtis, "Handwritten Autobiographical Account," 233.
[1989] Farrand to Curtis, September 29, 1933.

offered me a job but I did not like the man and he was very vague as to what he wanted me to do in TVA."[1990]

Curtis does not detail here what, specifically, he disliked about A. E. Morgan; however, his account of meeting H. A. Morgan offers some insight:

> This Morgan…was quite a different man and one I liked immediately. He had a great vision of what the TVA might do for southern agriculture and, specifically, the TVA had inherited the U.S. nitrate plants at Wilson Dam which might fit into the agricultural program. The TVA needed a chemical engineer who would take the nitrate plants in hand and who would set up a research program on fertilizers. Would I join Dr. H. A. in trying to realize his dream of a vastly improved agricultural situation in the Tennessee Valley? The man, his vision, and his enthusiasm attracted me and when a formal offer from the TVA came along a few days later I accepted.[1991]

The nature of this account is reflected in part of an obituary for Curtis that chronicled this moment, based on an earlier retelling by Curtis. It claimed that the two men "'chewed the rag' all day and, at the end, Dr. Curtis decided he'd join in the 'great new adventure' of TVA."[1992] Even an account of the meeting from H. A. Morgan's point of view, though humorously different, suggests a similar appeal to enthusiasm. Robert Sessions included a retelling of it in his 1957 speech in honor of Curtis:

> I remember Dr. Harcourt Morgan recounting the two hours in which he spent describing the nature of the great challenge to which he himself had responded, trying to persuade Dr. Curtis to come and join this enterprise. Dr. H. A. Morgan remarked to me that Dr. Curtis sat there with his head at an angle, smoking a cigar, and never saying a word. And finally Dr. Morgan couldn't stand it any longer and he said, 'Well, what have you decided?' Dr. Curtis replied, 'Well, I've decided two things; first, I haven't understood three-fourths of what you said; but, if it's one-half as good as that fourth part I did understand, I'm your man.'[1993]

[1990] Curtis, "Handwritten Autobiographical Account," 233.
[1991] Curtis, 233–34.
[1992] "Cancer Fatal to Crusader."
[1993] Sessions, "Dinner Meeting in Honor of Dr. H. A. Curtis."

Curtis, then, may not have appeared as enthusiastic as he claims to have felt, but the witty line attributed to him confirms that he found something in the pitch that was *very* "good."

All three brief accounts of the first meeting between Curtis and H. A. Morgan provide perspective on the masculinities involved in this recruitment. First, the two accounts sourced from Curtis are rich in imagery associated with frontier masculinity. The concept of H. A. Morgan's "great vision" invokes a frontier, breaking new ground in something that had not yet been done.[1994] It would be an "adventure," Curtis recalled feeling, to join in.[1995] Further, the place was a geographical and sociopolitical frontier. Curtis already knew that the agricultural South, and especially the Tennessee Valley, was an underdeveloped region, and (by accepting H. A. Morgan's proposal he showed that) he clearly agreed that it would benefit from outside expertise coming in and helping it develop. That this was a frontier already known to him probably matters little; in fact, it may have helped, as he felt a fondness for his time and pastimes in the rural South.[1996] That the project benefitted farmers probably added to its frontier masculine appeal.

All three accounts indicate values and personality traits that are often associated with physical masculinity. It was his personal 'gut response' to H. A. Morgan as a man that strongly appealed to Curtis. Beyond his status at the time (which A. E. Morgan also held) or the details of the TVA project, Curtis "liked" the man "immediately," as would an archetype of physical masculinity, associated with both the legacy of passionate masculinity (following one's gut response or animal nature) and a blue-collar disinterest in

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[1994] Curtis, "Handwritten Autobiographical Account," 233.
[1995] "Cancer Fatal to Crusader."
[1996] Curtis, "Handwritten Autobiographical Account," 115, 118; Curtis to Daughton, October 17, 1923.

status. Presenting the scene as if the two of them were from any class, simply chatting on a front porch, Curtis claimed that they "chewed the rag" for some time, using a folksy colloquialism to emphasize the nature of it (and of their personalities, perhaps). Even if H. A. Morgan's recollection of a one-sided conversation is more accurate, something in the nature of his spiel seems to have appealed to Curtis, likely in a warm, approachable way that resembled "chewing the rag." (Additionally, Curtis' sitting in intimidating silence, smoking a cigar in this narrative may alone be considered a vision of dominance valued by physical masculinity.)

Also important here is the physical masculinity seen in H. A. Morgan and his pitch (alone, regardless of Curtis), for this was a major thing that appealed to Curtis. Curtis noted H. A. Morgan's "enthusiasm" and ambition—a vision of something "great" and "vast"—and the use of the word "enterprise" (perhaps unwittingly) likens him to an entrepreneur. It is interesting to note that TVA historiography often presents A. E. Morgan as the board member with the 'great vision' for the Tennessee Valley as an all-encompassing socioeconomic experiment. H. A. Morgan and Lilienthal, by contrast, worked to rein in A. E.'s vision (in this interpretation), replacing it with more modest (and, one may claim, more realistic) visions and projects. The perspective changes if one focuses on agricultural reform alone, however, and Curtis seems to have done just that. Through such a lens, H. A. Morgan—the entomologist with strong ties to southern farmers, and who eventually took on TVA's agricultural operations when the board divided powers—likely offered the grander and more 'fleshed out' vision, while A. E. Morgan was relatively less involved in such matters and considered them one part of a multi-prong attack on the Valley's woes.

H. A. Morgan, from his own account, appears to have had the confidence to talk to an intimidatingly unresponsive man for two hours before demanding Curtis' decision in nearly as confident a fashion. Both sides present the pitch as a need for a certain kind of man, one who could "take" the old plants 'by the horns,' as it were, and respond to a "great challenge." Curtis' reported response, the punchline of Sessions' retelling, presents a man unwilling to put on airs by pretending to understand something ("three-fourths," in fact) that he does not—but, at the same time, a man confident enough to say with cowboy-like swagger, "I'm your man."

This was no conversation between two pure archetypes of physical masculinity or frontier masculinity, however. Though it was presented in terms that appealed to Curtis' sense of adventure and love of challenges, and though it was sold to him through an enthusiastic and informal conversation, this was a proposed program for applied research. At its heart, then, the proposal appealed to Curtis' white-collar masculinity at least as much as his other masculinities. One must remember that he was seeking academic employment at the time, uninterested in some run-of-the-mill work in private industry. This job description likely appealed to his intellectual curiosity and his dedication to service, both of which are at the heart of white-collar masculinity.

If A. E. Morgan had been "vague as to what he wanted me to do," he likely failed to capture Curtis' interest in the possible intellectual pursuits of the project. The job may even have sounded like an intellectual dead-end, reminiscent of his recruitment to develop the ICPC's research lab only to be transferred to save its failure of a plant in South Clinchfield. H. A. Morgan, however, presented a specific project that was bound to pique Curtis' interest. One can imagine Curtis' mind immediately exploring the options for the

two former nitrate plants, assigned the goals of using them to "set up a research program on fertilizers" and "improve…[the] agricultural situation in the Tennessee Valley." This was not any adventure, but a highly technical one demanding the expertise of a well-educated and experienced chemical engineer. That Curtis was said to admit that he didn't understand three-fourths of it may indicate that he was aware he had a great deal to learn.

If the intellectual appeal to white-collar masculinity were not enough, the proposal also appealed to the magnanimity present in this masculine archetype. This was not pure research, something to satisfy a man's curiosity with the hopes of eventual application. This was the discovery of new knowledge (through chemistry and engineering) and its immediate application to help those in need. Curtis claims that he often considered career moves to "the jobs that interested me and that seemed to offer the best oportunity [sic] for a worthwhile contribution."[1997]

9.3.2 Curtis and the 1930s TVA Board Feud

Once he joined the TVA, Curtis' opinions of each Morgan appears to have remained unchanged, and they likely contributed to his presentation of the TVA Board members and their protracted feud. Multiple masculinities are found in his account of this situation, as well.

Curtis claims in his autobiographical manuscript that he disliked A. E. Morgan from the start; however, he fails to elaborate much on his reasoning until his narrative actually reaches the TVA and incorporates details that he may only have learned while working

[1997] Harry A. Curtis, qtd. in "Dr. Harry A. Curtis Dies Here At 79."

there. His 1961 account exposes not only Curtis' opinions of an individual, but of engineering as a whole and what makes an engineer. "Dr. A. E. Morgan…was not a college graduate (the Dr. was an honorary degree) but had become well-known as an engineer, or rather as a manager of engineering projects," Curtis writes, adding, "He had eventually organized his own engineering firm--the Morgan Engineering Co.--which had done important flood control work in the Ohio Valley."[1998] In this account, Curtis circuitously denies A. E. Morgan's status as an engineer. The man had not even graduated from a college program—notable to Curtis because of the high value he placed on formal education—rather, A. E. was merely identified as an engineer. Not even that: A. E. was known as a *manager*, separated from the actual engineering work presumably done by real engineers. Curtis builds on that separation by mentioning the important work A. E. Morgan's *firm* had done; A. E. Morgan, after all, only organized it.

Curtis continues the account with a note on A. E. Morgan's status as a former college president. Curtis' initial description of H. A. Morgan immediately identifies him as a former president of UTK without comment, implying that this was an honorable and fitting measure of the man.[1999] By contrast, when Curtis mentions that A. E. Morgan had been president of Antioch College, he adds what could honestly count as a bit of gossip:

> I once asked Dr. A. E. how he came to be a college president. Morgan said that one day it occurred to him that he would like to be such. Since he was not a college graduate he know that no top notch college would offer him a presidency so he looked around until he found a little college where the presidency was going begging.[2000]

[1998] Curtis, "Handwritten Autobiographical Account," 235.
[1999] Curtis, 233.
[2000] Curtis, 235–36.

Curtis' descriptions of A. E. Morgan imply that A. E. did not back up his ambition with the integrity or work ethic that Curtis valued (evident in his descriptions of men in the military) and that A. E. Morgan was not fit for college presidency. It may be relevant here that Curtis had aspirations of becoming a college president at that time, actively seeking out the position around the time he met A. E. Morgan.[2001] Envy may have shaped Curtis' view of A. E. Morgan and whether he'd earned the status that Curtis felt he himself had earned.

Curtis' depiction of the power struggle between the three men on the Board of Directors reflects on ambition and independence, qualities for which he criticizes A. E. Morgan but praises H. A. Morgan and Lilienthal. Curtis explains that, named chairman, A. E. Morgan "assumed that he was 'it' and the other two directors would be only his advisers."[2002] A. E. occasionally acted unilaterally, making agreements with outside bodies, until H. A. Morgan and Lilienthal decided "to join forces and 'lay down the law' to Dr. A. E."[2003] Curtis empathizes with their doing so, "for neither Harcourt Morgan nor David Lilienthall [sic] would be content to be 'yes men', particularly in view of some of the exceedingly impractical ideas that Dr. A. E. held."[2004]

Curtis believed that A. E. Morgan wanted to help but not empower "Southern Appalachian mountain people"; he presents the chairman's vision as one of a purely outside power coming in and doing everything necessary to develop the region.[2005] Put in terms of multiple masculinities, the 'A. E. Morgan vision' that Curtis presents is so purely 'frontier

[2001] Curtis to Farrand, August 7, 1933.
[2002] Curtis, "Handwritten Autobiographical Account," 236.
[2003] Curtis, 238.
[2004] Curtis, 236.
[2005] Curtis, 237.

masculine' that it's downright colonial. It may even be too white-collar masculine (in its emphasis on expertise) or military masculine (in its devotion to hierarchy and expectation that locals fall in line) for Curtis' taste. What A. E. Morgan lacked, then, in Curtis' eyes was an important element of physical masculinity: a flattened hierarchy, high regard for blue-collar locals and their thoughts and labor, and emphasis on the value of personal connections and networking (as one sees in the TVA's interaction with local institutions and the farmers involved in test demonstration farms).

On the other hand, Curtis agreed with H. A. Morgan's position in the dispute over TVA's relationship with local political and educational institutions. H. A. Morgan wished to have the TVA work with such local institutions and help them "to do better the jobs they were set up to do."[2006] Meanwhile, Curtis interpreted A. E. Morgan as declaring that "the TVA should go about the tasks specified in the Act without regard to the opinions and wishes of local people or local organizations."[2007]

Such comments put Curtis clearly on one side of a protracted debate over the benefits and downsides of the "grassroots" approach that H. A. Morgan and Lilienthal eventually led the TVA to take. The pro-'grassroots' camp often spoke of A. E. Morgan's vision of the TVA as an oppressive Federal "outside agency" in contrast to the wisdom of cooperation with existing local organizations. To those scholars who later criticize the TVA's 'grassroots' approach, however, the powerful local institutions with which the TVA collaborated represented the area's privileged population to the detriment of those less privileged. Nancy Grant, for example, writes that the 'grassroots' approach encouraged the

[2006] Curtis, 237.
[2007] Curtis, 237.

TVA to conform to the bias already systematized in local institutions, and even to amplify that bias in the name of gaining the approval of the region's white majorities.[2008] The position of Curtis and his camp, then, cast the white farmer as the Everyman and the wealthier institutions as the true representatives of the local population.

Curtis describes the few board meetings he attended as "violent discussions…and I must say that although my sympathies were with Dr. H. A. the attitude of Dr. H. A. and Lilienthall [sic] toward Dr. A. E. was not what I would call conciliatory."[2009] Curtis adds, "Perhaps the time for seeking agreement had passed." [2010]

9.3.3 Curtis vs. Vogel

Another point in Curtis' life that one could usefully analyze through the lens of multiple masculinities arrived roughly 20 years later, when Curtis was himself a member of the TVA Board. Curtis served on the TVA Board from 1949 to 1957 and therefore oversaw the TVA through the major political upheaval of 1953 and its aftermath. When Eisenhower appointed General Herbert Vogel to the TVA Board in 1954, Curtis and his fellow Board member Bill Paty strongly opposed him and the Dixon-Yates plan conceived by the Eisenhower administration.[2011] Curtis in particular butted heads with Vogel, especially during discussion over what would be widely known as the Dixon-Yates controversy, scandal, or simply "the abortive Dixon-Yates contract."[2012]

[2008] Nancy L. Grant, *TVA and Black Americans: Planning for the Status Quo* (Philadelphia: Temple University Press, 1990).
[2009] Curtis, "Handwritten Autobiographical Account," 239.
[2010] Curtis, 239.
[2011] Hargrove, *Prisoners of Myth*, 142–43.
[2012] "Cancer Fatal to Crusader."

According to Erwin Hargrove, Curtis and Paty told staff members to present their views rather than Vogel's in Congressional testimony during the Dixon-Yates controversy, but neither "thought themselves articulate enough to press the case themselves."[2013] This conclusion seems fairly uncharacteristic of Curtis, and Hargrove apparently came to it based on correspondence from Joseph Swidler and Gabriel Wessenauer to him.[2014] It may simply have been that Curtis did not specialize in electricity production and felt it better to work through the engineers and managers more working more intimately with this side of TVA. Regardless, a proxy war seems to have developed, as Roland Kampmeier recalled of being "in the middle"[2015]:

> I had General Vogel telling me on the one hand: 'Get this thing [the Dixon-Yates initiative] worked out and get it worked out fast,' and I had the other two members of the TVA Board, Harry Curtis and Bill Paty, saying the opposite: 'Don't do anything that doesn't make sense, and tell us if you're being pushed into doing something that doesn't make sense.' So this was a very painful period in TVA and my work with TVA.[2016]

Kampmeier recalled that this tug-of-war only worsened with the death of Paty:

> The days were going by and the weeks were going by and Vogel [was] . . . pushing for getting these things done and Curtis, in particular, was digging in his heels more and more against anything and it was somewhere along right here that Bill Paty dies. I've forgotten the timing, but anyway it was Vogel and Curtis, and we didn't have a third man on the Board for a while. So this 2-man Board could only decide something by agreeing on [it] . . . . And this was one thing that they didn't agree on. So it was a kind of an unpleasant situation.[2017]

[2013] Hargrove, *Prisoners of Myth*, 143.
[2014] Hargrove, 143.
[2015] Roland A. Kampmeier, interview by Mark Winter, February 15, 1983, 59, Box 6, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[2016] Kampmeier, 59–60.
[2017] Bracketed additions and ellipses in the original. Kampmeier, 61.

The Dixon-Yates scheme petered out in 1955. In July, 1955, John Carmody wrote a personal note to thank Curtis for his stance in the Dixon-Yates controversy. He expressed awareness that "Your position has been neither easy nor comfortable; no official relished finding himself in opposition to the President even when the President is so clearly wrong as he has been throughout these negotiations."[2018] In his response to Carmody, Curtis thanked him and explained,

> As you have surmised, the past year has not been a comfortable one for me. I hoped, had Mr. Clapp been reappointed, to spend my remaining period with the TVA in peaceful, constructive work. Instead, every day has brought new difficulties. Within TVA, my staunch colleague, Dr. Paty, and I have been able to hold the line, and sometimes rather brutal methods were necessary. Against attacks from without, we have had to move somewhat cautiously and to rely more on friends of the TVA.[2019]

Curtis uses martial language here, a marker of military masculinity. Later, when reflecting on "all the rows that erupted in the Board, usually between the General and myself," Curtis used analogies of physical fights & boxing. "Before the scrap was over the General became a very frustrated man and complained..." Curtis wrote, "He finally was forced to wait impatiently for the day when my term on the Board would end"[2020] Vogel eventually focused on "the construction of new locks and engineering projects and let Harry Curtis run the agriculture and fertilizer programs," similar to the division of labor of the first TVA Board.[2021]

[2018] John Carmody to Harry A. Curtis, July 18, 1955, Box 7, folder 4; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[2019] Harry A. Curtis to Mr. John M. Carmody, July 27, 1955, Box 7, folder 4; Harry Curtis Collection, MS.0323., University of Tennessee Libraries, Knoxville, Special Collections.
[2020] Curtis, "Handwritten Autobiographical Account," 274.
[2021] Hargrove, *Prisoners of Myth*, 147.

The dispute over the Dixon-Yates plan was not the only struggle that the TVA faced in the 1950s. Leland Allbaugh recalls accompanying TVA Board members to Washington, D.C. for Congressional hearings for "perhaps a half dozen years…particularly during this period when the National Fertilizer Association was fighting us."[2022] In this recollection, he appreciated Curtis' outspoken nature. "I never had to do much testifying, though," he recalls, "As long as Curtis was on the Board, he put in what was needed for agricultural programs. Then they brought in Frank Welch, who was Dean of Agriculture at Kentucky, and not a strong person."[2023] This contrast between Curtis and another higher-up [not his direct successor] who was "not…strong" shows that Allbaugh also thought in terms of physical fights and defense.

Curtis appears to have only grown more outspoken about changes to the TVA and its political situation as he neared his 1957 retirement. "A few weeks before ending his nine-year term on the TVA board…" a local obituary of Curtis reported, "he told a Chattanooga audience in a swan-song speech called 'Unfinished Business': 'If you like the kind of misnamed creeping socialism that you and the TVA are promoting here, let's have more of it.'"[2024] Around this time, Curtis reportedly "cut loose. He accused the Eisenhower Administration of having an 'unfriendly attitude' toward TVA. He said, too, that there would be 'hell to pay internally and externally,' unless his successor on the board was a 'sturdily independent man.'"[2025]

[2022] Burbage, interview, 26.
[2023] Burbage, 26-"26 cont'd".
[2024] "Cancer Fatal to Crusader."
[2025] "Cancer Fatal to Crusader."

Some years into his retirement, the obituary reported, “Dr. Curtis' fears about TVA's future subsided. He told an interviewer three years after his retirement that he thought both Gen. Vogel and Mr. Jones were then doing a top job for TVA."[2026] Vogel seems to have softened, too, as he learned more about the merits of the TVA.[2027] Curtis recalled of Vogel in his autobiographical manuscript, using one last analogy to physical conflict, “he evidently forgave me for much of the knock-downs I gave him.”[2028]

9.4 Conclusion

Curtis identified with popular frontier imagery and values from childhood onward. He advertised having been born and raised in a log cabin, and he consciously depicted frontier life, even drawing on his family’s lifestyle before his birth to do so. Throughout his life, and not least as a chemical engineer, Curtis identified with white farmers and rural residents. In his career, he spent time prospecting in phosphate fields for the mineral to whose development he would devote a large portion of his career. In his free time, Curtis pursued and promoted outdoor recreation, including hiking, camping; he also rode horses, hunted, and gardened. Performing the explorer, Curtis traveled widely for work and pleasure, and he pushed symbolic frontiers in professional life and service. Occasionally pointing to the values with which he was raised on the frontier, he promoted an ethic of self-sufficiency and independence, materially and intellectually. He also voiced criticism of bureaucracy and hierarchy despite spending most of his career in administration.

[2026] “Cancer Fatal to Crusader.”
[2027] Hargrove, *Prisoners of Myth*.
[2028] Curtis, “Handwritten Autobiographical Account,” 275.

Curtis was a member of the U.S. military during WWI, and he believed his experience influenced his critical attitude of the military and several individuals in it throughout his adult life. His chemical engineering work was linked to national defense, and he consciously communicated that. Despite an aversion to subservience to a professional institution, Curtis was very dedicated to his social fraternity throughout his life.

In the closing examples, multiple masculinities appeared to function in collaboration or as a cohesive bloc during Curtis' account of being recruited to the TVA in 1933; in his perspectives on the first TVA Board and its interpersonal feud; and through his relationship with Gen. Vogel while on the TVA Board in the 1950s.

CHAPTER 10. CONCLUSION

It is helpful to model a masculine archetype and inspect the processes by which men perform it and link it to certain privileges, but that only gets us so far. If limiting our scope to a single hegemonic masculinity in a given context, however much we complicate it, we only see the ways in which men live up to (and fail to live up to) that one masculinity. In such an account, the man who performs traits of other masculinities diminishes his masculine power—and yet we see that this is not the case. By modeling multiple, distinctly identifiable masculinities and witnessing the same group of men perform each, we see that such intersectionality can amplify a group's power and increase its capacity for boundary-setting.

A multiplicity of white masculinities existed at the TVA in 1933 to 1953, and they were performed by individuals, departments, and the institution. The repetition of similar performances over time, especially by engineers and those with whom they worked, allows one to discuss a 'TVA engineer' identity that drew on multiple masculinities. These performances also resembled larger trends in masculinities at the time, as discussed in chapters 1 and 2. This included trends among white American men nationwide, trends within the U.S. engineering profession, and, to some degree, regional trends. To what *extent* performances within the TVA resembled or differed from those outside of the Agency, and whether and how each group's identity influenced or absorbed the other's, are beyond the scope of this dissertation. Regardless, we see "cousin resemblances" between

white masculinities that operated on multiple levels, as theorized by Connell and Messerschmidt.[2029]

We also see that not all white masculinities, and not all traits within certain white masculinities, were equally favored by TVA engineers. Military masculinity, for example, did not appear as popular as the other masculinities analyzed here: military imagery and subservience to a hierarchy were at times both interpreted negatively or at least unenthusiastically. Individuals and institutional spokesmen also avoided and communicated a separation from the physical masculine performance of violence or direct/explicit racism.

We note that these performances seem to have been notably consistent across time. We see, for example, that the young Harry A. Curtis who walked into his college president's office to offer advice held similarly confident and assertive traits to the senior TVA Board member who told his Chairman "where to get off in good engineering language."[2030] We similarly see the Agency's institutional identity highly value the ideal of working hard and strongly dislike the image of bureaucracy from the early 1930s onward, to the point that interviewees in the 1980s were still candidly speaking out about both things (and, like Kampmeier, continuing to actively promote those druthers).[2031] There is a chance that this interpretation of consistency has been influenced by the nature of the

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[2029] R. W. Connell and James W. Messerschmidt, "Hegemonic Masculinity: Rethinking the Concept," *Gender & Society* 19, no. 6 (2005): 829–59.
[2030] Dr. Harry L. Case, interview by Mark Winter, April 5, 1983, 34–35, Box 2, folder 1; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[2031] Roland A. Kampmeier, interview by Mark Winter, February 15, 1983, Box 6, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).

dominant source materials, which were collected or written as reflections at specific points in time; however, I tried to use other sources to support or dispute the recollections when possible. Further, the work of other historians makes this interpretation reasonable. Nancy Grant shows a profound stability in TVA culture and policy over time, specifically through the lend of race relations, and Erwin Hargrove argues that consistency in TVA's institutional mythology was consciously cultivated and maintained.[2032] It is reasonable that the same would hold true for the identities of TVA engineers. It is also reasonable when one considers, as Wetherell and Edley explain, that a major feature of identity, as a procedure or performance, is its persistence across time.[2033]

As to how these performances of multiple white masculinities functioned, I believe that this is most accurately modeled by claiming that actors created a hybridized hegemonic bloc from the masculinities analyzed (and possibly more). As explained in the Introduction, Demetriou developed the "hegemonic masculine bloc" as an improvement on Connell's original theory of hegemonic masculinity. This "hybrid masculine bloc that is made up of both straight and gay, both black and white elements and practices" constantly appropriates traits from various masculinities "in order to construct the best possible strategy for the reproduction of patriarchy."[2034] Its hybridity and internal diversity are precisely what makes the bloc so robust and flexible. We see evidence of this throughout the dissertation, as actors express traits of multiple masculinities—sometimes even logically contradictory

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[2032] Nancy L. Grant, *TVA and Black Americans: Planning for the Status Quo* (Philadelphia: Temple University Press, 1990); Erwin C Hargrove, *Prisoners of Myth: The Leadership of the Tennessee Valley Authority, 1933-1990* (Princeton University Press, 1994).
[2033] Margaret Wetherell and Nigel Edley, "Negotiating Hegemonic Masculinity: Imaginary Positions and Psycho-Discursive Practices," *Feminism and Psychology*, 1999.
[2034] Demetrakis Z Demetriou, "Connell's Concept of Hegemonic Masculinity: A Critique," *Theory and Society* 30, no. 3 (2001): 348.

traits. Rather than this being interpreted as a contradiction or a weakness, as in Connell's model, it generally bolsters the masculinity of the actor.[2035] Within the TVA's hybrid bloc, consistent with Demetriou's model, there was some negotiation and disagreement. We see this, for example, in contradictory interpretations of an engineer's need for writing skills and in varying responses to traits valued in a manager.

This hybridization helped to obscure the strong association between engineering identity and white masculinity. As previous scholars have pointed out, whiteness and maleness already tend to be naturalized or considered neutral, and people unconsciously perform them and traits associated with them.[2036] It is possible, however, to consciously distinguish and denaturalize these traits and those associated with them. When hybridization occurs, however, and traits of other groups are co-opted into the hegemonic identity, the social boundaries between groups are obscured but not diminished. Rather, as Bridges and Pascoe write in "Hybrid Masculinities," "Through this process, systems of inequality are further entrenched and concealed in historically new ways, often along lines of race, gender, sexuality, and class."[2037] We see this in the dissertation, as employees naturalized certain traits, associated them with engineers unproblematically, and rarely noted an awareness of inequality or people who (could) engineer well despite living up to the approved masculine bloc.

[2035] given that he is in the 'in group.' This is discussed further below.
[2036] Michael Kimmel, "Human Beings: An Engendered Species," in *The Gendered Society* (New York: Oxford University Press, 2015), 1–17; David R. Roediger, *The Wages of Whiteness: Race and the Making of the American Working Class* (New York: Verso, 1991).
[2037] Tristan Bridges and C. J. Pascoe, "Hybrid Masculinities: New Directions in the Sociology of Men and Masculinities," *Sociology Compass* 8, no. 3 (2014): 254.

The hegemonic masculine bloc strengthened boundaries around what kind of person a TVA engineer was, or who was 'one of us.' Bridges and Pascoe point out that such hybridization offers greater flexibility to privileged groups while limiting less privileged groups to association with regressive or undesirable traits.[2038] Throughout the dissertation, those considered part of the 'in group' were measured additively by the traits they expressed that were associated with various white masculinities, and their failures to perform other lauded traits were overlooked. Observers offering judgement assumed or pointed out the ways in which they compensated for such limitations by performing other lauded traits. Those considered outsiders, on the other hand, were judged by the white masculine traits they failed to express.

In such a system, Harry Curtis was widely celebrated for his combative attitude and disrespect for authority—significant to physical and frontier masculinities—while J. Max Bond could fear ruining his career for the mere suggestion of such traits, which would have been assessed a failure to live up to the cooperative, passionless standards of white-collar masculinity. Multiple TVA administrators emphasized the importance of practical experience when seeking managers; however, most women and racial minorities were denied such employment, no matter how much relevant experience they amassed, because (for example) they lacked the academic credentials associated with white-collar masculinity. Instead of being praised for working his way up without much formal education (a positive in physical masculinity) and having an idealistic vision for the Valley (a positive in white-collar masculinity), A. E. Morgan often found himself criticized, not

[2038] Bridges and Pascoe, "Hybrid Masculinities."

least by Harry Curtis, for his lack of education (a failing to one's white-collar masculinity) and his lack of practicality (a failing to one's physical masculinity).

By the same token, even 'in group' members who consciously distanced themselves from one hegemonic trait were almost inevitably fulfilling another hegemonic trait in the process. This process is described by Wetherell and Edley, who analyzed a series of interviews with men about their masculinity to find that even those who positioned themselves as 'normal' or 'rebellious' continued to "trade… upon the hegemonic values of autonomy and independence."[2039] The theory of Wetherell and Edley, however, is rooted in Connell's concept of a single hegemonic masculinity. By using a model of a hegemonic bloc comprising multiple white masculinities, we can understand this process and its fated nature even more clearly. We see those in the 'in group' distancing themselves from traits of one white masculinity within the bloc and being associated with traits of a different bloc masculinity in the process. In this way, Harry Curtis' loud disdain for the propriety and dispassion lauded in white-collar masculinity reflects on him positively as associations with frontier and physical masculinities.

Returning to the theme of luxury discussed in chapter 2, we can also note that 'in group' members could often afford to perform or avoid certain white masculine traits that others could not. We saw this occur one way, when TVA engineers and administrators performed white-collar masculine civility, magnanimity, and dedication to meritocracy while TVA labor supervisors enforced the Agency's stability in the region through physical violence and other inhumane treatment of Black workers. We saw this occur in another

[2039] Wetherell and Edley, "Negotiating Hegemonic Masculinity," 25.

way, as Kampmeier and Wessenauer aggressively promoted their department's interests without reproach while Owens was declared a "she-dragon" for doing something similar.[2040]

The whiteness and maleness of U.S. engineering has been tenacious in large part because it is so complicated. The robust, protean nature of the hegemonic bloc with which engineering identity is associated in institutions like TVA only emphasizes the enormity of the problem policy-makers, educators, and practicing engineers face in seeking to diversify it. As Bridges and Pascoe note, however, that same protean nature means that such hybrid blocs have enormous potential for further change. Understanding how white masculinities function "as a tool,"[2041] in various institutional and organizational contexts, is an important step in diminishing or dismantling adverse effects of such use.

[2040] Beverly Burbage, interview by Mark Winter, September 15, 1983, Box 1, folder 5; TVA Employee Series Tennessee Valley Authority Oral History Collection; Records of the Tennessee Valley Authority, Record Group 142, National Archives and Records Administration--Southeast Region (Atlanta).
[2041] Joan W. Scott, "Gender: A Useful Category of Historical Analysis," *The American Historical Review* 91, no. 5 (1986): 1053–75.

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Note that the *Oral History Collection* includes biographical sketches and other auxiliary documents, cited in the dissertation, alongside recordings and transcripts of oral interviews.

Oral Interviews

All oral history interviews cited in this dissertation are part of the Tennessee Valley Authority (TVA) Oral History Collection, in the TVA record group of the National Archives and Records Administration, Atlanta. All interviews cited were collected by interviewer Mark Winter, a records officer for the TVA, between 1981 and 1983 in various locations. This was part of TVA's oral history program that began in 1976. After each interview was recorded and transcribed, the original transcription was sent to the interviewee to edit and approve for release. The dissertation cites

only the approved transcriptions. Although I reviewed some initial transcriptions when available, I found no conflicts or retractions significant to my work.

Tennessee Valley Authority Oral History Collection. Records of the Tennessee Valley Authority. National Archives and Records Administration--Southeast Region, Atlanta, GA.

All interviews were conducted by Mark Winter.

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