Federal Science Funding in the America Recovery and Reinvestment Act of 2009: An Assessment of Two Policy Process Frameworks

A Thesis
Presented to
The Academic Faculty

by

Tamara E. Hutto

In Partial Fulfillment
of the Requirements for the Degree
Masters of Science in Public Policy in the
School of Public Policy

Georgia Institute of Technology
December 2011

Federal Science Funding in the America Recovery and Reinvestment Act of 2009: An Assessment of Two Policy Process Frameworks

Approved by:

Dr. John Walsh, Advisor
School of Public Policy
Georgia Institute of Technology

Dr. Gordon Kingsley
School of Public Policy
Georgia Institute of Technology

Dr. Richard Barke
School of Public Policy
Georgia Institute of Technology

Date Approved: November, 11, 2011

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LIST OF SYMBOLS AND ABBREVIATIONS

ARRA	American Recovery and Reinvestment Act of 2009
The stimulus bill	The ARRA before it was passed
MSF	The Multiple Streams Framework, by Kingdon
IAD	The Institutional Development and Analysis framework, by Ostrom
NSF	National Science Foundation
NIH	The National Institutes of Health
DOE	The U.S. Department of Energy

SUMMARY

In order to understand how policies are made, analysts need to be able to explain and describe the policy making process. This is a complex task due to the variety and complexity of policy making environments. The difficulty lies in accounting for the multiple actors who come and go, differing preferences, and impending problems and solutions sets which vary by policy environment.

Therefore, there is a need to approach the understanding of policy processes from several different theoretical perspectives to aid in evaluating the multifaceted variations which ultimately affect policy making. An improved description of processes can lead to more accurate predictions of possible future policies, improved advocacy efforts, and enhanced problem solving.

Two policy process frameworks, the Multiple Stream Framework (MSF) and the Institutional Analysis and Development (IAD) framework, were applied to a recent significant change in science policy. An understanding is developed to explain how federal science funding survived within the highly controversial and costly American Recovery and Reinvestment Act of 2009 (ARRA).

The volatile and unpredictable nature of science policy lends itself well to the MSF, while the more static IAD is less useful to explain how and why the funds stayed in the bill. This is telling about the scope and adaptability of the two frameworks, where each may be better suited for different policy environments. The MSF being more appropriate for unstable and capricious policy issues and the IAD better matched for policy issues which have a somewhat more stable environment.

CHAPTER 1

INTRODUCTION

Policy scholars are beginning to realize that in the multifarious world of policy making, a single theoretical perspective is not adequate to describe all the nuances of the policy making processes (Dunn 2009; Kingdon 1995; Ostrom 2005; Sabatier 2007). Therefore there is a need to approach policy processes from several different theoretical perspectives to allow an analyst to evaluate the complex variety of explicit and implicit structural arrangements and variables which affect policy making.

The complexity of policy making is due to several factors: actors can number in the hundreds; not all institutions and actors have the same preferences, goals, and interests; and actors and institutions face different problems and available solutions. In addition, policy making is a social process which is complicated by human cognition, cyclical changes,-as well as conflicts, cooperation, and competition between multiple actors who all attempt to influence the policy making process (Dunn, 2009).

The search for understanding policy processes is an exploration for causal linkages, testable hypotheses, and a means to combine and learn from knowledge derived across multi-disciplinary fields (Koonts, 2003). Once analysts start to empirically test multiple perspectives which incorporate "processes of selective search, of abstraction, and even intuition that characterize human problem solving activity… a relatively simple set of symbol-manipulating processes for carrying out means-end analysis" can be developed (Simon, 1966, p. 23). Using different perspectives to approach and explain policy processes can lead to more accurate predictions of possible future policies,

improve advocacy efforts for preferred policies, and possibly lead to better problem solving in policy domains (Simon 1966; Ostrom 2005; Sabatier 2007).

Application

This case study applies two policy process frameworks to explore how policy ideas adapt and survive in the form of appropriations in a congressional bill and subsequently become law in the U.S. Congress. More specifically, this study focuses on funds appropriated to federal science agencies in the American Recovery and Reinvestment Act of 2009 (ARRA).

The following frameworks are applied to the case study: The Multiple Streams Framework (MSF) developed by John Kingdon (1995) and the Institutional Analysis and Development (IAD) framework developed by Elinor Ostrom (2005). They will be assessed for their utility in explaining how S&T policy gets made.

The Case

On February 17, 2009 Congress passed the ARRA, a $787 billion emergency supplementary appropriations bill that is passed in response to a weakening U.S. economy. House Appropriations Chairman, David R. Obey, describes the bill as "simply the largest effort by any legislative body on the planet to try and take government action to prevent economic catastrophe" (Clarke, 2009b). The purpose of the bill is to restore consumer spending power and confidence in the U.S. economy, primarily through adopting policy ideas which will create jobs, aid those unemployed by the recession, and reduce taxes.

Before the passage of ARRA it was known as 'the stimulus bill' and its journey through Congress was high profile, controversial in speed, size, and scope, and turned

into a partisan battle which threaten passage of the bill every step of the way. The unusually large and somewhat unlimited budget and range of solutions being seriously considered attracted many issue communities to mobilize in and around Congress during late 2008, and early 2009, with the goal to receive favorable language and appropriations in the bill.

The appropriations of interest for this case study are the $2.9 billion appropriated to the National Science Foundation (NSF), the $10.4 billion for the National Institutes of Health (NIH), and the $2.4 billion for the Department of Energy (DOE). Congress splits these funds to be spent on basic and applied research and development (R&D), and for the construction and modernization of R&D facilities and equipment (The American Association for the Advancement of Science, 2009). The inclusion of these funds in the stimulus bill were initially somewhat of a surprise to the S&T community. The MSF and IAD are used to explain how these anomalies therefore survive in the bill.

Data Collection

From January to April 2009, qualitative data was collected in Washington, D.C. during a legislative internship with the Georgia Institute of Technology's Office of Federal Relations. My role as an intern was to take notes and observe day-to-day policy processes rather than actively advocating for particular policies. This paper is based on my own participant observations which allow me to be familiar with a variety of different processes and participants who were active in D.C. at the time, all working towards a similar goal: increasing federal funds for federal science agencies.

Data was generated from: 14 formal interviews, informal conversations, notes taken at congressional hearings, interest group meetings in D.C., daily events related to

my internship, frequent emails from a variety of sources including a political consulting firm, lobbying circles, congressional constituency newsletters, and list serves from scientific and academic membership organizations, everyday personal observations, later reflections at the end of each day, and news articles which were read daily from political newspapers, particularly the *Congressional Quarterly*.

During my internship experience, I witness lobbying efforts and political maneuvers before, during, and after the ARRA's passage. I then developed a history and understanding about how S&T funding managed to survive in the ARRA.

Interviews, observations, and conversations were with a variety of actors involved with the stimulus bill in some capacity - political consultants, congressional staffers, and lobbyists and representatives from higher education and scientific communities. Data collection was intended to facilitate an understanding of the organization and structure of the S&T community and how they work within Congress.

Theories

There are a variety of policy process frameworks, theories, and models which set out to explain how and why polices are made. Besides the MSF and IAD, other prominent competing theories include the Stages Heuristic, the Punctuated-Equilibrium framework (Baumgartner & Jones, 1993), and the Advocacy Coalition Framework (Sabatier & Jenkins-Smith, 1998, 1993). The MSF and IAD are chosen for use in this paper for different reasons. The MSF allows for intuition, flexibility and a variety of influencing variables which work well for the data I collected and witnessed firsthand. Also, past studies apply the MSF to understand the U.S. legislative policy making process, similar to the goal of this paper. The IAD is chosen for its efforts to

compartmentalize exogenous variables and separate them from the action situation in order to simplify and observe patterns to policy making processes. The vocabulary Ostrom developed is also of particular interest for use in describing my observations.

Multiple Streams Framework

First described by John Kingdon in 1984, the MSF is intended to organize information and events to reveal patterns of pre-decision processes resulting in agenda setting, selection of policy ideas, and predicting chances for policy adoption. Essentially, Kingdon explains, "the patterns of public policy, after all, are determined not only by… final decisions as votes in legislatures… but also by the fact that some subjects and proposals emerge in the first place and others are never seriously considered" (1995, p. 2).

The MSF is therefore concerned with how policy ideas are narrowed down from many, to a particular few. Also, Kingdon is not focused on "where ideas come from, but what makes them catch on and survive in certain communities and certain times" (Kingdon, 1995, p. 226). The MSF is more about the chance an actor finds to gain favorable policy change (a policy window), rather than the conflicts between coalitions or changing fundamental policy values and venues. Kingdon suggests that while important, these elements are not always mandatory for high chances of policy idea adoption.

Over the past several years, the MSF is being increasingly used to describe a variety of policy sectors. Most recently it has been used for examining factors that put issues, such as childhood obesity, on legislative agendas, and later making their way into law (Craig, Felix, Walker, & Phillips, 2010). It has been used todiscover how problems are identified, prioritized, and attached to policy solutions within the Canadian

government (Henstra, 2010), assess executive military policy-making and how it changes (Ellington, 2011), explore how windows of opportunities work in the case of Australian cannabis reform (Ritter & Bammer, 2010), and examine the role of participant influence in policy making for the U.S. Fish and Wildlife Service (Rinfret,2011).

The MSF is both a macro and micro level approach that does not confine policy making to starting from one source or level. It does not require the policy process to follow a particular sequence to policy adoption. It describes policy making as coming from a variety of different sources and different actors, which change over time.

The main unique aspects of the MSF are the three general categories of processes or "streams" which contribute to agenda setting and the adoption of policy ideas: (1) The *problem stream* which includes data, definitions, and events, (2) the *policy stream* which contains all types of feasible ideas which are ready for implementation, and (3) the *political stream* which is made up of administrative or legislative changeovers, the national mood, and pressures on decision makers from advocacy groups.

One can think of these streams as "highly fluid and loosely coupled … [seeming] to flow through and around the federal government largely independent of one another, and big policy changes occur when the streams join" (Kingston, 1995, p. xiii). Observing the joining of the steams may be the most important part of the MSF. Kingdon suggests this is because the most successful actors in the policy making process are the actors that notice changes in the policy environment and mobilize to take appropriate action quickly. Once all three streams merge, a policy window will open allowing for policy change. This requires actors to "… be prepared, their pet proposal ready, their special problem well documented, lest the opportunity pass them by" (Kingdon, 1995, p 165).

The foundation of this framework adopts the Garbage Can Model (GCM) of organizational choice and it's the three main assumptions (Cohen, March, & Olsen, 1972). These assumptions are: (1) actors have unclear preferences and goals; (2) no one completely knows how institutions work, and (3) various actors within and around government come and go from one decision to the next.

Policy makers "attend to different characteristics of the same situation each time", allowing for actors to assess the current streams and make decisions about strategy and communications. Their preferences, interpretations, and assumptions of the policy environment influence them to either act or hold off for a better coupling of the streams (Sabatier, 2007, p. 301). This search for and assessment of 'perfect timing' does not appear in the other policy process concepts.

A big misconception about the MSF is that it suggests policy making happens randomly. Kingdon explains while some ideas are seemingly adopted randomly, there is actually an underlying pattern and structure within each stream. Also Kingdon asserts all issues do not have an equal chance of adoption, so total randomness is not what he describes.

The probability of policy adoption is high if actors are armed with a valid problem and solution (problem stream), the right political environment and national mood (political stream), and the right piece of legislation (policy stream), according to the MSF.

Institutional Analysis and Development

Elinor Ostrom (2005) developed a systems approach for understanding how institutions and actors make policies. She explains institutions can be thought of as rules

which “humans use to organize all forms of repetitive and structured interactions…” (p. 3). In the Ostromian sense, policy making can be thought of as patterns of structured social interaction which result in the transformation of ideas into policy.

The Institutional Analysis and Development (IAD) framework set out to examine and describe elements in institutional diversity in a consistent, universal way in order to account for the range of interactions and processes which affect policy outcomes. The IAD asks questions such as “how many players are there, what moves can they make, what outcomes are available, what are the order of decisions, how do they value the moves and outcomes” (Ostrom, 2005, p. 6).

The IAD has two significant features. The first explains how decisions are made within different levels of decision making. The second feature describes foundational variables which are relevant to understanding outcomes across all policy making institutions (Ostrom 2007). The following case study will only focus on the second of these features.

The IAD is also increasingly used over the years by a variety of disciplines. Examples of recent research include: an analysis of Ostrom’s concept of grammatical syntax on two pieces of U.S. legislation (Basurto, Kingsley, McQueen, Smith, & Weible, 2010); an explanation of how institutional structures, such as rules and interaction affect the efficiency, usefulness, sustainability and outcomes of animal recording within the livestock industry (Wasike, Kahi, & Peters, 2011); a multilevel assessment of Vietnams natural resources policies (Clement,2010); a description of governance structures of service delivery within mixed economies and how power at different levels affects rule making (Bushouse, 2011); and how policy networks are able

to effectively influence rules that are being made within the policy domains of Maine lobster fisheries, international development assistance, and the involvement of faith-based organizations in U.S. welfare policy (McGinnis, 2011a).

The IAD "assigns all relevant explanatory factors and variables to categories and locates these categories within a foundational structure of logical relationships" (McGinnis, 2011b, p. 1). The underlying structure results in a "multitier conceptual map" used to explain how actors and past decisions affect subsequent decision making situations and their possible outcomes (Ostrom, 2005, p.14). This map allows an analyst to decide which assumptions to make about actors in order to predict broad patterns of outcomes.

The IAD is an "agent based model" and treats policy making equally (Ostrom, 2005, p. 7). It does not change the structure of policy making depending on where or what decisions are being made. Ostrom suggests all the same basic elements show up in all policy making processes because the underlying structure of decision making remains the same. Although Ostrom and past studies using the IAD focus mainly on common pool resources, implementation of rules, and the origins of institutions and polices, the IAD could prove useful as a tool to track, organize, and explain the policy making processes before decisions are made. It puts forth questions which otherwise may go unasked, and brings to light influencing variables, such as possible action-outcome linkages and cost and benefit calculations that are made among actors, which are questions not specifically asked in the MSF.

Ostrom admits that mapping out implicit elements which affect human behavior is difficult, "frequently, we are not even conscious of all the rules, norms, and strategies we

follow" (Ostrom, 2005, p.5). The IAD attempts to make this implicit knowledge explicit to policy practitioners because this knowledge directly "affect[s] incentives confronting individuals and their resultant behavior" (Ostrom, 2005, p. 9).

The IAD map starts with three basic elements which are: attributes of the biophysical world, rules related to the decision making situation of interest, and community characteristics. These elements make up the exogenous variables which reveal incentives going into an action situation.

The action situation is the social space where actors actually interact, exchange information, debate, dominate, and compete with each other. Therefore, it is the main unique, and most complicated, aspect of the IAD. Variables which are within the action situation are: actors, positions (denoting authority), potential outcomes, action-outcome linkages, control exercised, type of information generated, and costs and benefit calculations.

In addition to the three exogenous variables, and the categories within an action situation, the IAD outlines resulting generated interactions and their outcomes. These interactions and outcomes are then assessed by evaluative criteria. The feedback, linkages, and sequences of these elements are important because they affect each consequent variable and subsequent action situation.

The Analysis

Science funding in the ARRA is an interesting case. Not only is it unusual for S&T to be included in an economic stimulus bill, but the ARRA appropriated the biggest lump sum investment in the history of U.S. federal S&T funding. Despite past congressional consensus that investments in S&T are important, S&T usually doesn't

compete well with other national priorities for limited discretionary funds (Greenburg, 2001). Within an unexpected stimulus bill, the 20 year old policy idea that investments in S&T will strengthen the U.S. economy was finally adopted and funded in the form of appropriations within the ARRA (Slaughter & Rhodes, 1996).

The next chapter of this case study will examine the policy environment before the ARRA was introduced to Congress. It specifically examines the problem of the U.S. economy, past S&T policies which creates momentum for S&T inclusion, as well as the S&T community and their relationships with past administrations and Congress. This second chapter is especially important as it serves for building the structure, context, and incentives facing the S&T community affecting their decision to lobby for funds in the stimulus bill.

The third chapter describes how Congress usually operates. It examines how the policy environment changed for S&T given their somewhat unexpected inclusion in the House of Representatives first draft of the stimulus bill. The fourth chapter describes another change in the policy environment when the Senate's first draft was released. This event changed how the rest of the bill played out through the conference report and final passage. The chapter looks at how the community reacted to possible cuts to science funding, possible deletion from the bill, and their ultimate survival in the bill.

The last chapter concludes with how the S&T community will move forward, lessons learned, and assesses how well the two frameworks were able to aid in understanding the policy making process.

CHAPTER 2

POLICY ENVIRONMENT BEFORE ARRA'S INTRODUCTION IN CONGRESS

The Economy

The MSF discusses the importance of problem indicators, their magnitude, feedback, and focus events which put certain ideas in the running for serious consideration for policy adoption. The IAD also assumes aspects of the biophysical world, such as the state of the economy affect how decisions are made and which solutions are chosen.

There were numerous public and private indications that the U.S. economy was headed for major trouble in 2009. There was a declared recession in December 2007 (Business Cycle Dating Committee, 2008) and the Dow Jones in July 2008 fell 20 percent from its October 2007 high (The Privateer Market Letter, 2009). Unemployment rose to 7.2 percent in December 2008, with 6.5 million Americans out of work (U.S. Bureau of Labor Statistics, 2009). Then in November 2008, the housing market collapsed, foreclosures were sky rocketing, financial markets were plummeting, credit markets were freezing, and retail sales were falling drastically (The Economic Outlook and Options for Stimulus 2008).

In response to this, throughout 2008 the George W. Bush administration (2001-2009) passed numerous laws and "bail out" bills which were intended to save the economy from falling into a depression, but things were just getting worse. The scope of the problem grew as time was passing so there was a sense of urgency, but exactly what was to be done, and when, was not very clear. By the time Obama took office in 2009,

the US economy was looking very bleak. The following quote is a typical description of how people in Washington perceived the economy at the time.

> *An S&T lobbyist*: "The economy is in a crisis not seen since the Great Depression. Credit is frozen, consumer purchasing power is in decline, in the last four months the country has lost 2 million jobs and we are expected to lose another 3 to 5 million in the next year. Conservative economist Mark Zandi was blunt: "the economy is shutting down" [via email].

The Barack Obama administration in January 2009 gave the country a sense of optimism about the economy and high hopes for a different direction. Many people started to characterize the impending crisis as follows, "President-Elect Obama's chief of staff, Rahm Emanuel, recently said: 'You never want a serious crisis to go to waste. And what I mean by that is an opportunity to do things you think you could not do before'" (Friedman, 2008). This sentiment will be important later during the debates of the stimulus bill.

Here we can start to apply both of the frameworks. In the IAD, the economy significantly developed incentives for action among actors in and around Congress. Information is being perceived and interpreted about what the problem is and how to solve it. Ostrom (2005) explains "individuals attempt to create a mental model or a representation of diverse situations so as to be able to make reasonable decisions...." (p. 105). The accuracy and interpretation of the problem in these information mental models factor into actor's strategies and decisions.

The IAD suggests institutions are "human-constructed constraints and opportunities within which individual choice take place," so it becomes very clear the importance of inputs such as problem indicators and definitions in policy making (McGinnis, 2011b, p. 170). The problem of the economy is defined as a crisis, an

opportunity, and with a sense of urgency. The IAD variables such as allowable actions, potential outcomes, and information about the structure of the upcoming action situation are able to be extracted here. According to Ostrom, if a definition is interpreted by actors as an opportunity or a constraint, cost and benefits calculations and resulting behavior will reflect that interpretation..

Using the IAD, and the information about the economy, possible actions at this point are either Congress takes action and introduces a bill or Congress does not take any action. Possible actions facing the S&T community are whether to lobby Congress with policy ideas prior to knowing there would be another stimulus bill, waiting to see if action would be taken, or simply not concerning themselves with another stimulus bill and concentrating on the next appropriation cycle.

At this point, the IAD leads an analyst to map out potential outcomes for the S&T community if they decide to lobby for funds. They either receive funding or they do not and efforts would be wasted. Also, because the IAD stresses linked action situations, the S&T community has to consider that if they do receive funds, they would possibly receive fewer appropriations in the next appropriations cycle, which would be a big deal for the S&T community. The IAD suggests actors need more information about the upcoming situation in order to make more accurate assumptions about the future structure of a possible stimulus bill.

The declared recession and increasing unemployment numbers are the main focus events that define the magnitude of how difficult a situation the economy is in. The definition and magnitude of the crisis is one of the most important variables in the MSF and it makes up the problem stream. The MSF explains definitions and their

interpretations are important because they structure solution categories and develop criteria which policy ideas need to meet in order have a chance at adoption and survival in a bill.

When considering economic indicators, the MSF differentiates between a problem and a condition, where "conditions become defined as a problem when we come to believe that we should do something about them" (Kingdon, 1995, p.109). Indicators are not so much a declaration of a problem, as they assist in the interpretation of a situation or condition. They are used by actors to assess magnitudes and changes in the problem steam.

With the optimistic atmosphere, speeches, and references to the crisis as an opportunity there are glimpses of a policy window opening for a range of ideas to be considered to help the economy. The assumption drawn, consistent with the MSF, is that if a new stimulus bill is introduced during the Obama administration, it may be used as an opportunity to enact priorities which were neglected during the Bush administration, such as investments in S&T. One respondent commended on the new receptiveness of the Obama administration.

> *Political consultant:* In the Bush and Republican Congress, it was hard to get in door; S&T was not a community that they were interested in hearing from… the Obama administration didn't want to do the same as Bush, so they were actually looking for a range of ideas and were actually interested in talking with the scientific communities.

To explain a bit further, the economic crisis is described as the worst since the Great Depression. Solutions which were used to improve the situation during the Great Depression included a wide range of non-traditional policy ideas. President Franklin Roosevelt designed the Emergency Relief Appropriation Act of 1935, which created the Works Progress Administration (WPA). This act unusually provided significant funding

to promote the Arts and employ artists. This shows that what is traditionally thought of "stimulus"- tax cuts and building bridges- it is not always the only option. It is at the discretion of important actors and leaders involved in policy making. Applying the MSF, framing the crises as similar to the scope of the Great Depression may have formed assumptions within observant actors that untraditional approaches going beyond taxes and infrastructure would be seriously considered.

In the stimulus debate there are clear indicators and feedback that the economy is suffering, the feedback from the failed attempts of the Bush administration is quite clear that the economy was getting worse and unemployment was continuing to rise. The MSF and the IAD both explain how the variable of a weak and worsening economy contributes to the urgency and scope of the economic problem. This in turn aids in setting up the future action situation for the S&T community to make arguments that will position them as a solution to the problem due to past economic contributions.

S&T problem

Prior to Congress dealing with the stimulus bill and an economic crisis, the S&T community has been struggling with a "silent" crisis of their own, compounded by several years of setbacks in federal funding (*"Rising Above the Gathering Storm"* 2007). Over the last decade, basic research has seen a decline in federal funding. This decline leaves labs, facilities, universities, programs, and scientific progress to be outdated. This in turn limits the innovation capacity of the U.S., while encouraging the S&T workforce to conduct research overseas (Castro 2009; *"Rising Above the Gathering Storm"* 2007). It also leaves the U.S. vulnerable to other countries taking the lead in S&T fields because

they are advancing their S&T policies and accelerating funding, while the U.S. is actually decreasing theirs (Castro, 2009).

Starting in the 1980s, a global competitiveness justification emerged from the S&T community calling for serious federal investments in science over the long term in order to remain globally competitive and develop an innovation economy for a successful and secure future U.S. economy (Slaughter & Rhodes, 1996). The S&T community had started to make a public connection of the lack of federal funding in S&T and its connection to negative results in the U.S. economy and its scientific enterprise. They argue that significant benefits result from investments in S&T, especially in basic research due to multiplier and spillover effects that can lead to additional positive, unintended discoveries, developments, market and job creation (Nelson, 2004).

When looking at S&T's problem through the MSF, it becomes clear that S&T indicators in the problem stream were considered a problem, not merely a condition, by both the S&T community and Congress as we will soon see. During 2008, the community has enough bipartisan support in Congress, yet they keep struggling and competing with other policy ideas in the discretionary budget. This indicated a competitiveness problem within the community, one which will be elaborated on later.

The result from a problem stream perspective was that going into 2009, the community knows they need to stay in the conversation in the new administration and Congress, in hopes for better luck of funding. The stimulus bill is not yet in their sites in late 2008 (personal observation, March 16, 2009).

Perceptive S&T lobbyists, according to MSF, may have been able to take note of the problem stream related to the economy and see that their own problem stream, which

has an economic component and bipartisan support, may have a chance of meeting the criteria that is needed to survive in a future stimulus bill. However, there are reasons that the community may not have connected the two very confidently at first. The policy stream and politics stream also had an impact on the perception of a window opening, and affect the decision to spend political capital on lobbying for inclusion in a possible stimulus bill.

Past policies

The next description of events is similar to what the MSF describes as the policy stream. The policy stream consists of policy ideas, goals, and values floating around within those policy communities. Kingdon (1995) explains new ideas do not just appear on the agenda, they "must have already gone through this long process of consideration, floating up, discussion, revision, and trying out again" (p. 127). In the following section we will see that this is indeed the case for S&T. This process of "softening up" as Kingdon refers to it, also shows up in Ostrom's IAD in her focus on the history of policies that have later outcomes.

The IAD borrows from institutional rational choice theory which says that, "the valuation that participants assign to actions and outcomes" is one of the three components of human behavior, perceptions of opportunities and constraints faced by lobbyists and Congress are important to understanding the underlying policy making process (Ostrom, 2005, p. 103). One respondent comments below on the role that individual people's values play in the policy process. The assumption that policy values play a role in decision making is found in both frameworks.

> *Political consultant:* You make value judgments in policy, if you could make all decisions rationally you will have a dictatorship, so you have to make decisions

based on values.

Using the intuition from both the IAD and the MSF, the following milestones show the development or 'softening up' of S&T and becoming an important value in Congress over the past 10 years, yet they always fall short when it comes to Congress putting their money where their values are.

Reports build momentum

The MSF gives a special role to momentum. As already mentioned, new ideas do not just appear, they are refined and adapted to the policy environment. Also, the importance of past action situations and how they link to later action situations are central to the IAD framework, which she refers to as nested situations, within larger situations.

The momentum for S&T begins with an increase in reports which start popping up in the mid 2000's, most notably a report which was commissioned by Congress in October of 2005 called "Rising above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future" (RAGS). It was written by a committee from the National Academies of Sciences. Along with other reports, the RAGS brings to light the long term impacts of the lack of federal science investments on U.S. economic prosperity and global competiveness. A lobbyist for a scientific society describes, "The Rising Storm report was the tipping point in 2005, comparing the U.S. to other countries and pointing out a lack of leadership".

Additional reports start to gain footing in Congress and start to influence legislation. In November of 2005, House Speaker Nancy Pelosi announces a Democratic Innovation Agenda that signals Congress's intentions of taking a new direction with S&T policy. By 2007, S&T gains bipartisan support in Congress which is important for the political stream of the MSF.

The Bush administration

The Bush administration is considered by some to be anti-science as some respondents mentioned, but evidence suggests that this is not entirely true. While the Bush administration did have views on particular types of science and their usefulness in informing policy, Bush did acknowledge the connection between S&T funding and America's competitiveness in several ways.

Bush starts to increasingly mention the importance of basic research in his speeches, most notably in his State of the Union address of 2006. This is seen as a real victory for the S&T community because it leads people to believe the White House and Congress both agree S&T is an important investment worthy of federal funding.

Also, after the release of the RAGS report along with Nancy Pelosi's Democratic Innovation Agenda, Bush announces his American Competitiveness Initiative (ACI) in February 2007, which has bipartisan support in Congress. The ACI intends to do many things for S&T, one being to promote its role in the U.S. economy. All of ACI's initiatives are intended to maintain, as well as increase U.S. competitiveness in the S&T domain and the global market place (Marburger, 2006).

In August of 2007, most of Bush's ACI proposals are made into law in the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (COMPETES) Act. It passes 367-57 in the House and passes by Unanimous Consent in the Senate. However, while authorization is achieved, appropriations fall short and the momentum that had resulted in the passage of the COMPETES Act seems to come to an end. So, even though it made its way on the

agenda and managed to make some language into law, appropriations fell short, as one respondent commented below.

> *An S&T committee staffer*: Despite all the bipartisan, overwhelming support, when it came to appropriations, [the COMPETES Act] never got funded. There are a variety of reasons for this. [Although] it is hard to find anyone who was against funding for science, there were other things at the top of the 'to do list'.

The IAD and MSF lead us to assume the passage of the bipartisan COMPETES Act makes it clear to the community that Congress believes in their ideas. While it is a landmark piece of legislation, the lack of actual appropriations continued to frustrate the community. This frustration more than likely factors into the community's IAD mental models and the MSF political stream assumptions for future funding, meaning that they should be very calculated in their efforts because their chances are always limited by competition.

According to both the IAD and MSF, despite the lack of funding, this momentum is not wasted but is actually necessary. It contributes to the softening up process in MSF because policy ideas are not seriously considered randomly, it is the fact that Congress was passing language about S&T that set up the opportunity for future funding in the ARRA.

In the IAD, the openness, vividness, and salience of communication in and out of the community with Congress are very much related to the accuracy of information a participant has regarding their environments and upcoming action situations. The passage of the COMPETES is evidence of S&T's successful communication with Congress about their abilities. The mental model that was developed in Congress about S&T is important for when Congress needs to select policy ideas over others.

This history of S&T in Congress can be placed in the category of control in the action situation within the IAD. Ostrom explains that the level of control actors have in choosing solutions affects resulting policies chosen. Because Congress approves of S&T helping the economy, S&T is an available choice for future Congresses because of its past bipartisan support.

Shortfall of Fiscal Year appropriations

Even with all this support, the S&T community is not in a rush to assume that if there is another stimulus bill they will be considered for inclusion. The quote below describes the perspective the community had going into 2009.

> *Political consultant:* The arguments that were going on in 2008 for 2009 was not to worry about the stimulus…just focus on advocating for FY09 [regular appropriations] because we were worried about base numbers, because the stimulus numbers wouldn't go towards the base, so the general feeling was that the stimulus was less of a priority because it seemed like a long shot.

The context of this quote is due to an additional blow that the community experienced in late 2007 which affected assumptions about future strategies, action situations, and political streams in Congress and leads them to focus their attention elsewhere as several respondents mentioned. A quote below describes what happened during the FY08 appropriations cycle.

> *Political consultant:* The FY08 appropriations were a fight with Bush and Democrats. There was a $22 billion difference from top line numbers of the President and Congress's budgets. The Democrats pushed [to keep] the $22, but Bush [wouldn't allow it]. This type of thing is usually settled by compromising in the middle. So Democrats came back in November/December [2007] with $11 billion. Bush said 'No.'. He was more interested in a line in sand then governing and Democrats had no leverage. So science got screwed from $11 to zero.

S&T is once again a casualty of a limited budget and a lot of S&T agencies and their programs are negatively affected and frustrated by these cuts as another quote notes.

> *S&T committee staffer*: Bush had enough votes to have a veto, so a lot got cut to make up the $22 billion difference. Democrats joked that all of a sudden now Bush is a fiscal conservative while they were trillions of dollars in deficit. The cuts they had to make hurt a lot of programs.

From the perspective of the IAD and MSF, the laws passed by Congress were evidence of a successful repeated communication between and within the S&T community and Congress. However, in regards to appropriations and using the MSF, the feedback the S&T community continues to receive is that in the end, they do not meet some criteria necessary to beat out other appropriation items; they need to fight harder and strategize better.

The two frameworks force an analyst to consider the past neglect and explain why the S&T community does not anticipate having a role in the rumored stimulus bill. A closer look at the community gives us a better idea of the mental models the community develops before the House numbers are released, and shed some light on why the community is somewhat surprised to be including in the bill.

The Community

S&T policy in the federal government is very complex and hard to follow for many people including veterans who have been closely involved in it for decades. The quote below explains this.

> *Lobbyist for a scientific society:* When people want to know how science policy works, they don't understand that it happens at so many levels and so many different agencies are involved. Science policy is very different from other types of policies for this type of reason. A lot of it doesn't happen in legislation… Science policy is a process.

This makes any coordination effort difficult and tends to get policy done on an incremental basis (Neal, Smith, & McCormick 2008). While a lot of S&T policy is done

at regulation and interpretation levels, one of the most important aspects of S&T policy is done during the writing of the annual appropriation bills in Congress.

There is no Department of Science in the U.S. federal government. This means the jurisdictions of S&T lay in the hands of "more than thirty cabinet-level departments and federal agencies providing funding for, or have a role in, science and engineering research" (Neal et al, 2008, p.26). The S&T communities then learn to evolve strategies to manage this fragmentation and coordinate their efforts, sometimes taking advantage of the decentralization.

Outside of the government there are a variety of nongovernment entities which are interested in federal science agencies annual appropriations. These include a range of higher education associations, scientific societies, coalitions, ad hoc advocacy groups, think tanks, policy support organizations, and industry. All of these entities have something to gain and lose with the size of federal science appropriations (Neal et al, 2008).

Kingdon calls these entities policy entrepreneurs. They can be essentially anyone who uses their resources to push their group's policy ideas and attempt to influence policy making. Because in the MSF anyone can be a source of agenda setting and alternative specification, the framework is designed to give insight to why a particular person or group of people is able to wield influence on the policy making process.

For this case study, some of the more prominent S&T groups who are involved in lobbying for S&T funds in the stimulus after the House draft is released are: individual universities with a high level of research activity, such as the Georgia Institute of Technology; Higher Education associations such as the Association of Public and Land-

grant Universities (APLU); Scientific coalitions such as the Coalition for National Science Funding (CNSF); multi-sector collaboration groups such as the Task Force on American Innovation; and scientific societies such as the American Associations for the Advancement of Science (AAAS).

Using the MSF and IAD one can examine these groups and their missions to make assumptions about shared values and resources. These groups all share an overall goal of increasing the research money that goes to federal science agencies. They have frequent interaction with each other through regular meetings, newsletters, and email alerts. During my internship, there is an event held by at least one, if not several, of these organizations every day of the week. In each meeting, I hear the same conversations and vocabulary about the same issues, with minor additions as the days pass. Frequent attendance and email alerts allow a lobbyist to pick up on the nuances of the day to day progression of the community's lobbying efforts and what they are learning about Congress and their particular policy of interest.

Both the IAD and MSF give importance to the use of similar conversations, vocabularies, values, and goals within a community in order to have accurate expectations about policies generated within these communities. If the community is divided and approaches Congress with conflicting messages, there is risk of total failure or unpredictable results. However, consensus is not a necessary condition for a policy to be adopted, according to Kingdon.

For Ostrom, attributes of the community affect incentives in an action situation which are either explicitly or implicitly considered, therefore differences in things such as

goals and values can lead to false assumptions about the structure of a situation, possible outcomes, and actions.

The S&T community is a small, tight-knit group where most everyone has worked with each other for several years, whether on Capitol Hill in past positions or they met through the S&T networks. Every year these organizations mobilize their memberships on Congress for the next year's "ask", which is generally a written request for some percent increase in appropriation levels from the previous year.

While their overarching goal is the same, to increase funds for federal research agencies, each group naturally has their target agencies which they stand to benefit from. The IAD specifically looks at these inequalities and historical conflicts to form better assumptions about the outcome of the process. For the purposes of this case study however, in the lobbying efforts for the stimulus bill, just about everyone was advocating for an increase in funds for S&T in general, not just a particular agency, so these underlying inequalities do not dominate in this case. This may be due to a rational that increasing the funds for overall science will benefit everyone in the community in some way and the particulars will be determined by the federal agencies themselves later. Also, having one message of 'science is important' is central to be perceived as a united community by Congress.

Going into January 2009, the S&T community is hesitant to lobby for stimulus funding. There are several reasons for this hesitation and their uncertainty is warranted. The IAD explains a rule of thumb that develops from repeated failures and factored into the community's information processing. When people are in repetitive situations, as

S&T lobbyist are every year, they come to develop patterns and are able to have a good sense of reaction and receptivity of their proposals.

In the S&T community, advocates are learning that the annual battle of the fiscal year appropriations is the arena they need to survive in, so a lot of effort and political capital is needed, therefore making it a risky move to lobby for stimulus funds when S&T may not be seriously considered for inclusion in the first place.

Therefore, the S&T community start off their lobbying efforts in 2009 more concerned with the FY09 appropriations (which are not all passed on time 2008), rather than trying to be part of the ambiguous stimulus, which no one really knows what it would include or if would even exist.

The IAD stresses the importance of learning by actors from one action situation to the next. Not only does learning take place, but values and beliefs develop over time, explained by both the IAD and MSF, in response to changing environments and action situations. The IAD explains that internal information processing mechanisms of the community control a rash decision to lobby for funds that may not have a great chance to come to fruition.

The S&T community and Congress are in separate streams in the MSF. This is because the MSF assumes they function by different dynamics and incentives, although they are loosely coupled. The S&T community is located in the policy stream, working on floating ideas around, and adapting them to current agenda items. They are affected by community interactions and values and are concerned with meeting criteria determined by the political and problem streams. Congress is in the political stream because they are

affected by things like national mood. They also have different incentives and goals that the S&T community such as reelection and the concern for their particular constituencies.

As just about all respondents comment, being included in the bill with such high numbers is unexpected by the community. This is because they are so concerned and preoccupied with the FY09 appropriations. An explanation cannot be found from Kingdon, Ostrom, or my observations which can elucidate exactly how S&T is first placed in the ARRA. This story is more about survival in the stimulus bill rather than their traditional lobbying roles of first influencing the agenda and/or getting a policy idea initially seriously considered.

From my observations, the surprise that the community experienced at their significant inclusion in the bill does not diminish their role in policy making; it just changes the process from actively advocating for inclusion, to reacting and actively advocating for their survival. Had there been no community to encourage their persistence in the bill and lobby congressmen, the controversial nature of the bill could have doomed S&T to its seemingly familiar fate in Congress as being considered not imperative enough to make it into law.

The MSF allows such a seemingly random start of the process result because the past does not always dictate the future in policy making; it is always about the present environment, unlike the IAD. In the MSF, histories can cross each other in unrelated decision situations, affecting the same outcomes.

Only using the IAD to tell the story is difficult. One has to make sure all histories are accounted for because it is not always obvious which are relevant until after the outcome is decided. Ostrom places great emphasis on the origin of a decision, where the

MSF specifically does not. Perhaps a deeper analysis, richer information, and the ability to have observed processes at the higher Congressional and presidential levels could reveal the role actors played in getting S&T in the bill in the first place

One can have a bit of optimism in the MSF that streams can come together differently and eventually work in its favor. Where the IAD is more cumbersome and complicated when trying to assess an array of possibly relevant histories and optimistic opportunities are not always intuitive. Although both the funds included in the ARRA were a bit unexpected due to a lack of concerted lobbying effort, both frameworks can explain the steps

Congress and S&T relationships

Following the structure of the MSF, here we consider aspects of the political stream that leads to S&T bipartisan support in Congress. The quote below is a typical explanation.

> *Q:* Why were you so confident S&T would stay in the Stimulus bill?
> *A lobbyist for a scientific organization:* If you are realistic, you can never be too sure. But from watching it and knowing the weight Obama put on science during his campaign and Pelosi doing the same thing with her pro science speeches, and combined with the fact that in most cases science is not controversial, [I was pretty sure]. [Americans] want to have cures for cancer or [our energy crisis]. These are things Americans care about… [Also] voting *against* S&T is not perceived to be politically popular… [and it is] not a political hard sell".

From my interviews, it seems the community feels it is hard to find members in Congress who are completely against S&T funding, especially because a lot of Congress members have federal labs and Universities in their districts, and they can claim they are finding a cure for cancer or solution for energy issues. The rule of thumb I observed is that S&T funding is a valid bipartisan idea and that it is unusual for a congressman to outright vote against S&T funding.

Another element in the political stream which has significant weight in both the MSF and IAD was the change in presidential administration and a new Congress. In the MSF these changes are one aspect of the political stream, while in the IAD they affect who is in what position, which changes the structure of a situation by changing preferences, goals, and interpretations. Along with all the information a participant has, their position also determines possible actions that are allowed to take place and the amount of control they have over the final outcome.

From the MSF, we should also pay attention to the national mood starting in 2009. The mood of the nation was one of fear and hope of government action with the new Obama administration. Government agencies, most professionals, and academics claim 2008 was one of the worst years since the Great Depression. Also in regards to science funding, public opinion polls about basic research found that a majority of Americans feel S&T has a positive effect on the U.S. society and quality of life (Pew Research Center for the People and the Press, 2009).

In the IAD, national mood plays a role in the mental models participant have about their future decisions and actions, but does not have a specific role within the framework. Lobbyist worry about the moods of people they are representing, while congressmen worry about their constituents. Having an accurate assessment of expected behavior and proper language is a critical skill that has to be learned over time.

Obama's role

Leadership is an important element in the political stream of the MSF. It has historically played a big role in generating significant S&T policy. If the president or

Congressional leaders think that S&T can be part of a solution to a particular problem, S&T stands to benefit. The following quote illustrates this dynamic.

> *A lobbyist for a scientific society:* [Significant science policy] is all about the President's response. You have…President [Obama] who came into a situation, an energy situation that was not too big a crisis since the oil prices declined. But when the financial markets crashed, he had a window with the stimulus and he decided science would be the solution. It was his chance to throw as much money in one bill as possible. [The] choice started with the President and then was endorsed by Congress.

Obama was a supporter of S&T from the very beginning of his presidential campaign, and although promises that are made during campaigns do not always receive follow through, the S&T community was more than happy to hear public statements of support for S&T.

The S&T community starts to interpret hints of a promising role to play in the Obama administration. In just about all of my interviews, respondents mention the 2008 presidential campaign trail where Obama makes numerous campaign speeches that include his views about the importance of S&T, such as doubling investments in basic research. On November 26, 2008 Obama releases his Innovation agenda. The purpose of this agenda is to announce his intention to bring the federal government into the 21st century and restore S&T's place in Congress and the economy, setting the tone and expectations for his administration.

In the IAD perspective, this information will fall into the working rules of the community. The fact that Obama is making public speeches is a possible signs of good things to come, but then again, Bush made similar speeches and his policies always fell short. While the community is starting to be excited about possibilities, the working rules

that developed through history leaves them reluctant to assume Obama's speeches and language are more than just that.

In 2008, Democrats gain the majority in the House and Senate and with a Democratic President coming into office in 2009, the general understanding was that Democratic agenda items are going to receive priority, and S&T tends to be a Democratic priority (personal communication, April 13, 2009).

President Obama hits the ground running by assembling transition teams to are reach out to the S&T community in late November (Tollefson 2009). Applying the MSF, these early contacts are critical to merging the three streams and allowing the community to better take advantage of the policy window that is opening after the House draft is released.

Obama's transition teams are very receptive to the S&T community and are eager to get conversations going (personal communication, April 13, 2009). Informal and formal meetings start to take place between important figures in the S&T community and the transition teams. Meetings were with the heads of NASULCG (now APLU) and AAU, as a lobbyist for a higher education organization explained, "there was a lot of back and forth going on".

Before the election, no one knew for sure who will be President but this does not stop communities from mobilizing and working with presidential campaign teams to educate and provide information for the presidential candidates, as two respondents explained and the quote below suggests.

> *A lobbyist for a higher education organization:* After Obama was president the possibility for S&T increased dramatically, [especially] because there was discussion about science during the campaigns. [Also] there was a science debate

> among the candidates which had interviews with Obama and McCain. It may have worked out well for science had [John] McCain won too.

In the IAD, making the right assumptions about actors is one of the hardest and most important aspects of the framework. So these early connections and speeches are very helpful in forming important expectations about Obama values in science, according both frameworks.

A political consultant explains, an additional signal of Obama's support for S&T is the creation of his very prestigious and "aggressive science advisory team" for his campaign that was chaired by Harold Varmus, a Nobel laureate and former director of the National Institutes of Health. Moreover, when Obama announces his choices for his science appointments, it added to S&T's optimism about their role in his administration as the following quote explains.

> *Political consultant*: In Obama's campaign, there was a push for OSTP to be more important. [Then] Holdren's appointment announcement was a sign that OSTP will play big role in administration, which signaled that good things will happen and that the President [believed] investments in science [were] fundamental to the economy.

According to the Chairmen of the House Science and Technology Committee, Rep. Bart Gordon D-TN, when first meeting Obama, the then President-elect introduced himself as "a science guy" (Wolfe, 2009). All of these things are symbolically important for the S&T community because they show how Obama does indeed understand the role science plays in his administration.

More signs

In addition to Obama's leadership, words, and actions, there are other signals of S&T's place within the new Congress. Nancy Pelosi has always been outspoken about the role of S&T in the economy, as the following respondent discusses.

> *An S&T committee Staffer*: Pelosi was a strong advocate in the House. It was not just a parochial interest for her….she has seen the good S&T can do. When she started as Speaker people asked her what was on the agenda, she said 'science, science, science'. Then some time later when they asked her that same question, she added the 4th science to stress her interest. She just has a strong conviction about science. You can be cynical and say it's about her district [being in Silicon Valley, so] there is political reason for her [S&T] advocacy, but she wins in elections with 90% of the vote, so it is not about keeping her seat…she just believes it is good policy. Same with Gordon, [he doesn't just support science] because he wants more votes. Gordon knows what science can do to serve the national good.

Later, to the delight of the S&T community, Pelosi is increasingly giving speeches promoting the role of science in the stimulus bill (Mervis 2009a). The following respondent notes the excitement.

> *A lobbyist for a higher education organization:* It wasn't until November/December [2008] that I was sure of the role science would play. Everything changed when [the incoming Obama] administration indicated interest and Pelosi became more vocal, [which] happened in November. She was talking about the need to include science…One person from the X group was at a fundraiser in Oregon in November for their members delegation where Pelosi was speaking, and she first said her mantra of Science times four, that …person called me so excited and said "oh my god- she just said science times four!" It gave us lots of hope.

Combining all of Obama's and Pelosi's public statements and actions, as well as the relationship formed and information exchanged with transition teams, the S&T community is encouraged that S&T will play a role in the new administration- just what role is uncertain, as a political consultant comments, "the seeds were planted" for S&T to be a success in the Obama administration.

Another signal of S&T's possible role comes in December 2008. A significant meeting takes place at Princeton University that consists of many members of Congress and prominent S&T advocates who are promoting science and its ability to help restore the U.S. economy. One of these actors is Norm Augustine, former CEO of Lockheed Martin and main author of the RAGS report. Also in early January, the House

Democratic Steering committee holds a hearing with similar witnesses to further discuss S&T's role in a possible stimulus bill. The next day on January 8, the NAS releases a report, "Beyond Fortress America" that discusses S&T and globalization. Also on that day, Obama makes a speech at George Mason University making a public appeal for S&T and the stimulus bill.

These events are important clues and provide momentum for the S&T community, according to the MSF. These events factor into the expectation of actors because with influential people spending their scant time and attention talking about the connection of the economy and science, it is bound to take some form in the new Congress, perhaps just closer in the future then they expect. Half of the battle described by the MSF is staying relevant in the policy conversations and S&T is proving that it could.

In the IAD, most of what was just described falls into the input categories of the action situations. What Ostrom refers to as the working components of an action situation, "participants in positions who must decide among diverse actions in light of the information they possess about how actions are linked to potential outcomes and the cost and benefits assigned to actions and outcomes" (McGinnis, 2011b, p. 173-174). Now the action situation regarding the decision for S&T to lobbying for Stimulus funds is beginning to take shape because actors in leadership roles in the government understand what investments in S&T's can do for the economy, and the community takes note.

CHAPTER 3

POLICY ENVIRONMENT AFTER ARRA'S INTRODUCTION IN THE HOUSE OF REPRESENTATIVES

How Congress usually works

In order to appreciate the process and events which take place during the stimulus bill's passage, it is important to understand the nuances and rules in Congress which actually affect which policy ideas are chosen to be included in a bill. We can start by looking at the differences of the rules in the House from those in the Senate. The quote below describes a perception of the difference.

> *Science policy fellow*: In the Senate anyone is a player. The House leadership was big [during the stimulus bill] because they can pass what they want. The House can control amendments, where in the Senate they can't stop amendment from being made

People refer to how things get done in the Senate as herding a bunch of wild cats. This is because it is more of a 'free for all' in terms of debate rules and the amendments that are allowed to be proposed on the floor. Individual Senators have more power than a House Representative and therefore would have more influence on a bill's content and passage, but in the end, both chambers need to agree.

The IAD stresses the importance of rules in structuring an action situation, and applying the IAD to this case study, the role rules play becomes very apparent. During the stimulus debate, the House has206 amendments submitted for floor consideration, but only 11 are allowed by the House Rules committee to be voted on (Allen, 2009). Generally, the chairwomen of the Rules committee is to choose which amendments are worthy of a floor vote. For the stimulus bill, the chairwomen reports that amendments are

chosen based on their relevancy, ability to stimulate, as well as their price tags, which can be a very subjective and partisan process (Allen, 2009).

Rules in the House also dictate the duration of floor debates. Before the House draft is released, members of the House complain that they wanted more time for committee consideration, such as the Committee on Transportation and Infrastructure, but the Democratic leadership responds that they already held enough hearings and provided plenty of time for debate (Clarke, 2009a).

When it comes time for the merger of bills from both chambers, the leaderships, key chairmanships, and senior staff have a lot of influence on bills and their contents, especially through their use of rules and procedures. As the following quote points out, things can change when the bill gets to the conference committee. It is then that the leadership can decide who will participate in the negotiations, giving them significant control over the final contents of a bill.

> *Personal notes from a conversation with a lobbyist from a research university:* [We spoke about] the process of how a bill becomes a law regarding the stimulus. In theory … the Senate and House agree on a version, then both the leaders of the chambers agree on one version, and then it goes to the President. But in reality… it is *way* more complicated than that…
>
> …The leaders of the House and Senate as well as key appropriators are definitely involved in merging them together. They can decide to include minority leaders if they want but do not have to. Since the leaders are from the majority party, it does lead to partisan bills, especially in this case because the President and Congress are Democrats…[The respondent] said that they will more than likely include McConnell, the Senate minority leader, but probably won't let the House minority leader in because they don't need Republican support in the House to get it passed. But since Obama wants to have this as a bipartisan bill, they may choose to allow more Republicans to be at the final decision table and may give them some legislation in the bill so that they can get their fellow Republicans to vote the bill in.

Thus, even after a committee amends contents within its jurisdiction, provisions and language can appear and disappear in the final conference report at what seems like the whim and preferences of the conference committee members and the leaderships.

Staffers' role

Staffers play a significant role in Congress. They are a powerful stepping stone for issues to make their way on, first a Congress members' agenda, and later the Congressional agenda. Therefore, staffers are high priority targets for lobbyist. They also have their own lobbying role in Congress. Staffers from one committee or congressional office frequently lobby other staffers with information that is favorable to their respective jurisdictional priorities. This lobbying, which leads to relationship building between staffers in different jurisdictions, is an important part of the legislative process, as the following quote describes.

> *S&T committee Staffer*: [By the time the stimulus debates began], appropriators had developed much better relationships in last two years with S&T staffers and [S&T committee] members. They had to make hard decisions [in the past] that people weren't so happy about but…but the lines of communication were more open …in the past two years there was a lot of relationship building.

Senior staffers hold valuable institutional knowledge that can make or break lobbying and legislative efforts. Therefore the rule of thumb is to always get staffers on your side and always invite them to your events. When relationships are established, staffers then reach out to trusted circles of lobbyists and other staffers for policy ideas and information to push issues from the inside.

During the stimulus debate there are a number of staffers who attend S&T community meeting, either to simply listen, or to actively inform the community of insider information like the mood of particular members and their values. They play a

significant role in informing the community as to what arguments members of Congress are expecting and looking for (i.e. job numbers).

In the MSF, positions are less important in determining policy outcomes, it is more about the direction and flow of a stream, regardless of who is steering it. This is because of the weight he puts on all actors, everyone can be an entrepreneur irrespective of formal authority. Also, the MSF accounts for the fact that while policy communities do not have any authority in Congress, they do have a significant role to play in the policy stream and ultimate idea adoption in the form of information gathering and sharing with Congress.

The quote below suggests informal positions do have some weight that affects the action situation indirectly.

> *A lobbyist for a higher education organization:* [In mid-January there was a hearing held by the House Democratic Steering and Policy Committee which] included economists and [Norman] Augustine as witnesses. That hearing was also really indicative of strong support for science in the stimulus… Augustine really spoke about the importance of including science in bill…[I] spoke with him for a second afterwards to thank him for his comments, he told me 'don't settle for too little, you have to ask for more'. I found this helpful and encouraging that science will make it.

The position that Norman Augustine holds in the S&T community is a significant one, even though he does not have any formal authority in Congress. Augustine is the former chief executive officer of the Lockheed Martin Corporation, is currently a member of the President's Council of Advisors on Science and Technology, and has been awarded many prestigious honors for his science advocacy. Most notably he played a big role in the writing of the RAGS report and continues to advocate for increasing support for S&T in Congress.

His testimony to Congress and conversation with the above lobbyist carried enough weight to encourage the lobbyists to have confidence in their lobbying efforts. Without such a direct comment, the lobbyist's personal efforts, as well as the information shared with the community afterwards, maybe weaker if there not been that brief conversation with Augustine.

The IAD gives a special role to positions, "each of which has a unique combination of resources, opportunities, preferences, and responsibilities" (McGinnis, 2011b, p. 174). Ostrom (2005) explains positions link actors and their actions. The role of lobbyists seems to be confined to the community attributes category in the IAD, which is located outside the action situation, separate from debates and relevant conversations. While it makes sense that staffers and Congress members who have denoted authority in Congress are most relevant in an action situation, intuitively it suggests that lobbyists play a lesser role. On the other hand, the MSF lets these actors such as lobbyists, staffers and congressmen be intuitively thought of as affecting the policy outcome at the same time as members of Congress, with the possibility of equal weight, depending on the current policy environment. The quote below supports this suggestion.

> *Personal observation:* It seems pretty clear how voting works when you look at the D.C. voting rights act. Someone slipped in a gun rights amendment [loosening current law] that can kill the whole bill. The NRA is playing a huge role in this because they are going to count votes, and [the Congressmen] that vote against [the amendment], may lose voters because of the NRA's connections to businesses and large voting bases. By going back and seeing who supported the amendment, [the NRA] could tell their members to vote for a particular candidate during reelection."

Irregular order

The stimulus bill takes a different course through Congress then a bill usually takes. Speaker Pelosi states to the House Democrats during the Stimulus debate that once

the stimulus legislation is signed by the President, things will return to "regular order" and normal floor procedures will resume. In a way she is confirming criticisms that the House leadership is using procedural tactics to push the stimulus bill through the House without the usual opportunities for debate and proposals (Epstein, 2009b).The quote below illustrates one of the common perceptions of the time about how the bill was dealt with in Congress.

> *Senior Congressional Staffer*: No Republicans or rank and file Democrats were included in the Debate. [There was] no full inclusion in the drafting of the legislation. It was definitely a top down approach, although some Democrats may say otherwise. (Epstein 2009a)

This lack of regular order adds to the unpredictability of the stimulus bill's processes and its contents. In the MSF this irregular order does not change the processes of how an idea is taken into serious consideration. The MSF is about policy change and policy ideas coming from multiple places, not particular sequences or a predetermined path- which are defined by rules in Congress. While the MSF cannot predict which policy ideas will be selected in the final bill, it is meant to assist in developing an intuition about possible ideas which have a good chance of surviving, whether there is regular order or not. The irregular order only changes the opportunities and signals actors have to interpret to be able to effectively adapt their solution to the current policy environment. Experienced actors, according to the MSF, will intuitively know what their next step should be regardless of regular order.

The IAD approaches this lack of regular order differently. Regular order, or in other words, predictable rules are important in terms of allowing actors to know what actions are allowed. When regular order is placed aside there are a lot of unknowns about possible actions, structures, and therefore outcomes. The IAD does acknowledge that

when rules are unstable, the resulting situation will be unpredictable. Unlike the intuition which actors could use in the MSF, the IAD seems to need to let the situation play out further to see what rules will be followed, in order for actors to make accurate assumptions in the resulting action situation. Once the rules in use are decided, the IAD allows for an assessment of their meanings, interpretations, and outcomes. Ostrom refers to these as institutional statements and grammar.

Jurisdiction

Given the top down approach of the stimulus bill's passage through Congress, as political consultant explains to me, this leads to limited committee jurisdiction and the reduction of individual member's involvement in the crafting of the stimulus legislation. The following quote illustrates how jurisdictional power wars are a regular occurrence in the U.S. Congress and how it can directly affect the content of legislation.

> *Personal notes from a conversation with a lobbyist for a research university*: Say a committee staffer writes up a bill (members normally do not do this). Then [the parliamentarian] will reference certain other committees that need to approve the bill in order for it to be considered. [The respondent] said the savvy staffer will want the bill to go through the least possible number of committees and of course prefer to only go through their own committee. So the staffer could ask [the parliamentarian] what parts of the bill caused [the bill] to be referenced to other committees. Then the staffer will manipulate the bill to scratch out the need to involve another committee. The more committees, the more convincing and compromise needs to take place. [The respondent] said that there is significant power within committees and none of them are willing to give up their powers, and are very obsessed with their jurisdictions.

Due to the perceived urgent nature of the economy, there are changes in the regular policy making process. This urgency is evidenced by their self-imposed February 17th deadline and the fact that the stimulus bill has very limited committee jurisdiction in Congress, although it proposes numerous solutions, language, and appropriations. Under different circumstances it is likely the bill would fall within multiple jurisdictions. After

the House's stimulus bill is introduced in early January, the bill is only officially referred to the House Appropriations and Budget Committees. This restricts the amount of debate and input that goes into the first House draft, which allowed the bill to proceed through the House quickly and with mostly democratic leadership priorities.

Expanding jurisdiction at this time would delay the bills movement through the policy process. This speed and exclusion of additional jurisdiction stirs a lot of anger and concern among House members, but may be a factor in improving S&T's chances for inclusion by simply skipping the regular order of tedious multiple markup hearings which take place when additional committees and sub committees are included.

The discussion of jurisdiction falls under different aspects of the IAD, such as positions, boundary rules, and design principles for enduring institutions. Each position has a determined action set which is constrained and determined by level of authority. Pelosi is the obvious example of a position wielding its authority to structure the action situation in order to control the contents of the stimulus bill. According to the IAD, reducing the number of actors in positions leads to fewer preferences and action sets available to choose from, which is exactly the point.

In the political stream, the MSF explicitly addresses jurisdiction as a "central governmental process" (Kingdon, 1995, p. 155). Jurisdiction affects many aspects of agenda setting and policy ideas chosen. Staffers are known to cause ideas to be "'defined away' by the drawing of jurisdictional boundaries" (Kingdon, 1995, p.155). When bills span multiple committees, government action is stifled according to Kingdon.

Given the urgent nature of the economy, the congressional leadership takes advantage of the actions which are within their action sets, defined by their positions.

They were able to speed the process and bypass the jurisdictional boundaries that would have likely slowed, if not killed, the stimulus bill.

Lobbying

When someone outside Congress wants to exert any influence on member of Congress regarding a policy idea, getting a meeting with at least the relevant congressional or committee staffer is important. The goal is to have a clear and relevant enough policy idea that can be easily understood and able to adapt and survive though its passage in Congress (personal observation, January 26, 2009)

Here the importance of the mental models is found in the IAD and the softening up process of the MSF policy stream. Ostrom (2005) explains policy making as policy "experiments based on more or less informed expectations about potential outcomes and the distribution of these outcomes for participants across time and space" (p. 243). It is the role of actors in policy communities to inform staffers and members of Congress of expectations and possible outcomes.

The ARRA

The actual congressional debate on the stimulus bill starts in the beginning of January 2009. The context of the debate is centered on partisan politics from the very beginning. Before its introduction in the House, the proposed stimulus package is being estimated to cost around $700 billion to $1.3 trillion, with the expectation of creating about 3 million jobs (Clarke & Schatz, 2009). Also, statements made by Pelosi suggest that the contents and speed of the bill are more important than the total cost (Epstein, 2009c)

The speed of the bill through Congress is one of the most controversial parts of the stimulus story. Pelosi makes it clear that Congress is going to move quickly to help relieve the unemployed and provide Americans impacted by the recession with immediate relief. Expectations are that this bill will get passed in six weeks. Just in time for Obama to sign the bill before the President's Day recess on February 17, 2009. Pelosi says they will not leave for the recess if the bill is not ready for the President to sign (Epstein, 2009d). Historically, deadlines in Congress tend to encourage compromise, because when there is no deadline, negotiations do not take place until the last moments of a bill, so a tight timeframe is appropriate to force consensus (Schick, 2007).

While some lawmakers feel early on that this is a do-able timeline, others felt they do not have the time to properly consider the bill to make an informed vote (Clarke & Schatz, 2009; Krawzak & Clarke 2009; Schatz & Clarke 2009a). Exactly how big and diverse the package is was not yet clear, but unemployment benefits, tax cuts, infrastructure spending, and aid to states are part of the public conversation from the very start (Schatz & Clarke 2009a; Clarke 2009a)

From the perspective in Congress, the main obstacles to overcome are the Republicans in the Senate and the fiscally conservative Blue Dog Coalition in the House. They warned the Democratic leadership that unless Obama made clear his intentions to be fiscally responsible and takes steps to address the growing national debt, they will not be voting for the House bill (Clarke 2009b). The Blue Dogs are the only real threat to the House's passage of the bill, because the House has a large Democratic majority, and the Republican vote will not affect the outcome of the bill.

House draft

On January 15, 2009 House Resolution 1 (H.R.1) is introduced by Appropriations Committee Chair, Representative David Obey. He is considered one of the main architects of the bill, along with Pelosi. There are nine original Democratic sponsors, all of which are Chairmen of their respective committees: Representatives Barney Frank, Financial Services; Bart Gordon, Science and Technology; George Miller, Education and Labor; James Oberstar, Transportation and Infrastructure; Charles Rangel, Ways and Means Committee; John Spratt, Budget Committee; Edolphus Towns, Oversight and Government Reform; Nydia Velazquez, Small Businesses; and Henry Waxman, Energy and Commerce.

When mapped out by the IAD, observing that Representative Bart Gordon of the S&T committee is one of the original sponsors of the bill, will allow an analyst to assume S&T will be included somehow in the bill.

The House passes H.R.1 on January 28 without a single Republican vote and with eleven Democratic votes against the bill, 244-188.

Definitions

The bill, as stated in the first draft of H.R.1 is, "…making supplemental appropriations for job preservation and creation, infrastructure investment, energy efficiency and science, assistance to the unemployed, and State and local fiscal stabilization…" (2009).

In addition to science being explicitly included in the main purpose of the bill, H.R.1 also includes significant appropriations for S&T's related federal agencies, such as NSF, NIH, and DOE. This language and appropriations let the S&T community know

that they need to mobilize and advocate for their survival in the bill by making a good case for their relevancy and abilities to stimulate the economy.

As already mentioned, in the MSF the definition of the problem is very important in determining the categories of choices worthy of being in the solution set to address the problem. Once a condition is determined to be a problem, as evident through the introduction of H.R.1, categories are determined from the subsequent problem definitions. Science is included as a valid solution to the economic crisis. From the perspective of the community, their inclusion removes a lot of preconceived constraints on what is traditionally included in a stimulus bill, allowing actors to strategize in light of this new opportunity as described in the IAD and MSF.

Now that the problem solution categories are defined by H.R.1, meeting criteria for survival is the next big obstacle. In this case, the speed and feasibility of implementation will limit some policy ideas because they need to be implemented quickly, easily, and stimulate the economy almost immediately. S&T however is well positioned for this argument.

The MSF places particular importance on this aspect of a policy idea. Kingdon explains that policy ideas which make their way into a bill have already reached some census within the community about its feasibility and implementation abilities, before they reach serious consideration in Congress. So in other words, S&T argues they are ready, willing, and able to stimulate the economy, if appropriated enough funds.

Lobbying frenzy

"When a window opens, it is too late to work up proposals from scratch; proposals must be ready long before that" (Kingdon, 1995, p. 227). S&T policy proposals

are ready to go for a long time, as evidenced through recent initiatives and laws passed in Congress. Once the House draft is released, the S&T community is well positioned, informed, and connected to provide information and support for S&T's continued inclusion in the bill. The following quote explains how the community perceived this.

> *Science Policy fellow*: [We were] not sure science would be in the bill until the House numbers came out. [Representative] Obey and the Speaker put [science] in there. That's when the push for science in my organization came- that's when we knew science would be part of it, so we mobilized our members to tell their [congressional] delegations to support the House numbers. The big push for science originated in the House.

Pleasantly surprised to be included in the House's first draft of the bill, the S&T community hit the ground running with advocacy and thank you letters for S&T's inclusion in the bill. Looking through the MSF lens, the S&T community knows that even though they are included in the first draft, this does not guarantee their survival. They now need to quickly strategize, contact the right people, and use the right justifications to meet survival criteria. The quote below notes strategies being considered.

> *Personal notes taken during an S&T strategy meeting*: They started off by talking about what numbers people were expecting to see in the ominous [FY09] bill and the Senate stimulus bill… They are afraid that the Senate will only want to fund infrastructure projects and not research projects because Senators may not see the connection of research and job creation.
>
> …They felt they really needed to reach out to Senate Republicans because all House republicans voted 'No' on the stimulus. They don't want the [Senate] Republicans coming up with amendments to make cuts in science. They stressed they need a one pager that stresses the job creation potential of investing in science.… They [also] stressed that [their strategy] has to be a top down approach. They have to have a negotiating position with the senators not just the staff.

Additional lobbying efforts include science and higher education organizations contacting their memberships with "action alerts" which ask them to communicate their

support for S&T in the ARRA with their Congressmen. The respondent below illustrates the process and the reaction of his membership.

> *Representative from a scientific association:* [We] have two types of emails we normally send out. One is informational…then we have action alerts, which we try to use sparingly so people won't ignore them. Normally… it has to go through a process and the council has to approve it, but because of the timing and fast pace of things that were happening, the action alert - telling members to advocate for increases- was fast tracked through the approval process and only the President of [the organization] signed it.
>
> …We did get some push back from members. Some because they were against the whole stimulus bill in general, others thought it made the [organization] look greedy. They weren't happy that [we] were sending out action alerts making members go and advocate for the bill. Some even said that they were quitting [the organization] because of the action alert – but my boss told me that they will probably rejoin once there is a conference.
>
> …I write the newsletters and a little bit ago I wrote about how you have to advocate for science with any vehicle that presents itself. [I learned] you are not going to make all members happy. [You can compare this] to the war supplement bill a couple years ago, there was pushback from members that were anti-war, but…you need to advocate for science when you have the chance, in any vehicle- and the stimulus bill was the vehicle this time.

The IAD describes this mobilization as necessary to get serious consideration of policy ideas, "since institutional processes necessarily require concerted action of many individuals, an especially critical function is filled by those entrepreneurs who offer appealing new visions or innovative practical solutions to governance problems" (McGinnis, 2011b, p. 171). Not only are regular organization members mobilized, lobbyists are also moving in full force to get their high profile people (i.e., CEOs, university presidents, heads of organizations, etc.) to contact Congress with phone calls, in person meeting, and multiple letters to ask for S&T survival in the bill.

Communication from these types of actors carries more weight with members of Congress then simple members in an organization who do not hold positions of authority within the S&T community. The quote below is a good example of this strategy and how

while the community needs the support of members of Congress, most the time, members of Congress need the support of communities as well.

> *Personal notes taken during an S&T strategy meeting*: [A lobbyist for a technology firm] asked if anyone knew any Senators that they could meet with and that could really help science get bigger numbers. One [lobbyist] suggested [a contact] who knew a chancellor that knew the Governor of New York (NY), who knew the new NY Senator, Kirsten Gillibrand. This could be helpful mainly because of the Brookhaven labs in NY. [The lobbyist] said that [Gillibrand] needs something like this to bring to the floor so that her constituency will vote for her when election time comes. And she also has had connections with IBM. [She may be able to make a big] impact with an amendment for more science funding.

Along with mobilizing actors, the S&T community needs to adapt their message about what S&T can do for the economy. They change their message from sustained annual base budget increases, to the need for a one time infusion of funds that will create and maintain thousands of jobs. This means they will have to explicitly frame science as economically simulative, which conflicts with their past arguments and risks future lobbying efforts, making some in the community hesitant about receiving any stimulus money. As the quote below suggests, they are willing to take the risk.

> *Political consultant:* The story about how…the stimulus [became] more important is interesting. The rules is never turn down an advocacy option and always try and see if you have a chance, particularly if that chance is related to DOE and facilities. There were two conflicting arguments when advocating for being in stimulus in the beginning: research is simulative, an economic argument or when other roads and transportation projects are being built, some [projects] should be related to science.
>
> Then a third argument developed, the economy is stimulated because of the workforce impacts, [therefore] the scientific workforce is important. The scientific community found the pipeline was the strongest argument. That the research community enables the economy and if the U.S. is to lead, we must lead with STEM workforce…

Both the MSF and IAD are helpful to understand this change in lobbying strategy. Ostrom explains, "individuals may change their strategies over time as they learn more about the results of past actions" (2005, p. 64). The buildup of the transition team,

Obama and Pelosi's public statements about S&T, and now the fact that they are included in the bill, makes the S&T community more willing to accept the risks of one time stimulus funding, than to weather the economic situation alone.

MSF describes the same concept a bit differently. Because Congress members see a consensus about S&T's abilities concerning the economy, the next step for the community to observe how the streams are merging and take the appropriate action to make it through the policy window that is wide open. MSF explains this change in message as an adaptation required for survival in the bill. Also Kingdon (1995) further explains that when policy windows open, "participants of all types conclude the bandwagon is rolling and that they should be active in shaping the outcome" (p. 161). This is precisely what the S&T community does because as the MSF explains a successful lobbyist knows what is happening in the streams and what is required to survive. Adaptations of policy ideas are almost always necessary.

Pelosi states several times that while the bill is supposed to have recovery impacts in the short run by creating and maintaining jobs, targeting the recession, and allowing for tax relief, it is also going to make long run investments that will serve as a new foundation for the future U.S. economy (Krawzak & Clarke, 2009). She specifically mentions the role of science and energy investments included in the bill that are intended to assist in the transformation of the economy (Wolfe, 2009).

Actors in the S&T community note that the bill should really be two separate bills.

> *From an S&T strategy meeting*: This should be two bills in reality, one about recovery for stimulus right away and spending. And another for reinvestment, where research would be more appropriate. But since they are two bills Senators may lose sight of the fact that science is an investment for the future.

However, as a lobbyist for a scientific society commented, “they didn’t call it the American Stimulus Act for a reason”, so it is necessary for S&T to make both arguments in order to stay included in the bill.

Some members of Congress also agree separate bills will make more sense, one Senator insightfully comments, “I think the general rule is to do all you can when you can” (Clarke & Krawzak, 2009a). This is telling about how issues are molded to fit into the bill, and adds a bit of truthfulness to Republican criticism about the stimulus bill being more of an opportunity for the Democratic agenda then a pure stimulus bill. As one senior congressional staffer explains to me, the bill “turned into big Christmas tree.” He claims a lot of funding requests are not related to the economy and “should have gone through the regular appropriations process”.

Here is where the MSF can explain what was happening by relying on the Garbage Can Model. “[A]n organization is a collection of choices looking for problems, issues and feelings looking for decision situations in which they might be aired, solutions looking for issues to which they might be the answer, and decision makers looking for work” (Cohen et al, 1972, p. 2). The S&T community has many policy idea choices that are ready to be attached to a problem, and the ARRA is a perfect venue to air their pet solutions as the answer to recovering and reinvesting in the economy.

Another important concept the GCM puts forth is that decision opportunities and situations exist within organizations and the solutions that are present, ready, and feasible are likely to be chosen, not based on merit or appropriateness to the situation, but based on timing and organizational structure. In the case of the stimulus bill and S&T, it is already established that S&T is present and has a feasible solution. What they need to

work on is their arguments of readiness to get the funds out the door and put people to work.

Politics and tactics

It seems in every step of this bill there are procedural tactics and politics at play. For example, some of the 206 amendments that are proposed in the House are more symbolic than serious proposals made by members. Some want to get their policy positions on record and others want to get a floor vote on their long awaited policy goals. Either way it is never expected or intended that all amendments will get a shot for a floor vote, or make their way into the bill (Allen, 2009).

Some Republicans feel the bill will pass anyways and want to get their language in the bill, but do not intend to vote for it (Rubin, & Ota 2009). The following quote notes this strategy.

> *Political consultant:* The fact that everyone rolled over and let [NIH receive] $10 billion, [shows] there was a lot behind the scenes going on. We know a lot of Republicans support NIH…but can't visible support [the stimulus bill]. Besides, they knew it would pass, they knew [there was] enough votes to carry it. It's like basketball, doesn't matter by how many points you win by, and it's about winning. [It's like Republicans said], 'I care about this but not voting for it.

Another example is Georgia Senator Johnny Isakson, who offers an amendment that makes it into the Senate bill, even though he is against the bill from the start. His amendment is later dropped from the final version (Clarke, 2009c). These types of tactics are controversial, yet not uncommon, and allowable by the Congressional rules.

Republican resistance

Republican concerns are at the forefront of the stimulus debate. The ratio of tax cuts to spending is a contentious issue between the parties (Allen, 2009). It seemed clear from the beginning that the Republicans will be united in their opposition and are gearing

up for a fight. They resist Democratic spending proposals because they want to have more tax cuts and reduce spending (Clarke & Schatz 2009; Epstein 2009a)

This lack of bipartisanship had many explanations on both sides. “With such a huge emphasis on being bipartisan, it seems like it is putting more pressure to be partisan” (personal observation, January 27, 2009). For Republicans especially, the looming 2010 elections are a big motivator for a unanimous Republican opposition to spending billions of tax payers’ dollars in the stimulus bill. Distinguishing themselves from Democratic decisions is of great interest to Republicans because they then will be able to make claims of voting against the bill in hopes that the stimulus bill will not have much of an impact. This way they can potentially sway fiscally conservative voters to vote Republican in 2010 in order to gain more seats in Congress and reduce the power of the Democrats in both chambers.

However, polls show popular support for the stimulus bill. As a journalist for higher education comment in a meeting, “the Republicans are putting their political reputations on the line for the stimulus not to work”. By doing this, they are putting themselves in a risky position (Clarke & Krawzak, 2009b).

Concerns about the stimulus bill

The stimulus bill is seen differently by different people. From my interviews, some feel it was simply a catch all bill for a pent up Democratic agenda that does not surface during the Bush administration while others feel it is a necessary spending bill that will deliver enough impact to provide for recovery from the recession.

The concerns over the provisions in the bill essentially come down to judgment calls. MSF’s survival criteria are whether policy ideas will actually create jobs on the

short term. Not only are they supposed to create jobs, but they are supposed to only need temporary federal funding. Lawmakers do not want to "create unrealistic expectations for future spending programs" that will continue on and require additional funds down the road, like some of the New Deal programs did (Krawzak & Clarke, 2009b).

The cost of the bill is also a major concern due to its effect on the nation's deficit. Some question where the money will come from. An industry representative says in a meeting, "How do we pay for this? There are three things that can happen: taxes will increase; [we] could dodge [raising taxes] by inflation - the hidden tax; or we can borrow money [that] will not be available for the future (Krawzak, 2009).

There are also fears of misuse of funds or that the recipients will be unable to spend the money as quickly as expected (Schatz & Rubin, 2009). Adding to this speculation is a Congressional Budget office (CBO) report which states a lot of the funding will not be able to be spent until 2010 (Krawzak & Clarke 2009a; Krawzak & Clarke 2009b). To suppress these claims, Democrats state they had received assurances from the recipients that the money will be spent as quickly as possible (Krawzak & Clarke 2009a).

Recipients such as NSF, NIH, and DOE are good candidates to receive funding because of the speed they can spend the funds- meeting the survival criteria. The core of these agency's administrative missions is the evaluation of incoming project proposals and the efficient disbursement of funds. Therefore, they already have the infrastructure and experience that will allow for rapid disbursement (Tollefson, 2009).

In attempting to meet the survival criteria, stories are floating around that many Federal science agencies, such as NSF have a backlog of projects that have already been

reviewed and approved, but are not funded because of constraints in the budget, so essentially they have projects ready to go, people ready to be employed, all they need is the cash (Mervis, 2009b).

Criteria of survival do not have an obvious place in the IAD. It can show up within the information sets of actors, the values of actors in position in the action situation, or in the evaluative criteria after the decision is made. If we assume the criteria resides in the mental models created from actor information sets, the IAD leads us to assume S&T already meets some criteria due to S&T's history in Congress, and now it is a matter of overcoming obstacles to survive in the stimulus bill.

In the past, the action situation for S&T appropriations is always constrained by the size of the discretionary budget, a place where S&T usually misses out. In the past it is not that S&T is not considered an important value, it just is not valued as high to meet the final survival criteria to receive sufficient appropriations. In the stimulus bill, there is a somewhat unlimited budget which changes the structure of the action situation allowing S&T to successfully garner sufficient appropriations if the rest of the action situation is structured in their favor.

Actors

The tasks of S&T lobbyists are twofold at this point. They worked towards assembling their resources to educate their members of Congress as to the economic benefits of S&T. Not only are they advocating national benefits that will result from S&T funding, but also the local district benefits that will result for each member due to funding local construction and employing people at local universities and labs. At the same time, organizations continue to send out action alerts to motivate their memberships to contact

their individual congressional representatives, informing them of their desire for S&T to be funded in the ARRA.

MSF describes what is happening in the S&T community pretty perfectly, "advocates lie in wait in and around government with their solutions at hand, waiting for problems to float by to which they can attach their solutions, waiting for the development in the political stream they can use to their advantage" (Kingdon, 1995, p. 165). And they certainly do take advantage of the crisis.

In the IAD, Ostrom explains, "combining biophysical outcomes, external payoffs, and participants' interval valuation into one measure is useful for making decisions in a static setting" (2005, 43). This is also a good description of how things are playing out for S&T. With each of these elements, S&T is seen in a positive light as a feasible and valid solution in the stimulus bill.

Stakes rising

Because the bill's purpose is to respond to an urgent economic crisis, it is frequently framed by Obama, Pelosi, Obey and other members of Congress as getting worse with each day of inaction (Clarke & Krawzak, 2009c; Schatz & Clarke 2009a; Clarke, Schatz, & Krawzak 2009; Rubin, R. & Schatz 2009). Unemployment is getting worse, deficits are skyrocketing, and economic chaos lay in the wings. By February 6, the Labor Department reports 598,000 jobs were lost in the month of January alone (Rubin, Schatz, Krawzak & Clarke, 2009)

Congressional leaders felt prolonging passage of the bill or doing nothing is not a real option. Some lawmakers feel that the bill will be packaged in a way that will lead people to believe that their government is working correctly, and in turn lead to

confidence in the U.S economy on a global level, and therefore increase consumer spending (Ornstein, 2009).

Many do agree that the bill is not perfect (Clarke, 2009b; Epstein 2009e). Senator Amy Klobuchar says, “It’s not a perfect bill from my perspective, and I don’t agree with everything that’s in it and everything that came out, but literally we can’t afford to wait any longer to get something passed” (Rubin & Schatz, 2009).

Obama also comments, “let’s not make perfect the enemy of the essential”, suggesting that something is better than nothing (Clarke, Schatz & Krawzak, 2009). A report written by Mark Zandi, conservative economist and founder of Moody’s economy.com says, compared to doing nothing, the package will indeed create employment and aid in recovery by providing a boost to the economy (Krawzak & Clarke, 2009b).

This context serves as a powerful symbol to the public, members of Congress, and lobbyists. Symbols such as the economy getting worse with each day of inaction and global instability helps to reinforce that action is needed and is going to be taken by Congress, as interpreted by the MSF. With this information about the changes in the worsening biophysical attributes in the IAD, actors assume that Congress is going to pass a bill, regardless of the criticisms surrounding content, process, and partisanship.

Moving forward, based on the House draft of the stimulus, the S&T community seems to be in a good place and is able to meet the major survival criteria of the bill. Kingdon describes, the streams have aligned and the window of opportunity is open. Now it is a matter of surviving in the bill until the window closes and the bill passes.

CHAPTER 4

POLICY ENVIRONMENT AFTER THE SENATE DRAFT WAS RELEASED

Senate bill and ensuing panic

The action situation and streams change dramatically for the S&T community when the Senate releases their draft of the stimulus bill. Although S&T is included, the numbers are less generous compared to what the House passed. For example, where the House proposes $3 billion for NSF, the Senate only proposes $1.5 billion. After seeing the Senate numbers, the S&T community's mood changes, from a mood of thankfulness to assuming the worst. There are rumors that the House is angry at the Senate's S&T numbers, but the Senate says they do not know that initial House numbers would be so high (personal observation, February 4, 2009).

As a result, a change in strategy takes place within the S&T community. They go on the offensive and begin advocating aggressively in the Senate for an increase in funds to match the House numbers, as one lobbyist comments during an S&T strategy meeting. They particularly target Republicans in the Senate who do not fully understand the importance of S&T in the economy, whereas before they were targeting both parties, reinforcing their policy ideas with those who already believe it. Compounding their fears is the fact that not one Republican in the House votes for the bill. Even though the House didn't need any Republican votes, the Senate does. It needs every Democratic vote, as well as a couple of Republicans to pass the bill.

The S&T community then develops several one pagers to be circulated in the Senate targeting moderate and conservative Republicans, advocating the job creation

potential of investing in S&T with the goal of getting Senate Republicans to support a bill that includes S&T funding in the Senate version.

The community also realizes that the Democrats who are in the majority will likely have the final say of what is included in the bill and they do not want to lose sight of them. It is a conscious defensive effort to seek out how the Democrats feel about S&T and assess who will be there to protect the S&T funding in the final conference report.

Both frameworks explain this change in message and strategy. Kingdon explains that we know S&T satisfies some criteria because it is included in both bills, but two things make the Senate reduce the numbers for S&T. First S&T falls short somewhere in the Senate's criteria, and they receive smaller numbers. Another explanation is that the House's leadership values science higher than the Senate and it is not due to a short fall in the S&T community's message, relevance, or validity. It is simply a difference in values.

Regardless of why the numbers are lower, what the Senate numbers did was signal that the action situation was structured differently in the House and that actors need to adapt and evolve their message and strategies to account for this difference.

Therefore the IAD and MSF help us to understand the reason why ideas are forced to evolve and adapt as time passes in order to survive in conversations and therefore the bill. While the main idea of what S&T can do for the economy does not change, the underlying message of 'thanks for including us, we can definitely help the economy' changed to 'we deserve it and give us more…please'.

According to the IAD, actors change their direction due to the changes in information, which changes potential outcomes (getting less money), generating

interactions (aggressively targeting Republicans) which have intended outcomes (increases for S&T in the bill).

Proposed cuts and yet another change in strategy

The difference of the House and Senate numbers are soon to be the least of the S&T community's problems. Several turning points in the Senate threaten the inclusion of S&T funding. A scandal surfaces in time to embarrass and possibly impact the S&T community. The community is actually aware of this issue weeks before, but do not do much about it, as the quote below explains.

> *Personal notes from an S&T strategy meeting*: Apparently a story leaked about abuses of NSF employees who were using company computers to look at porn. [Members in the meeting] are afraid that this may burn their entire initiative. They really want to know what NSF is doing so that Senators don't get wind and chose not to support NSF. One person at the meeting said that 95% of funds to NSF go out the door, so it should be a big issue. Another said we have bigger fish to fry and not to worry about it.

Why they decided to ignore the possibility of the scandal leaking is not known , but a couple days later a Senator does catch wind of the story and in early February, Senator Chuck Grassley goes public with the information. He had obtained an Inspector General's report that finds NSF employees using agency resources to look at and share pornography. This scandal which is referred to as the "NSF porngate" threatened not only NSF in the stimulus bill, but all of S&T's reputation and future funding. Ultimately the scandal dissipates and NSF's funds are left intact when NSF agrees to comply with Senators Grassley's accountability stipulations.

After surviving that scandal, the S&T community is in for more bumps in the road. If ever there is a time the S&T funding is again very vulnerable to being seriously

removed from the bill, it is in early February when the Nelson-Collins amendment is released in the Senate.

> *Q:* Was there a point where you thought S&T would fall out of the bill?
> *S&T committee staffer:* There were several times but when the Senate turned out the Nelson-Collins compromise to get 60 votes, they severely cut out a large portion of science funding, some more than others. At that point, there were Senate advocates but it was more about trimming what they can to get more votes…[I was] uncertain what the Nelson-Collins amendment would come up with and was not optimistic at all that they would continue to support, [I know they were] not against science, but [it must have been about] what constitutes as stimulus and what doesn't.

This amendment is written and introduced by a bipartisan group of Senators, called the "gang of moderates" who develop a list of cuts to the Senate's version of H.R.1. These cuts are not a result of prioritization, but an attempt to trim back the bill in order to negotiate for more votes for the Senate bill (personal observation, February 2, 2009).

On February 5, the S&T community is alerted of specific cuts that are being proposed. The quote below shows how this unraveled.

> *Personal notes from daily observation:* There is a sense of panic right now. People in the sciences and academia a getting really worried about the science funding in the Senate… [As I was watching C-Span2 on my computer at work] I got this email simply called 'Fwd: cuts document' [with the message], 'this would be bad'.
>
> The document was basically a list of all proposed things that were going to be cut out from the stimulus bill, [which included a] 100% cut for NSF. There are no markings on the document. They did that so that if it did get leaked (which it did, organization X found a way to get a hold of it), it wouldn't be able to get back to whoever wrote it. The people who sent it are probably the "Gang of [moderates]" that is huddled in an office trying to compromise to get the three Republican votes. They wanted to see how most members feel about particular cuts to know what their negotiating power will be.

The MSF says that experienced lobbyists will know what this document means and what they need to do to influence and convince lawmakers that S&T is worthy of all

the originally proposed funds in the bill. An even more experienced lobbyist will know exactly who to contact and what to say.

This document sends the S&T community into hyper drive. It is unknown exactly who is part of this gang of moderates, but guesses are made and lobbyists are reaching out to any and all members of Congress asking them to not to allow cuts in S&T funding, leading to another change in their message. Survival is now the priority- not matching the Senate and House numbers. The message changes from increases to asking Senators to leave the numbers alone. A lobbyist at an S&T strategy meeting comments, "[we] don't want to try and raise the numbers when everyone is trying to get the overall number down".

Because the moderates seem to hold the cards on the Senate floor due to their voting power, Senate Majority Leader Harry Reid permits debate to continue and amendments to be offered until he is sure he will have at least 60 votes to pass the bill and avoid a Republican filibuster (Schatz & Clarke, 2009b). Reid eventually gets the assurance of a 60 vote passage of the bill after a compromise with the moderates is reached (Rubin, Schatz, Krawzak, & Clarke, 2009). By February 8, the Senate is ready to vote to invoke cloture, ending Senate debate on the bill- with S&T funds intact (Rubin & Schatz, 2009)

The Senate finally approves its amended version of the House bill on February 10, with three key Republican votes, 61-36. The Nelson-Collins compromise amendment essentially levels the playing field and sets the tone for the rest of the stimulus debate. This amendment is significant because it signals the weight that a few Senators have during the conference negotiations and final votes on the bill. Although S&T survived in

the Senate bill, as reflected in just about all my interviews, the community is never 100% sure it will stay in until the final bill is signed by the President.

> *Q:* Was there a point where you thought S&T would fall out?
> *Lobbyist for a scientific society*: It could have fallen out anywhere along the way. The big moment was if they would even consider it. Another was would the whole thing tank, not just S&T but the whole bill…They had to get 3 Republican players. The House had good numbers and the Senate had lower numbers for science. So in the conference everyone expected them to split difference. Out of conference, turns out that they didn't split the difference, and the numbers [for science] stayed close to the House numbers. That was a big surprise.

Conference negotiations

At this point in the story, lobbying is coming from all sides. Companies are encouraging employees to contact their delegations on company time. The White House, specifically Obama and Rahm Emmanuel, go to the Capital Hill to lobby Democratic Senators to vote in unison on the bill. Also, a S&T committee staffer comments to me that congressional committees chimed in to support provisions that are within their jurisdiction and Pelosi is encouraging members of Congress to "intensify the drumbeat across the country" to stimulate support for the bill among their constituencies before conference negotiations start (Roth, 2009; Rubin, Schatz, Krawzak, & Clarke, 2009).

Advice that is flowing through the S&T community is not to worry about the Senate or House numbers at this point, but to concentrate on the conference negotiations because as a senior congressional staffer suggests at an S&T strategy meeting, "things are going to be traded back and forth". They are also advised by the same staffer to start writing editorials in newspapers and get the word out publicly about S&T's abilities, as well as to start targeting federal agencies, such as the DOE, and help them communicate how they will spend the money quickly if they receive it.

The advice of forgetting the past and worrying about surviving in the next phase is very reminiscent of the MSF because it allows the analyst to move on and forget that the numbers in the Senate are lower. The next step of survival is the only relevant strategy moving forward.

The IAD is based on the idea that "somehow as individuals we implicitly make sense of … diverse and complex situations" (Ostrom, 2005, p. 4). Humans cognitively understand nuances of situations which in turn affect expectations of ourselves and other people. In this case, actors are able to sense a change and they change their behavior accordingly.

Conference report

When it comes to writing the conference report, it will be up to ten conference committee members, five from each chamber chosen by each chamber's leadership. The House conferees were: Appropriations Chairman David Obey, Ways and Means Chairman Charlie Rangel, Energy and Commerce Chairman Henry Waxman, Appropriations ranking member Jerry Lewis, and Ways and Means ranking member Dave Camp. Senate conferees were: Majority Leader Harry Reid, Finance Chairman Max Baucus, Appropriations Chairman Daniel Inouye, Finance ranking member Chuck Grassley, and Appropriations ranking member Thad Cochran.

The usual expectation is that once both House and Senate pass their versions of the bill, the conference committee will then negotiate in the middle (Schatz, 2009). However, that is not what happens because of the nature of votes needed to pass the bill in the Senate (Schatz, 2009). Pelosi even states that the conference bill will not be the usual "split the difference affair" (Rubin & Ota, 2009). The conference report is a chance

for the committee to insert or remove items to ensure votes in both chambers, especially in the Senate (Schatz, 2009).

The White House will have a lot of influence and will be very involved in the merging of the conference report (Clarke & Krawzak, 2009d). It is clear that it comes down to three Republican Senators, Susan Collins, Arlen Specter, and Olympia Snowe, who are part of the gang of moderates and pared down the initial Senate version of the stimulus bill. Although they are not officially on the conference committee, they are an essential part of the negotiation process because it is their votes that are needed to make at least 60 votes in the Senate.

These three Senators do not want to see any changes from the bill's total spending or any alterations to what they have amended during their previous negotiations. They make it clear if changes are made, their votes will be against the final bill, giving them essentially veto power (Schatz, 2009). "House Democrats grumbled…about their stimulus ideas being held hostage by a handful of Senate Republicans" (Pierce, 2009a). However this is the reality and the price Obama and Democrats will have to pay to see the bill signed into law (Pierce, 2009b)

Final bill

For the final bill to pass in both the House and Senate, every Democratic vote is needed. For instance, the Democrats are already down a Democratic vote due to Senator Kennedy's critical condition battling brain cancer. Therefore, when Democratic Senator Sherrod Brown's mother dies a day or two before the Senate is to vote on the final conference bill, he is flown out by the White House after the funeral to the Senate floor to cast his vote (Krawzak & Clarke, 2009c).

In the end Snowe, Collins, and Specter are the only three Republicans in both chambers who vote for the bill out of 219. It is said that Republicans are "absolutely gleeful at their self-perceived political victory when they were unanimous in opposition" against the bill (Ornstein, 2009). Without those three Republican votes, the bill will not have made it through the Senate and it will have stalled any stimulus deal from moving forward.

Obama signs the bill which includes significant appropriations for S&T on February 17, in Denver, Colorado. In his speech he says this bill's passage is a way of showing voters that he did come through on his campaign promises. The stimulus deadline set by Congressional leadership is met and action to save the U.S. economy is taken.

The final bill's provisions are said to be purely political, not pragmatic numbers (Clarke, Schatz & Krawzak, 2009). Interestingly, while many Republicans continued to publically condemn the bill, Collins and Specter report that some of their Republican colleagues came up to them after the vote and told them they are "glad to see this action taken without their fingerprints" (Krawzak & Clarke, 2009c). While not all of their colleagues are happy about the bill's passage, perhaps the concessions they specifically receive in the bill make splitting from their party worth it.

To illustrate why these three Republicans think it is worth it to go against their party, a user perspective using the IAD is considered. Looking at Senator Spector and his perspective of the action situation reveals his intentions and motivations. Spector is a cancer survivor and therefore is a longtime supporter of NIH. For many years he has been considered a champion for science in Congress. With his vote desperately needed to pass

the bill, it just so happens that the final bill he votes for included $10 billion for NIH - about $6 billion more than NIH had when the first House draft is released in early January. Also this is more than any other science agency receives in the bill, such as NSF who received about $3 billion.

Considering the action situation from this perspective, the most relevant variable seems to have been the cost-benefit of voting against his party. The result is very much leaning towards the benefits side of securing $10 billion for NIH in exchange for the cost of voting against his party. It is worth noting that later in 2009, Spector actually changes political parties and became a Democrat, this is evidence of Spector's vote being based on his values, not his parties ideology, and the fact that voting against his party was probably not that big of a cost for him.

The MSF describes the importance of having congressmen support policy ideas, such as what played out with Spector's vote. Kingdon explains advocates have a better chance of their policy idea's inclusion if a politician finds their idea's sponsorship convenient (1995, p. 172). From my observations, the community is aware of their active supporters, "champions of science" such as Spector and those who need more convincing.

The IAD describes when Congressional leaders really want to get something done they have the ability to make it happen- to a point. When there is a political majority, as was the case with the ARRA, for the most part, Congressional leaders control important procedural rules, decide on which actors are present in the writing and changing of legislation, such as the conference committee members, and the remaining structure of

the action situation can at times be manipulated in their favor. However, this is not an easy task, nor was it intended to be by the Founding Fathers.

MSF's idea of a window of opportunity is a perfect explanation of this. When leaders have the opportunity to control the right variables, to be able to manipulate the situation for their benefit, they will- but a lot of things need to be in place for this opportunity to happen. For the ARRA, Congressional leaders are uniquely able to manipulate the situation in order to realize their goals, which include funding for S&T, because of an open window.

If this bill had been introduced at any other time, it is likely that the people, pressures, and justifications may not have come together as they did in early 2009, and the ARRA would never have been passed. In the words of the MSF, the streams may not have joined and a window would not have opened to allow the ARRA to make its way through Congress, let alone with funds for S&T. At an earlier or later date, through the lens of the IAD, the action situation may not have been structured in a way to allow for the bill's passage or maybe even its existence.

CHAPTER 5

AFTER ARRA'S PASSAGE

Moving forward

Science is funded in the bill because of its historical ability to positively affect the economy, and the fact that federal agencies have plenty of research projects that would be ready for implementation. They have been neglected for so long that champions for science in Congress- as well as outside Congress, recognized the opportunity and decided to support science in the bill, and without major opposition, it survived.

Science now has the task of proving, in a very tangible way, that they are worth it. They still need to communicate and present to Congress and the general public concrete evidence of impacts the ARRA funds have on the economy.

It is interesting to note that looking back in history, using S&T as a solution to a national crisis is actually not that unusual. When S&T receives significant federal funding and congressional attention, it is the result of being seen as a solution to either a real crisis or perceived crisis. As a lobbyist for a scientific society puts it, in the U.S. science is usually a "beneficiary of crises". The quote below further explains this observation.

> *Lobbyist for a scientific society:* A reporter had asked me to compare [the money S&T received in the stimulus bill] to something, but I couldn't do it in terms of the money. It simply remains to be seen historically. Science has been the beneficiary of crises when it is seen as a solution. It wasn't Sputnik that spurred the science investments, it was the perceived threat and Eisenhower using science as a way to solve the threat and beat the Soviets. Like 9-11, Bush could have [either] said we are going to use science…to fight terrorists or we will go overseas and find Sadam Hussain – and we all know what Bush picked.

In the end the S&T community is critical for garnering funds in the stimulus bill, even if they didn't lobby for inclusion in the beginning. At a celebration event after the ARRA is passed, Speaker Pelosi who is being honored for her advocacy commented, "None of this would have been possible without the mobilization of the outside scientific community" (Mervis, 2009a, p. 24). It seemed once members of Congress are armed with constituent requests, national, and district benefits, job creation numbers, the stories of past successes, and consequences of past neglect, S&T funding turns into a rational solution for recovery and reinvestment for our future economy, despite all the bumps in the road in the political process.

Lessons learned

As a bill moves through Congress, its contents are always up for negotiation and are always vulnerable for removal at any point in the process. This is very much the case with the stimulus bill. When Obama meets with Republican leaders on January 27, in a bipartisan effort, Obama tells Republicans that the House version is "far from the final version" (Epstein & Ota, 2009). Meaning, even though the bill is agreed upon by a majority of members in the House, it is likely that the contents will be altered.

. Some in the House and Senate admit to passing the first versions of the bill even though they do not agree with its contents, simply to keep the process moving (Krawzak, 2009). For example, the House Blue Dog Coalition sent a letter to Pelosi stating that although they voted for the first draft of the bill, they are expecting to see a lot of changes to the final report in order for them to vote on its final passage (Ota, 2009). Moderates in the Senate also wanted to hear from Obama that the spending would be decreased while

in conference, instead of on the Senate floor (Schatz & Clarke 2009b; Schatz & Clarke, 2009c).

The unpredictability of the whole process is what can make or break some issues. The way an issue starts out in a piece of legislation, does not predict the way it will look in the end. In the case of NIH, they receive more than either chamber initially proposes when the bill comes of the conference committee.

Assessment of the frameworks

For a good understanding of policy making, frameworks should offer a set of tools and outlines which can at least "tell the observer what to look for… [and be able to] define the categories in which phenomena are to be grouped" (Sabatier, 2007, p. 4). Both frameworks offer such questions, structure, language and a visualization of the policy process.

The MSF and IAD emphasize observing and assessing actor characteristics because they affect if and how policies change. They both assume actors have the capacity to perceive the subtleties of each situation and act according to those differences. This is one of the strengths of both frameworks because they ask questions about actors to explain policy making behavior. The story of the S&T appropriations within the stimulus bill is a story about actors in and around government, with or without formal authority, strategizing to influence the contents on the bill.

They both do not intend for their frameworks to specifically predict outcomes. They acknowledge the process is quite complex and near to impossible to precisely predict. Instead they both aim to understand probabilities of possible outcomes as a more realistic approach to understanding an ever-evolving policy environment.

They are able to aid in the telling and structuring the story, as well as point to which variables contributed to higher probabilities of S&T's inclusion, such as: a feasible policy idea, an urgent problem pressing for government action, a history in Congress, leaders and those in formal authority willing to support S&T- or at least not oppose its inclusion-, and an active network of stable advocacy professionals.

They both look for inequalities and the history of experience within the policy communities which can affect incentives. While they place them in different areas of their frameworks, they both lead the analyst to characterize differences among those in the community, which is useful to develop assumptions about future behavior and community interpretations of events. In the case of the stimulus bill, this was useful in explaining why the community was not trying to lobby for stimulus funds until after they are already included in the bill.

One of the biggest differences between the two frameworks is their concern with the origin of an idea or policy. Kingdon focuses on what is happening at the moment and how that idea survives, not who or why an idea got to that place. Ostrom on the other hand, is very much interested in the origin of an idea. The IAD is designed to be able to track the history of an idea in order to get the most information about a situation as possible.

For this case study, how S&T is inserted in the first bill is unclear, but the summary of its history is telling about its acceptability in the minds of Congress. However, it may not be very fruitful to track down who inserted it and why S&T was originally included in the bill. For Kingdon, the only important thing is that it is there and what actors are going to do to keep it there.

Another difference between the two is the perspective that they are both developed from. The research that led to the development of the MSF is based on case studies in Congress, specifically tracking federal legislation over a span of four years. So Kingdon's framework draws from a similar political environment as seen in this case study. Ostrom's work stems from her interest in common pool resources and how people in the communities are managed by institution and rules. She is also very much interested in implementation and interpretation of rules and actions, searching for a way to improve the condition of people and society's welfare.

For this case study, the MSF guides the analysis through the Congressional policy process, making the MSF seem more applicable to this case study, but does not discount the IAD. The IAD is simply more difficult to apply because of some ambiguities of variables that are not obviously relevant to Congress and making legislation. A brief assessment of strength and weakness will explain this a bit further.

Strength and weaknesses of the IAD

The basic unit of analysis, the action situation, is a key strength for the IAD, as well as the ability to tailor the level of detail to different cases in a macro and micro perspective. For this case, the IAD allows an analyst to talk about specific action situations from the perceptive of any actor of interest. This is in contrast to the MSF, which is less specific about static decision situations and focuses more on the flow and movement of decisions in each stream.

The biggest weakness of the IAD is its complexity and definitions. Because a lot of the details are unknown, a lot of assumptions need to be made in an attempt to make implicit information about a situation be explicit in the analysis. Also a stable policy

environment makes this type of analysis easier. In the case of S&T policy, the IAD fell short because of the extreme unpredictability.

While Ostrom specifically designed this framework to be very detailed, it is not always intuitive, which makes application cumbersome and sometimes confusing. The IAD intends to create a common vocabulary and structure that can be applied to all policy making situations, but in doing this, it forces the analyst to learn new definitions and assumptions instead of intuitively using their own. Over time this is actually a strength of the IAD, because it can lead to more consistent inquiries across analyses. However, the learning curve is steep for a novice. Overtime, as familiarity grows, this framework will allow for the accumulation learning about the same phenomena across disciplines.

As Ostrom points out, her emphasis on the role of rules in policy making leaves a gap in the understanding of other equally important factors such community and biophysical characteristics. Further explanation of these elements is needed.

During the stimulus debate, the rules of each chamber definitely affect the structure of the action situations, controlling debates and amendments, but community norms also had a significant role of changing behavior and affecting the policy outcome. Had the S&T community not been ready to mobilize, adapt, and provide information to Congress, they may not have stayed in the bill.

When an institution involves volatility, a variety of competing goals, and countless actors in and around the institution, the structure of the IAD can lead to a very problematic analysis. Most of Ostrom's work deals with institutional statements, their intentions and outcomes, as well as property rights and common pool resources, which seem to have different boundaries and dynamics at play then in highly political and

unpredictable S&T policy institutions, such as Congress. Perhaps given more time, the IAD will be tested in highly irregular political settings to allow for more elucidation of how the IAD is applied to government institutions that have such a diverse set of actors and conflicting intentions and goals.

The IAD can help lead to assumptions about the probability of what is next on the agenda. In terms of broadly predicting policy choices, as extrapolated from my study, IAD is very complex and can assess the wide range of issues floating around at the time. This may lead to an irrelevant investigation because it may not be known who will be an actor in the action situation of the future. Instead, for this case study, the IAD was helpful as an additional to the MSF in providing structure, questions, and vocabulary.

Strength and weaknesses of the MSF

The MSF is less formal when applying it to the story of the stimulus bill. The flexibility of the framework allows for more intuition and customization to the case at hand and allows for the environment to be quite unstable. Actually this seems to be a great strength of the MSF.

The MSF is set up in loosely coupled stream so organizing information into three distinct streams is an intuitive process due to the distinct differences he describes in each stream. However, this flexibility may be a weakness because inconsistent applications and interpretations across fields and case studies may develop. Kingdon asserts that the policy process is too fluid and ever-changing to fit into one concept, theory, or model, so this flexibility is what he intended.

Another strength of using MSF for my case is the fact that Kingdon perform similar case studies, but on a greater empirical scale. Although all of my data was all

qualitative, I am able to use his case studies as examples to learn from, and to guide me through his framework, unlike the IAD. The MSF helps to explain how the stimulus bill gets on the agenda, as well as it to shows how the streams merged to allow S&T to be a serious alternative in the final bill. This framework articulated elements well enough to observe them in my case. As he mentioned, there are no particular elements that must exist, but there are particular streams and momentums that need to take place in order to have higher probabilities of a policy adoption.

Kingdon (1995) puts the responsibility of joining the three streams on the policy entrepreneurs. He describes them as "surfers waiting for the big wave" (p. 225). This process becomes clear in the stimulus bill because the S&T community does, in a sense, ride the wave started by the House draft numbers. This is an opportunistic framework that puts the power in organized people, rather than in powerful politicians and government officials. The story of the stimulus and S&T is definitely a story about the S&T community adapting their proposal for survival in the form of congressional appropriations.

One of the major criticisms of the MSF is that it does not present a testable hypothesis (Sabatier, 2007). Concerns about the ability to empirically test a hypothesis resulting from this framework is also a common weakness of any qualitative case study approach. Another criticism comes from the structure of the MSF and its independent streams. Some scholars feel that these streams are actually interdependent, and policies are not always developed in the policy community and sometimes solutions to problems get matched in the absence of an open window (Sabatier, 2007). In this respect, using my case as an example, I feel that thinking of the streams as independent is useful and

actually a strength. Not only for organization and making sense of a complex world, but in pushing an analyst to ask questions they would not have otherwise asked if we had assumed the streams are not separate and directly affected another.

Both frameworks are helpful in collecting information, asking questions, and forming assumption about the process. Together they allow for the organization of a large amount of information to make some sense of the complex world of federal policy making. While they differ in the ways, they approach understanding the case, in the end, a combination of both of them strengthen the analysis.

The search for understanding policy processes is a search for relationships, linkages, hypothesis, and a way to aggregate information across fields about the same phenomena. Combining these two frameworks seems to bring us one step closer to at least developing a way to accumulate knowledge and express relevant variables which influence the policy making processes.

Conclusion

As political theory emerges from its nascent stages in the 21st century, combining frameworks allows for broader understating of process in policy making. While the two frameworks have a different utility for this case, have different languages, structures, and foundations, they share a similar basic assumption about policy making. Actors with resources and authority (formal or informal) have control over policy outcomes when they can accurately observe and interpret changes in social attributes and political factors related to the current policy environment.

One reason these two frameworks have different utilities may be due to the volatile nature of the S&T policy environment. As history shows, there is soft bipartisan

support for S&T in Congress, but it is almost always a runner up when it comes time for serious financial support. This can most noticeably be seen in the lack of funds resulting from the COMPETES Act. However, even though S&T is vulnerable to a lot of talk and no action, it can also fall on the other side of the spectrum and win big in unexpected ways, as we saw in the ARRA.

In addition to the unpredictability of garnering Federal funds every year, S&T communities have a small constituency making them vulnerable in the big scheme of things. Therefore, S&T has to be especially strategic about their mobilization efforts and messages to Congress. This means that observing the current policy environment in and around Congress is quite crucial in order to appropriately assess their chances of inclusion.

These characteristics of science policy- volatility, vulnerability, and runner up status are what lent themselves so well to being applied to the MSF. The MSF is about assessing probabilities and perceiving a variety of unforeseen variables which change overtime in order to form a bigger picture about winning and losing. This is very telling about the scope of MSF because while it may not be very useful when applied to issues such as Medicare policy which is quite stable and not likely to change drastically year to year, it illuminates important unique variables that can make it or break it for unstable, somewhat expendable policy issues like S&T.

Conversely, the instability of S&T is what led the IAD to be a less fruitful framework. The IAD was deigned to assess relatively predictable, constant, and established policy processes in domains with quite different dynamics than S&T policy. Although the IAD is about observing and explaining policy environments, when that

environment is so uncertain, unstable and responding to a variety of different factors overtime, its usefulness and explanatory capacity is diminished.

In the end, the MSF leads us to conclude the success of S&T was due to their skill at monitoring the policy environment and being able to take advantage of the open policy window. The S&T community argued successfully that if given funds in the ARRA, they could indeed accomplish the main goals set forth by the bill- having projects and programs ready to go, spending the money right away, and employing people immediately. This was an argument not all policy communities could make. The makeup of the S&T community was also critical to their success. They are well connected, communicated quickly, and mobilized rapidly to make things happen to survive in the bill. Essentially, S&T correctly adapted their narrative and had the policy tools as well as a stable network to back it up just in time to make it through the policy window.

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