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SUBSYSTEM CONTEXTS AND POLICY INFORMATION: CONDITIONAL EFFECTS ON INFORMATION IN CONGRESSIONAL HEARINGS

A DISSERTATION APPROVED FOR THE
DEPARTMENT OF POLITICAL SCIENCE

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Abstract

While flows of policy information and the quest to acquire this information are generally accepted as important to the policymaking process (Krehbiel 1991; Sabatier and Jenkins-Smith 1993; Baumgartner and Jones 1993; Jones and Baumgartner 2005), the means by which this policy information is actually acquired by decision-makers has been relatively understudied in policy literature, to date. Within Congress, the hearing process provides an optimal opportunity for relevant policy information to be gathered and put on display. Yet, very little is known about the factors that drive policymakers to choose particular witnesses to testify at congressional hearings, and, in general, the purposes for which the congressional hearing process is utilized.

Utilizing my theory of information collection and display decisions, I attempt to answer the following general research question: *what factors affect how congressional committees decide to utilize the congressional hearing process to collect and display information presented by witnesses?* More specifically, I seek to understand the conditions that drive how subsystem contexts affect congressional policy makers' use of information collection and display strategies in each of the stages of the congressional hearing process including the selection of witnesses to testify at hearings, the presentation of information by the chosen witnesses, and the questioning of witnesses during the hearings.

Using original data collected from content analyses of committee member opening statements and witness testimony given during hearings in the policy areas of tobacco, biotechnology, and climate change, I study the institutional and political factors that determine the tone of testimony presented in congressional hearings. I find

that the degree to which certain factors affect the tone of congressional testimony is affected by the issue area that the hearing is examining and in issues with multiple dimensions, the dimension of the issue being examined. When holding hearings on distributive issues that are likely to unite committee members, members of committees that are predisposed toward consensual politics will utilize the hearing process to collect and display information that bolsters the overall bias of the committee venue holding the hearing. When holding hearings on partisan issues that are likely to divide members of different parties within a committee venue, committee chairs utilize the hearing process to collect and display information that bolsters their own positions on the issue at hand. Finally, when holding hearings on new and technical issues that are likely to heighten uncertainty amongst members concerning the proper action to take on the issue, committees utilize the hearing process to collect expert and relatively neutral testimony that will help to reduce uncertainty amongst members on the proper policy actions to take.

Chapter 1. Introduction: The Importance of Studying Information Collection and Display Decisions in Congressional Hearings

Introduction

Past scholarly attempts to explain policymaking within Congress have placed great importance on the quest for policy information and the methods by which this information is processed and utilized by relevant actors in explaining many facets of the policymaking process within Congress (Krehbiel 1991; Sabatier and Jenkins-Smith 1993; Baumgartner and Jones 1993; Jones and Baumgartner 2005). First of all, institutional informational theorists argue that in order to achieve the goal of good public policy (Fenno 1974), Congress is organized in order to allow for policy experts to inform the floor about the potential effects of policies so that good public policy can be created (Krehbiel 1991; Jones 1994, 151). Furthermore, scholars of public policy change attribute changes in public policies to changes in how a particular policy issue is framed in information presented at congressional hearings (Baumgartner and Jones 1991, 1993; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993) and how policy actors process this information using internal cues (Sabatier and Jenkins-Smith 1993).

Yet, while flows of policy information and the quest to acquire this information are generally accepted as important to the policymaking process, the means by which this policy information is actually acquired by decision makers has been relatively understudied in policy literature, to date. Within Congress, the congressional hearing process likely provides one of the best opportunities for relevant policy information to be gathered and put on display. More specifically, congressional hearings provide a

forum by which relevant stakeholders and experts within a policy issue area can present relevant information on a policy issue and by which congressmen, in turn, can directly question these witnesses to determine the quality and validity of the information they present.

Unfortunately, different groups with a stake in the policy issue have an incentive to produce a wide variety of informational signals to policymakers, and thus, policymakers must choose from a nearly infinite body of information when choosing what information will be gathered and put on display in congressional hearings (Simon 1983). Furthermore, due to the fact that congressmen have many lawmaking (Hall 1987) and constituent-oriented responsibilities (Fenno 1978), congressional committee members can only devote a limited amount of time to conducting congressional hearings, and thus, must make difficult decisions as to what information to consider in these hearings and which information to ignore. In such an information-rich environment, where policy actors are subject to certain "time and computational constraints", it becomes necessary to utilize certain strategies to effectively make decisions on which information to gather and put on display in congressional hearings (Simon 1983; Sabatier and Jenkins-Smith 1993; Baumgartner and Jones 1993; Jones and Baumgartner 2005; Krutz 2005).

Policy actors act within issue-specific subsystems whose qualities constrain the type of strategies they can realistically pursue when making policy decisions within these subsystems. In policy literature today, a wide variety of subsystem types have been offered that could potentially affect how information is dealt with within subsystems. These subsystem types include *unified subsystems*, where policymaking is

characterized by agreement amongst policy actors within the subsystem on how policy should be formed within the issue area, *competitive subsystems*, where policymaking is characterized by a competition for influence amongst members of the subsystem belonging to issue-specific coalitions, and *specialized subsystems*, where policymaking is characterized by a quest amongst members of the subsystem to become experts on a policy issue and make the most informed policy decisions possible. It is my contention that the type of subsystem that a congressional committee operates within is conditional on the issue that a subsystem is seeking to address and the political characteristics of actors within the subsystem.

In light of the lack of systematic consideration of the forces driving information collection and display in congressional hearings, the following research question is worthy of examination: *what factors affect how congressional committees decide to utilize the congressional hearing process to collect and display information presented by witnesses?* More specifically, *how and under what conditions do subsystem contexts affect congressional policy makers' use of information collection and display strategies in each of the stages of the congressional hearing process including the selection of witnesses to testify at hearings, the presentation of information by the chosen witnesses, and the questioning of witnesses during the hearings?* In this chapter, I will describe the need for research designed to explain the process by which congressional committee members collect and display information during congressional hearings and how this process is impacted by the subsystem arrangements that characterize policymaking within congressional committees.

The Importance of Information and Congressional Hearings

As stated earlier, the importance of information to many different facets of the congressional policymaking process is fairly well established (Krehbiel 1991; Baumgartner and Jones 1993; Sabatier and Jenkins-Smith 1993; Jones and Baumgartner 2005). First, the quest for quality information has been argued to lead to the development of legislative rules and procedures that provide incentives for legislators to cultivate policy expertise in particular policy areas and to share this expertise with fellow legislators (Krehbiel 1991, 5). Furthermore, the tone of policy information has been argued to determine what types of policy will be produced concerning a particular issue area with policy changes occurring when the preponderance of the information presented about an issue shifts in valence in the opposite direction from the direction of information presented in the past (i.e. from negative to positive) (Baumgartner and Jones 1991, 1993; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Jones and Baumgartner 2005; Workman, Jones, and Jochim 2009). Finally, although the belief systems of policy actors will usually cause them to discard information that conflicts with their beliefs, researchers have also argued that under certain circumstances, the revelation of new information can bring about a process of learning that can lead policy actors to advocate for different policies than in the past (Sabatier and Jenkins-Smith 1993; Sabatier and Weible 2007).

Yet, while information is generally regarded as important to the congressional policymaking process, the means by which information is actually collected by policy actors has been relatively understudied by researchers, to date. Among the methods by which information can be collected by congressional policymakers, the congressional

hearing process likely provides one of the most important opportunities for relevant policy information to be gathered and put on display for other actors involved in the policy process. Congressional hearings afford congressional policymakers with the opportunity to call almost anyone they choose to testify before them and extract information out of these witnesses that is relevant to the policymaking process. Those invited to testify at hearings will typically view the invitation to testify with excitement and voluntarily choose to appear at these hearings, as the hearing presents an opportunity to express their views and expertise on an issue to policymakers and the public (Palmer 2007). However, even when individuals are reluctant to testify at hearings, congressional committees and subcommittees can require individuals to appear before them by issuing subpoenas to those who refuse to testify (Palmer 2007).

Additionally, there are no formal rules on who can be invited to testify at these hearings. Congressional committees and subcommittees can call the main experts in the policy area, those representing all of the reasonable viewpoints in the area, or can even stack the hearing in a way where only those representing a particular point of view in the debate on the issue will be invited to testify (Palmer 2007). When the witnesses arrive to testify before these congressional committees and subcommittees, through the question and answer period of the hearing process, congressional committee and subcommittee members can seek clarification on arguments or information presented by witnesses during the hearing, assist in bolstering the arguments made by those called to testify, or call into question the validity of arguments made by witnesses (Palmer 2007).Thus, through the congressional hearing process, congressional committees are

afforded the institutional power to collect information from virtually any individual actor they so choose.

Furthermore, congressional hearings also afford congressional committees and subcommittees the opportunity to display information they have gathered to a wide variety of individuals. Although congressional committees and subcommittees can close their hearings off to the public, most congressional hearings are open affairs that can be viewed by the public, as well as other important actors in the policy process (Palmer 2007).Some of the hearings are televised, as they take place, on the C-SPAN cable outlets (Hallowell 2008). However, after a hearing takes place, congressional committees and subcommittees will normally print written transcripts of the content of the hearings, unless extenuating circumstances make it necessary for them not to do so (Palmer 2007). Clearly, other members of Congress do pay attention to these hearings, as simply holding a hearing on an issue has been found to demonstrate to the floor that a committee believes that an issue is important (Burstein and Hirsch 2007, 179; Oleszek 1989; Diermeier and Feddersen, 2000; Edwards and Wood 1999; Edwards, Barrett, and Peake 1997) or that there are enough significant problems with a piece of legislation that it should not be passed (Brasher 2006). Furthermore, members outside the committee do appear to believe in the ability of congressional hearings to display information to a wider audience, as they themselves testify at these hearings (Kingdon 1984; Gormley 1998; Mattei 1998; Burstein and Hirsch 2007). A communications study found that, other than coverage of congressional campaigns, media coverage of congressional hearings make up 85% of all media coverage of Congress (Gandy 1982).

Finally, Congress as an institution places a great deal of importance on collection and display of information in congressional hearings, as the institution spends a great deal of time on the activity. Between 1989-2004, Congress conducted, on average, 11 congressional hearings per day on a wide variety of topics[1]. In fact, the organization of Congress, as a whole, conducts so many congressional hearings that typical congressman often cannot even feasibly attend all hearings hosted by each of the committees and subcommittees he or she is a member of, because many of these hearings must be run at the same time (Hall 1987). Of course, the process of holding hearings is very costly in time and money. For instance, congressional hearings require the organization of Congress to hire and pay congressional staff members to conduct extensive research on the topics being discussed at the hearing, including interviewing those testifying at hearings prior to the hearing taking place (Oleszek 1989, 98). Furthermore, the process of conducting congressional hearings takes time away from congressional policy makers that could be used to produce more legislation on issues important to citizens or to provide services to constituents that may be of utmost importance in whether these constituents decide to reelect said congressman. Thus, clearly Congress, as an institution, places a great deal of importance on the act of gathering information in congressional hearings, as they conduct a large amount of hearings and devote a great deal of time and resources that could be utilized on other

[1] Information on the number of hearings per Congress was collected from Baumgartner and Jones's *Policy Agenda Project* website, which can be found here: http://www.policyagendas.org .

Information on the number of days Congress was in session that was used to calculate the average number of hearings per day that Congress was in session can be found at the *Library of Congress* website here: http://thomas.loc.gov/home/ds/ .

important activities in order to conduct said hearings. Yet, while it is clear that congressional hearings could potentially be a powerful tool through which congressional committees and subcommittees can collect and display information, existing research on the topic of congressional hearings has strayed from analyzing how congressional policymakers choose the tone and types of information to collect and display in these hearings.

Controversy over the Purpose of Hearings

While congressional hearings clearly have the potential to be used as important tools in the policymaking process, past studies on their use have largely arrived at divergent conclusions on how the process is actually utilized by congressional committee members to collect and display information. Ideally, most Americans would like to think that congressional committee members utilize the hearing process to call witnesses that will genuinely assist members in making the policy decisions that will provide the greatest benefit for society. Informational theorists have long argued that Congress is organized into different congressional committees in order to allow for policy experts to inform the floor about the potential effects of policies so that good public policy can be created (Gilligan and Krehbiel 1987, 1989, 1990; Krehbiel 1991). More specifically, informational theorists argue that the outcomes of particular policies are uncertain. This uncertainty poses a difficulty for legislators who prefer to choose policies where the outcome is certain. Certainty of outcomes allows legislators to plan to take credit for policies that they know will succeed and avoid embarrassment in voting for policies with harmful outcomes for their constituencies (Krehbiel 1991, 62).

Thus, individual legislators value expertise on the outcomes of policies because it increases the certainty of the outcomes of policies in that experts in a policy area are more knowledgeable about the effects of a policy than the Congress as a whole (Krehbiel 1991, 62).

Informational theorists further argue that legislative rules and procedures will be developed that provide incentives for legislators to cultivate policy expertise and specialization in particular policy areas and to share this expertise with fellow legislators (Gilligan and Krehbiel 1987, 1989, 1990; Krehbiel 1991). In order to test this proposition, most past informational theorists have used tests of whether a committee is representative of the floor in terms of ideological voting scores to determine the validity of the informational perspective (Krehbiel 1990, 1991). However, testing whether or not committees are predominantly representative of the floor and not homogeneous seekers of benefits does not directly test whether congressional institutions are actually utilized to gather expert information that can be disseminated to the floor. More work must be done, including determining whether committees actually conscientiously use institutions with the committee structure (most notably committee hearings) to gather expert information about certain issue areas.

While informational theorists remain relatively agnostic on the subject, as Diermeier and Feddersen (2000) argue, the congressional hearing process likely provides the best opportunity for relevant policy information to be gathered in order for congressmen to gain a better understanding of a policy issue and pass this policy information to members of the floor. Nonetheless, systematic evidence on whether congressional hearings are actually utilized to inform the policy making process is quite

sparse. Furthermore, the evidence that does exist on the subject has been decidedly mixed. On the one hand, some theorists have found that hearings can have a powerful effect in gathering information on a particular issue. For instance, the content of certain bills has been affected by conflicts amongst those testifying in congressional hearings about framing of an issue (Burstein and Hirsch 2007, 179; Baumgartner and Jones 1993; Johnson 1995; Weeks et al. 1986). Furthermore, interest group testimony, about whether a particular bill was favorable or not, had an effect on whether the bill was actually adopted (Burstein and Hirsh 2007).

Finally, as Burstein and Hirsch (2007, 179) further note, anecdotal evidence also suggests that information presented at hearings powerfully affects congressional action in certain issue areas. For example, congressional hearing testimony about the Equal Pay Act of 1963 presented evidence that assisted advocates of gender equality in gaining backing for prohibiting sex discrimination in employment, under Title VII of the Civil Rights Act of 1964 (Burstein and Hirsch 2007, 179; Burstein 1998). Also, testimony presented at congressional hearings concerning hate crimes had a powerful influence on the content of hate crime legislation, as well as the likelihood that it would be enacted (Burstein and Hirsch 2007, 179; Jenness, 1999).

If congressional committee and subcommittee members utilize the hearing process to genuinely collect policy-relevant information, we naturally would expect that this information-seeking mindset would have a substantial effect on the types and tone of the testimony of witnesses selected to testify in front of particular committees and subcommittees. First of all, one would logically expect that committees would call the types of witnesses that are most likely to give the highest quality policy information:

non-partisan, non-ideological policy experts (i.e. academic researchers, think-tank researchers, etc.). Secondly, as Leyden (1995, 433) describes, one would also expect that committee and subcommittee chairs would instruct their staffs to seek out witnesses that are representative of the diverse set of viewpoints on an issue in order to provide as many different informational perspectives about a policy problem as possible.

In terms of the first expectation, as I will discuss later, congressional hearing researchers have given only sparse attention to the role that policy experts play in the congressional hearing process. As such, we really do not know whether congressional committees and subcommittees call large numbers of experts to testify at hearings. However, with respect to the second expectation, some researchers have uncovered evidence which suggests that congressional committees and subcommittees, under certain circumstances, call witnesses representing the wide spectrum of viewpoints on a particular issue. For instance, in a study of the roles/strategies of committee and subcommittee chairs in witness selection, DeGregorio (1992) finds that 74.4% of committee staff members interviewed made an effort to ensure that a wide range of beliefs were represented when selecting witnesses to testify at congressional hearings. According to DeGregorio (1992, 979-980), staff members seek to call witnesses from a balance of different perspectives for the following reasons: "(1) their chairman demands it; (2) the adversarial atmosphere requires the availability of political cover; (3) a sound decision process necessitates all the facts." Congressional committees and subcommittees also may seek to call witnesses with a wide cross-section of perspectives on an issue in order to avoid challenges to their decisions from floor members on the

grounds that the consequences of a policy have not been fully explored (Wright 1996, 42; McQuide 2007, 62).

Furthermore, in a study of the factors influencing the selection of lobbyists to testify at congressional hearings, Holyoke (2008) discovers that committees, like the agricultural committee, whose members are outliers in terms of their preferences on issues are likely to call interest groups lobbyists that disagree with the position of the committee on issues that are relatively less important to the committee and interest groups operating in that issue domain. Holyoke (2008), however, also finds that outlier committees are also more likely to call interest group lobbyists that agree with their position during hearings dealing with issues that are important to the committee and interest groups. Thus, outlier committees likely call witnesses that disagree with them to testify during hearings dealing with less important issues to build a credible reputation so their information can be trusted by the floor on more important issues (Holyoke 2008, 30-31). Nonetheless, it is still clear that, under certain circumstances, committees are concerned with calling witnesses that espouse a variety of different viewpoints to testify in congressional hearings.

With this said, many researchers argue that committee members do not select witnesses with a mind toward collecting the best possible information on a particular policy issue. At the extreme end of the spectrum, some theorists argue that congressional hearings serve no greater purpose than a “window-dressing” event or “propaganda channel” through which congressional committees and subcommittees can display carefully selected information to actors outside the committee (i.e. members on the floor, interest groups, the general public, etc.) in order to drum up support for

positions espoused by committee members and/or "claim credit" for providing policy benefits to constituents (Truman 1951; Berry 1984; Davidson and Oleszek 1985). According to this perspective, committee staff members choose witnesses with a mind toward selecting individuals that are likely to support committee leaders' positions on policy issues (Berry 1984). As Huitt (1954, 354) notes in a study of member behavior in the House Committee on Banking and Currency, "[e]ach group seemed to come into the hearings with a ready-made frame of reference. Facts which were compatible were fitted into it; facts which were not compatible even when elaborately documented, were discounted, not perceived, or ignored."

Furthermore, according to critics of the informational theory, committee members enter hearings with prepared questions and are typically confident of the content of the testimony to be received from key witnesses, because committee staff members have heavily vetted these witnesses in interviews held before the hearing takes place (Oleszek 1989). Finally, skeptics of the informational value of congressional hearings note that hearings are frequently only sparsely attended by committee members, which demonstrates that members themselves do not find much informational value in the testimony presented in from of congressional committees (Oleszek 2004). As such, according to these theorists, committee members generally do not gain any informational value from congressional hearings and do not tend to be persuaded by the information presented at such hearings.

While there is a degree of validity to evidence supporting the argument that congressional hearings are no more than "dog-and-pony shows", this argument suffers from a series of flaws. First of all, although it is true that many hearings are only

sparsely attended, this may not be an indication that committee members do not care about the information being presented in these hearings. Since hearings are often scheduled at the same time as other important congressional policymaking events (i.e. markup hearings, floor votes, hearings in other committees/subcommittees, etc.), committee members must often make decisions between attending a particular hearing and attending some other important event (Hall 1987). Thus, committee members may choose to not attend a hearing not because they do not appreciate the value of the information presented at the rather, but rather because they have a more important engagement that they must attend.

Furthermore, as Diermeier and Feddersen (2000, 52) argue, holding congressional hearings can be very costly activities. For instance, congressional hearings require congressional committees to hire and pay congressional staff members to conduct extensive research on the topics being discussed at the hearing, including interviewing those testifying at hearings prior to the hearing taking place (Oleszek 1989, 98). Congressional committees must also often pay for any expenses (i.e. travel, lodging, etc.) involved with ensuring that witnesses can appear at a committee hearing (LaForge 2010). Furthermore, the process of conducting congressional hearings takes time away from congressional policy makers that could be used on other policymaking activities (i.e. writing legislation, forging compromises on bills, providing services to constituents, attending other committee meetings, etc.) that may be of utmost importance in determining whether constituents will reelect committee members in subsequent elections (Diermeier and Feddersen 2000, 52).

Yet, despite these significant monetary and opportunity costs, congressional committees and subcommittees still spend significant portions of time conducting congressional hearings. According to the *Policy Agenda Project*, between 1989-2004, Congress conducted an average of 11 congressional hearings per day on a wide variety of policy topics[2]. Thus, clearly congressional committees and subcommittees place a great deal of importance on the act of gathering and displaying information in congressional hearings, as they conduct a large amount of hearings and devote a great deal of time and resources that could be utilized on other important activities in order to conduct these hearings.

Finally, as I will discuss later, a significant amount of evidence suggests that congressional committees and subcommittees sometimes stack witness lists with individuals who espouse a particular point of view in a policy debate. However, such evidence does not mean that the whole hearing process is only a "window dressing" event that has no higher meaning or purpose outside of a means to disseminate propaganda to support a particular viewpoint. For instance, congressional committees and subcommittees may stack hearing testimony and still be utilizing the process to establish expertise in a particular issue area to gain or retain jurisdictional control over legislation in the policy area (Jones, Baumgartner, and Talbert 1993; Talbert, Baumgartner, and Jones 1995; King 1997; Baumgartner, Jones, and MacLeod 2000).

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[2] Information on the number of hearings per Congress was collected from Baumgartner and Jones's *Policy Agenda Project* website, which can be found here: http://www.policyagendas.org .

Information on the number of days Congress was in session that was used to calculate the average number of hearings per day that Congress was in session can be found at the *Library of Congress* website here: http://thomas.loc.gov/home/ds/ .

Furthermore, even if a committee stacks hearing testimony to over-represent a particular viewpoint, it does necessarily mean that committee members do not gain any informational value out of the testimony presented. For example, although committees and subcommittees routinely call representatives of interest groups to testify with a mind toward selecting witnesses that will support the chair's position in a debate, committee staff also search for witnesses representing interest groups that have the organizational resources to provide costly political and policy information to congressional policymakers (Leyden 1995; McQuide 2007). Additionally, congressional committee members may stack hearing testimony, because they genuinely believe the witnesses they have selected will provide the most "accurate" information or will espouse the "correct" argument in a debate.

In light of the information above, it is not accurate to represent the hearing process as a "window dressing event" or a "dog and pony show" that has little to no meaning just because committees occasionally stack testimony at these hearings. Even within the community of scholars that have found evidence for stacking of witness testimony, most still acknowledge the utility of congressional hearings to the congressional policymaking process. For example, although punctuated equilibrium theorists find evidence of committees stacking testimony to fit particular viewpoints, they also find that changes in the tone of policy information presented in congressional hearings can produce policy changes when the preponderance of the information presented about an issue shifts in valence in the opposite direction from the direction of information presented in the past (i.e. from negative to positive) (Baumgartner and Jones 1991, 1993; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and

Talbert 1993; Jones and Baumgartner 2005; Workman, Jones, and Jochim 2009). Furthermore, although the belief systems of policy actors will usually cause committees members to discard witness testimony that conflicts with their beliefs, Advocacy Coalition Framework (ACF) scholars have also found that the revelation of new information can bring about a process of learning that leads policy actors to change their positions on policy issues (Sabatier and Jenkins-Smith 1993; Sabatier and Weible 2007).

Nonetheless, different scholars have found significant evidence suggesting that congressional committees do stack hearing lists to be consistent with particular points of view in a policy debate. However, a substantial degree of disagreement exists amongst hearing scholars on the factors that determine how the tone of witness testimony is stacked by committees and subcommittees in congressional hearings. On the one hand, punctuated equilibrium theorists argue that differences in the tone of information presented at congressional hearings will be determined by the perceived institutional bias of the committee holding the hearing. According to this perspective, before a policy issue makes its way to the floor, competing coalitions seek to influence the tone of the information presented about an issue in order to boil the issue down to a dimension that is most favorable to their viewpoint on the issue once the issue reaches the floor for debate (Jones 1994; Jones 2001; Talbert and Potoski 2002; Jones and Baumgartner 2005). Congressional committees play their part in the process by prioritizing information that is sympathetic to their respective favored sides in policy debates during congressional hearings (Baumgartner and Jones 1993; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993).

Committees that currently have control over a policy area and have an interest in maintaining the status quo conception of an issue will call witnesses to testify that will present testimony that is consistent with the status quo conception of the issue so that they can maintain control over policymaking in that issue area (Baumgartner and Jones 1993). Committees that are sympathetic venues to coalitions who disagree with the dominant image of a policy issue use the hearing process to reach out of their respective formal jurisdictions and compete for influence with committees who have traditionally held control over the image of an issue (Jones, Baumgartner and Talbert 1993; Talbert, Baumgartner and Jones 1995; King 1997; Baumgartner, Jones, and MacLeod 2000). These competitions for influence between committees allow for new perspectives to be heard on an issue, which eventually leads to the breakdown of dominant policy images and increases the likelihood that substantive policy change will occur (Hardin 1998; Baumgartner, Jones and MacLeod 2000; Sheingate 2006). However, this change is not immediate and takes significant changes in the tone of information about an issue over significant periods of time before a punctuation in the state of policy occurs (Jones and Baumgartner 2005).

In this conception of witness selection in congressional hearings, differences in the tone of testimony and the types of witnesses selected to testify at hearings will be apparent when comparing the witnesses selected at different committees. Each committee will select witnesses that fit their members' respective favored conceptions of the issue in order to influence how policy will be formed in that issue area. Past empirical evidence on the issue areas of pesticides, nuclear power, and tobacco policy have confirmed these expectations in demonstrating that particular congressional

committees tend to be biased in terms of the topics of congressional hearings and the types of witnesses called to testify at particular hearings (Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Worsham 2006).

For instance, in the case of tobacco policy, witnesses were selected to testify that fit the policy goals and biases of the committees holding the hearing. Since agricultural committees sought to protect the economic interests of tobacco farmers, members of the tobacco industry (i.e. tobacco farmers, tobacco manufactures, tobacco sellers, etc.) made up the vast majority of witnesses that were invited to testify in front of these committees while health experts and advocates that were likely to bring up the detrimental effects of tobacco use made up a very small percentage of the witnesses testifying (Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Worsham 2006). By contrast, the health committees in Congress, who members sought to expose the health effects of tobacco use, called large percentages of health experts and advocates to testify while calling significantly fewer representatives of the tobacco industry who would be most likely to bring up the economic benefits of tobacco products in their testimony (Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Worsham 2006).

While differences between committees in the types of witnesses called to testify in congressional hearings are the focus of punctuated equilibrium studies, the effects of differences in the characteristics of the leaders of committees on witness selection in congressional hearings are largely downplayed in such studies. In particular, according to punctuated equilibrium theorists, the beliefs and partisanship of those with control over a committee do not play a large role in determining the types of witnesses that

testify in hearings or policy changes in a particular policy area. For instance, policy changes and changes in the tone of information presented in front of congressional committees were found to be related with partisan changes in only one of the seven issues studied by Baumgartner and Jones (1993): urban policy. Sharp punctuations in other issue areas like nuclear energy, pesticides, and child abuse were related to factors unrelated to changes in the parties and belief systems of those controlling particular committees. Furthermore, Jones and Baumgartner (2005) found that about ½ of all major public laws between 1946-1997 were enacted after the first session of Congress, which is a long time period away from elections that could potentially change partisanship.

On the other hand, many researchers of witness selection strategies in congressional hearings emphasize the importance of the characteristics of leaders of committees to the process of determining the types of witnesses testifying in hearings. Proponents of this line of thinking subscribe to a vision of congressional committees where competing coalitions with vastly different beliefs concerning an issue fight for control over the policy issue within a particular committee (Sabatier and Jenkins-Smith 1993; Sabatier and Weible 2007). Due to time and computation constraints and the fact that there are nearly limitless sources of information in a particular issue, members of these coalitions must use their respective belief systems to determine what types of information to collect and how to process the acceptability of different types of information (Simon 1983; Sabatier and Jenkins-Smith 1993, 1999; Sabatier and Weible 2007). According to Advocacy Coalition Framework (ACF) theorists, the main

proponents of this viewpoint on information processing and collection, policy actors hold the following types of beliefs (Sabatier and Weible 2007, 194-196):

- **Deep core beliefs –** very general normative assumptions about human nature and the role of government in providing for the public good that span across all policy issues
- **Policy core beliefs –** more specific normative assumptions concerning an entire policy issue
- **Secondary beliefs –** very specific assumptions about single policy issues that are not considered to encapsulate an entire policy issue

ACF theorists argue that deep core and policy core beliefs are very difficult to change even through technical and scientific information from respected sources (Sabatier and Weible 2007, 198). Thus, when information comes in conflict with deep core or policy core beliefs, policy actors tend to discount the information and label those that deliver the information as belonging to the opposing coalition in the issue (Sabatier and Weible 2007, 194).

Significant evidence demonstrates that deep core beliefs have a significant impact on whether or not individuals accept information from scientific experts as being true (Liftin 2000; Sabatier and Jenkins-Smith 1993; Rothman and Lichter 1987). For instance, in the policy subsystem of nuclear energy production, there is a general consensus amongst scientific experts that the potential risk involved in expanding nuclear power capabilities in the United States is relatively small (Rothman and Lichter 1987). Yet, despite being exposed to this clear consensus amongst scientific experts, reporters and non-scientific expert elites tend to respond to their ideologies in assessing

the safety of nuclear technologies with more liberal individuals considering nuclear technology to be unsafe (Rothman and Lichter 1987). Furthermore, despite being exposed to the same information concerning the issue of environmental policy at Lake Tahoe, environmental groups who were predisposed to support information arguing that water quality was a problem in the region and incorporate it into their decision making processes while business and property rights groups were more reluctant to support the same information (Sabatier and Jenkins-Smith 1993).

With respect to the specific case of information collection and display strategies when selecting witnesses to testify at congressional hearings, many researchers have found a degree of evidence that congressional committee chairs are affected by their belief systems and personal biases when selecting witnesses. These researchers have generally found that staff members will seek out witnesses to testify who fit the predisposed viewpoints of the chair of the committee and stack the witness list with witnesses who will present testimony that fits the predisposed viewpoints of the chair of the committee (Hinckley 1971; Leyden 1995; DeGregorio 1992, 1998) For instance, through interviews with committee staff members, Leyden (1995, 434) finds that staff members will sometimes be instructed by the chair to search for witnesses that can assist in "selling" a chair's point of view to the general public and other legislators. Furthermore, although finding that committee staffs generally try to balance perspectives in selecting witness testimony, DeGregorio (1992, 979) also finds that a sizable portion of committee staff members interviewed do not make a deliberate attempt to hear from a range of views in testimony and actually see the hearing process as a "time to sell" the committee's chairs beliefs to other congressional policymakers.

Finally, as stated earlier, Holyoke (2008) discovers that committees, like the agricultural committee, whose members are outliers in terms of their preferences on issues are likely to call interest group lobbyists that agree with their position during hearings dealing with issues that are important to the committee and interest groups.

As the proceeding section clearly demonstrates, researchers studying witness selection in congressional hearings have arrived at very different conclusions concerning the factors that drive information collection strategies. Each of the different sides in the debate has arrived at their respective conclusions through systematic analysis of congressional hearings. Yet, the conclusions reached by these different types of researchers as to how congressional committee members determine which witnesses to select at congressional hearings have been wildly different. How can several different researchers conducting systematic studies arrive at such different conclusions concerning the factors influencing witness selection in congressional hearings?

In all likelihood, each of the different theoretical perspectives for understanding witness selection strategies in congressional hearings contains a degree of validity. The key to truly understanding the witness selection process in Congress is to uncover the factors and conditions that determine when one set of factors will take precedence over other sets of factors in driving witness selection decisions. Unfortunately, most researchers have not tried to apply a conditional theory to explaining congressional committees' witness selection and information collection and display strategies. Researchers have used conditional theories in attempting to explain congressional committee organization (Hall and Grofman 1990; Maltzman 1998) and the factors that influence policymaking in the policy subsystems within which congressional

committees operate (McCool 1998; Worsham 1998; Weible 2008). For instance, in the case of congressional committee organization, Maltzman (1998) argues that the way congressional committees operate and the factors that will motivate their decisions are dependent on the salience of the issues being addressed by a committee, the strength of loyalty toward political parties within the committee, and institutional factors like the capacity of members outside the committee to monitor the action of committee members.

In terms of the factors influencing how policies are formed within policy subsystems, scholars have argued that policy subsystem politics are influenced by factors like the characteristics (i.e. conflictual or consensual nature) of the issue being addressed by the subsystem, the diversity of beliefs amongst actors within the subsystem, and the availability of benefits to be distributed amongst interested parties within the subsystem (McCool 1998; Worsham 1998; Weible 2008). The types of interactions that occur amongst policy actors within different types of subsystems has been argued to affect many different policymaking activities including the ability of policy actors to control what legislative items make it on the governmental agenda (Worsham 1998) and the ways in which policy actors use information in policymaking activities (Weible 2008). For example, Weible (2008) argues that policy actors are most likely to use information for the purpose of making a political point in subsystems where there is a high degree of conflict between different groups of actors within the subsystem.

Unfortunately, scholars have not attempted to test or apply conditional theories of subsystem politics and congressional organization to congressional hearing witness

selection politics. In particular, both sets of literature suffer from a series of flaws with respect to their application to congressional hearing politics. In the case of congressional organization literature, conditional theories of committee organization focus exclusively on the conditions that lead to different types of congressional organization without realizing the intimate relationship that committee organization has with the subsystem context within which it operates. Furthermore, current committee organization literature also does not consider the implications that different committee organization/subsystem contexts have on different stages of policy creation, including information collection. In the case of public policy literature, conditional theories of subsystem types do not consider the importance that mediating institutions, like political parties, play in subsystem politics. Additionally, as of yet, these conditional theories of subsystem effects on information production and utilization remain untested in empirical reality. This project intends to fill the gaps in congressional hearing and policy information literatures by demonstrating the conditional nature of information collection and display strategies through empirical tests of the factors that influence the tone and types of testimony and how these factors change in different issue areas. As I will argue and demonstrate empirically in subsequent chapters, the subsystem/committee context and its effect on information collection and display in congressional hearings will ultimately be determined by two sets of conditions: the issue context and the characteristics of actors within the policy subsystem.

Current Research's Focus on Interest Group Witnesses

As stated earlier, congressional hearings are relatively understudied institutions in current political research. Of the research done on congressional hearings, a large portion focuses on the role congressional hearings play as a forum for interest groups to express their viewpoints and provide policy information directly to congressional policymakers. Testifying at congressional hearings has generally been found to be an important activity for interest groups seeking to lobby the government (McQuide 2007). For instance, in a survey of interest group activities, nearly all interest groups (99%) surveyed noted that one of their representatives had testified in a congressional hearing (Schlozman and Tierney 1986). Interest group lobbyists also rated testifying at congressional hearings as the second most important lobbying activity behind only meeting personally with congressional policymakers (Nownes 2001).

Due to the importance interest groups place on testifying in congressional hearings, it is not surprising that many researchers have attempted to understand the factors that influence the likelihood that interest group lobbyists will be invited to testify at hearings. In this strain of research, interest group representatives' participation in hearings is used as a measure for how successful interest groups are in gaining access to congressional policymakers (Leyden 1995). Early research focused on how different characteristics of interest groups helped their lobbyists/representatives gain access to congressional policymakers by testifying at congressional hearings. For instance, interest groups with greater organizational resources (i.e. number of lobbyists representing the group's interests in Washington, whether the group has a political action Committee, and number of staff member) are more likely to be called to testify at congressional hearings than groups without these resources (Leyden 1995). In exchange

for the benefits that groups with organizational resources can provide to committee members, committees agree to invite witnesses to testify in front of the committee (Leyden 1995).

In addition to the aforementioned resources valued by committee members, committees also value the different types of information that interest groups can provide about the political and policy ramifications of certain policy proposals. As Wright (1996, 42) describes, congressional hearings provide an opportunity for congressional committees to display to the public information that they have heard in private conservations between committee staff members and members of interest groups. Due to the fact that congressional hearings are taped and sometimes televised and the transcripts for the hearings are released to the public, committee members can be confident that interest groups will not change their positions on a particular policy issue at a later date out of fear that past statements will be used against them if they change their positions (Wright 1996, 42). Even when committee members hear the same arguments/information from interest group lobbyists that they have heard in private conversations, the lack of new information/arguments can still have informative value because it gives committee members more confidence in the lines of debate on a particular issue (Wright 1996, 42).

Interest groups can provide several different types of information to congressional committees through the hearing process. As McQuide (2007) describes, political researchers have described two general types of information that interest groups can provide to congressional policymakers: political information and policy information (Webber 1979; Sabatier and Whiteman 1985; Hansen 1991; Leyden 1993;

Heitshusen 2000; Lowery and Brasher 2004). In general, political information refers to information on how particular policy decisions will impact the favorability of the views of committee members' constituents toward a member, and thus, the electoral prospects of a member (Hansen 1991; Whiteman 1995; Lowery and Brasher 2004; McQuide 2007). On the other hand, policy information refers to information about the nature of a policy problem, the likely economic and social consequences of different proposed solutions to solve the problem, and recommendations on which policy proposals will serve as the best solution for a problem (Whiteman 1995; Lowery and Brasher 2004; McQuide 2007).

Researchers have found that congressional committees consider the types of information that will be provided by interest groups when deciding who will be called to testify at congressional hearings on particular topics. In turn, interest group representatives seek to provide the type of information that will be most valued by committee members in order to be selected to testify at particular hearings. For instance, Esterling (2004, 2007) finds that technical policy information is valued by congressional policymakers and interest group lobbyists more than one would necessarily expect. Interest groups with increased technical expertise and the ability to make instrumental fact-based arguments were more likely to be called to testify at congressional hearings than interest groups who could not provide such information (Esterling 2004). In turn, in the context of debates during congressional hearings on Medicare, interest groups were more likely to provide campaign contributions to members who demonstrated the ability to make fact-based analytical arguments during

hearings rather than emotional appeals that do not demonstrate an understanding of the issue at hand (Esterling 2007).

Many researchers have uncovered that the type of information valued by particular congressional policymakers may depend on the context in which the hearing takes place. For instance, Heitshusen (2000) finds that the types of information valued by congressional committees in certain issue areas shifted subsequent to the reforms that decentralized the U.S. House during the 1970's. According to this line of thought, committees with more ideologically moderate members are less likely to be firm in their beliefs on a particular issue, and thus, are more likely to value policy information that may be crucial in helping them decide what the proper solution is to a particular policy problem (Heitshusen 2000). By contrast, committees with more ideologically extreme members are more likely to have already made up their minds on particular issues, and thus, are more likely to value information that states how particular policy decisions will be perceived politically by interest groups and members' constituencies (Heitshusen 2000). In the case of environmental policy, after committee decentralization reforms, environmental groups specializing in political information were more likely to be called to testify during the post-reform period, because of the increased likelihood of testifying in front of the more ideologically pro-environmental Energy and Commerce Committee (Heitshusen 2000). By contrast, in the case of labor policy, committees specializing in technical policy information were more likely to testify after the reforms due to the increased likelihood of testifying in front of committees that were more moderate in their preferences on labor policy like the Energy and Commerce and Ways and Means committees (Heitshusen 2000).

McQuide (2007) further finds that the type of information valued by committees when selecting witnesses to testify at hearings is largely based on the issue context being addressed by a hearing. For instance, in older, less-technical issue areas, like agricultural policy, political information is more likely to be valued by congressional committees due to the fact that committee member have already established firmly-held beliefs on an issue and do not need technical policy information to convince them of the acceptability of a particular policy proposal (McQuide 2007). By contrast, in newer, technical issues, like biotechnology policy, policy information is more likely to be valued due to the fact that congressional committees are uncertain about the impacts that particular policy decisions will have on society and need technical policy information to inform them of the proper actions to take (McQuide 2007).

Finally, interest groups may also be selected based on the likely content of their testimony. For instance, committees, particularly composed of members that are ideologically outliers, frequently pressure representatives of interest groups to express the committee's official position when testifying in a congressional hearing (Holyoke 2008). Many times, if interest groups do not agree to support the committee's official position on an issue, their representatives will not be invited to testify at a congressional hearing (Holyoke 2008). As such, interest groups will sometimes compromise and support a position with which they do not wholeheartedly agree in order to be afforded the opportunity to testify in front of congressional hearing (Holyoke 2008). With this said, interest group lobbyists were less likely to compromise their positions in order to gain access to the congressional hearing forum when the issue being addressed was very

important to the interest group and the level of disagreement/conflict amongst the different groups in the issue area was greater (Holyoke 2008).

From the preceding discussion, it is relatively clear that a large purpose of congressional hearings is the exchange of benefits between interest groups and congressional policymakers. In this exchange, congressional policymakers receive benefits that only interest groups can provide (information and organizational resources) in exchange for allowing interest groups to have a forum to express their positions directly to congressional policymakers and the public at large. Due to the fact that the largest stream of congressional hearing research focuses on interest group participation in the process, many might understandably feel that the aforementioned exchange of benefits is the most important role that hearings play in congressional policymaking.

However, while interest group participation in congressional hearings is clearly an important facet of the hearing process, the current focus on interest group witnesses by hearing scholars obscures the role that other types of witnesses may play in the hearing process. As Quadrel and Rich (1989) note, members of private interest groups make up only one portion of the types of witnesses that testify in front of congressional committees. Other types of witnesses include congressional representatives, representatives of federal executive agencies and departments, individuals representing state and local governments, and experts from non-ideological private research firms and universities (Quadrel and Rich 1989).

Unfortunately, research coverage of the role that other types of witnesses play in the hearing process is far less extensive than research exploring the role that interest groups play in the hearing process. In particular, the role that non-partisan research

experts play in hearing politics has only received attention relatively recently (see Rich 2001 and Esterling 2011). Yet, as I will discuss in subsequent chapters, these types of witnesses make up significant percentages of witnesses testifying in technical policy areas like climate change and biotechnology. As such, the role that these types of witnesses play in hearing politics should not be ignored in favor of a sole focus on interest group witnesses. As such, this dissertation project seeks to explore the role that all types of witnesses play in the hearing process and how different types of witnesses may be relied on more by certain types of committees, at certain points of time, and when examining certain issue areas.

Lack of Examination of Tone of Testimony

When examining congressional hearings, most researchers have focused on the topics of congressional hearings and the group affiliation of those testifying to determine whether or not committees use the hearing process to select witnesses likely to espouse particular points of view concerning a particular policy issue (Quadrel and Rich 1989; Baumgartner and Jones 1991; Jones, Baumgartner, and Talbert 1993; Talbert, Jones, and Baumgartner 1995; Leyden 1995; Heitshusen 2000; Worsham 2006). The decision to use group affiliations to measure the overall level bias or balance in the witnesses selected to testify in front of particular congressional committees is understandable considering the relative ease in coding such data by comparison to other methods of measuring tone of witness testimony. Furthermore, until recently, congressional hearing documents had not been universally available in electronic format, which made tracking down and analyzing the content of actual witness

testimony quite difficult. Finally, since witness participation in hearings has most frequently been utilized to study interest group lobbying effectiveness, the actual content of hearing testimony has normally not been very useful to analyze in most past studies.

As Esterling (2004, 251) indicates, many researchers have raised questions about the reliability and validity of data collected from congressional hearing documents due to the fact that few studies have utilized congressional hearings as a source of data for systematic research (McQuide 2007, 62). Fortunately, with recent advances in the online availability of congressional hearing transcripts on sites like ProQuest Congressional (https://web.lexis-nexis.com/congcomp) and GPO Access (http://www.gpoaccess.gov/chearings/index.html), more researchers have been able to make use of the vast amount of information contained in congressional hearings for the purpose of conducting systematic research (for recent examples, see Esterling 2004, 2007, 2010; McQuide 2007; Holyoke 2008). As congressional hearings are utilized more frequently as a data source, researchers will gain more confidence in their validity and reliability.

With this said, many still question whether the time and effort necessary to analyze the content of hearing testimony is worth the benefits that may be derived from conducting such research. In the case of this research project, the benefits of directly studying the content of hearing testimony are quite clear. The overarching goal of this project is to understand what types of factors influence what witnesses are selected to testify at congressional hearings. As stated earlier, one of the factors that have been hypothesized to affect the selection of witnesses is the degree to which the viewpoints

of the witnesses match the viewpoints of committee chairs. Thus, it is important to understand the tone of witness testimony in order to determine whether the degree to which the testimony matches committee chair's belief systems is an important determinant of witness selection strategies.

Some may argue that the tone of witness testimony can be inferred from the group affiliations of the witnesses testifying at hearings. However, in many cases, the tone of a particular witness's testimony will not be evident simply by analyzing the group affiliation of the witness testifying. Consider the case of academic experts who have been called to testify in front of a particular committee. The vast majority of the time, these experts will represent an institution that is respected for its perceived neutrality. As such, it is next to impossible to determine the tone of most expert witnesses' testimony simply by studying the group affiliation of the witness. Since congressional committees have relied to a large extent on expert witnesses in the technical issue areas I will be examining, simply studying the group affiliations of witnesses will not be sufficient in order to determine the tone of the content they are presenting in their respective testimony.

In addition to the problems with identifying the tone of testimony presented by witnesses representing organizations with a reputation for neutrality, even witnesses representing organizations with a fairly clear perceived bias on an issue may not always present testimony that is consistent with that bias. For instance, past research has uncovered that individuals have presented information about particular issues that diverges from what one may expect given their organizational affiliation (Jenkins-Smith and Silva 1998). Furthermore, committee staff generally interview prospective

witnesses prior to allowing them to testify at the hearing, and thus, have some knowledge of the content of their testimony prior to the hearing taking place (Palmer 2007; Davis 2007). In the course of these interviews, staff members sometimes will ask prospective witnesses to refrain from expressing certain viewpoints at a hearing in exchange for the opportunity to express their viewpoints on the issue being addressed at the hearing (Staff Interviews 2010). As such, the organizational affiliations of witnesses cannot always be utilized to determine the content of hearing testimony even in cases where the organizational bias of the witness may seem clear.

In order to more directly examine how the overall tone of witness testimony is determined, this dissertation analyzes hearing documents to determine the tone of witness testimony. As stated earlier, few studies have utilized hearing documents as a source of data. This study will demonstrate the clear advantages of utilizing hearing documents to gather information about the hearing process that could otherwise not be obtained.

Conclusion

As this chapter demonstrates, existing congressional hearing research has suffered from three main flaws. First of all, existing research has mainly focused on interest group participation in congressional hearings to the detriment of understanding why other types of witnesses (i.e. experts and executive branch officials) are called to testify in congressional hearings. This dissertation seeks to fill this hole by taking a closer look at the role all types of witnesses play in the hearing process. Second of all, existing congressional hearing research has not made great use of the wealth of the information that can be obtained by analyzing the content of congressional hearing

documents. Finally and most importantly, existing hearing research has not attempted to understand why congressional hearings operate very differently under different circumstances. For instance, why do congressional committees stack hearing testimony at certain times while balancing testimony at other times? In the next chapter, I will lay out a theory that attempts to understand why congressional hearings may operate very differently depending on the subsystem, issue, and political contexts within which a hearing takes place.

Chapter 2. Understanding the Dynamics of Information Collection and Display Decisions in Congressional Hearings

Introduction

In the previous chapter, I discussed why witness selection and the dynamics of hearing politics are important and relatively understudied topics in political science literature. In this chapter, I will first use information collected from interviews with committee staff members to help gain a better understanding for how the preparation for congressional hearings is conducted. Then, using this information as a backdrop, I will lay out a theory of congressional information collection and display strategies that will inform the analyses conducted in later chapters of this project.

Process and Procedures of Congressional Hearing Preparation

While congressional hearings are public affairs that, on many occasions, garner a great deal of media attention, the preparation for these hearings is conducted in private mostly by staff members of congressional committees (Palmer 2007; Davis 2007; Staff Interviews 2010). As such, the process that makes up the preparation for congressional hearings is fairly poorly understood by the public. For the purposes of truly understanding how congressional committee members make information collection and display decisions in congressional hearings, it is important to first take a step back from the public proceedings that make up the end product of congressional hearings and take a look at the process and procedures that guide the production of the final congressional hearing product. In this section, I will draw from Congressional Research Service

reports and other second-hand accounts of the congressional hearing process, House and Senate committee rules, and interviews with congressional staff members[3] with an intimate knowledge of the congressional hearing process, to present a comprehensive picture of the process and procedures that guide preparation for congressional hearings.

Deciding to Hold a Hearing. The first stage of the congressional hearing process is the decision on whether or not to hold a hearing on a particular topic. Committee and subcommittee chairmen have the discretion to call hearings on topics they deem important to collect testimony from interested and expert parties (LaForge 2010). However, the amount of discretion that committee and subcommittee chairs have in deciding to hold a hearing depends in large part on the type of hearing that is being held. Congressional committee chairs may hold a wide variety of different types of congressional hearings. These types of hearing include the following:

- Considering the merits of potential or pending legislation
- Reviewing the performance of bureaucratic officials in the implementation of a program
- Investigating the potential wrongdoing of public officials or private citizens
- Reviewing the acceptability of presidential nominations and terms of international treaties

[3] Interviews were conducted with 10 congressional majority and minority staff members in both the House and Senate in the summer of 2010. The interviews lasted between 30 minutes to an hour and consisted of open-ended questions concerning staff members' personal duties in preparing for congressional hearings. Interviews were taped if respondents provided permission and notes were taken during all interviews. To ensure confidentiality, I have omitted any information that could be connected back to individual respondents.

- Reviewing budget requests made by the president/determining how to appropriate the authorization of federal funds
- Investigating policy topics in absence of any pending legislative actions

On the one hand, committee chairs have a relatively low level of discretion in determining whether to hold hearings for the purpose of reviewing budget and appropriations requests. According to Section 242 (c) of the Legislative Reorganization Act of 1970 and Clause 4 (a)(1) of Rule X of the Rules of the House of Representatives, within thirty days after the president's budgetary requests are transmitted to Congress, the House Committee on Appropriations is required to hold hearings where administration officials are given the opportunity to defend the president's budgetary requests (Heitshusen 2007). Typically, the task of scrutinizing the more specific components of the president's appropriations requests is delegated by the Appropriations Committee to its different constituent subcommittees (LeLoup 1984; LaForge 2010). While the Senate rules do not require the Senate Appropriations Committee to hold hearings on appropriations requests, the process that takes place in the House is typically followed by the Senate Appropriations Committee as well (LeLoup 1984; LaForge 2010). Nonetheless, particularly in the House, the Appropriations Committee does not have much discretion in determining whether or not to hold a hearing on presidential budget requests. Unlike hearings held for other reasons, it is expected that appropriations hearings will be held whether the chair wants to hold these hearings or not. However, even in the case of appropriations hearings, committee and subcommittee chairs still have some degree of discretion in determining

the amount of hearing days to devote to particular appropriations requests (LaForge 2010).

Congressional committee and subcommittee chairs have a greater degree of discretion in deciding whether to hold hearings to consider the merits of passing legislation that does not involve the appropriation of federal funds and in determining whether to hold hearings to review the acceptability of presidential nominations. Unlike hearings concerning presidential budgetary requests, there are no rules in either chamber mandating that congressional committees must hold hearings on all legislation and nominations that come before the committee (Heitshusen 2007; Rybicki 2009). In fact, at times, nominations and legislation may progress through the legislative process without ever receiving a formal congressional hearing. For instance, according to the Congressional Research Service, about half of the nominees requiring congressional approval to assume their positions are confirmed without a hearing scrutinizing the credentials of the candidate ever taking place (Krutz, Fleisher, and Bond 1998; Rybicki 2009).

In the case of legislative hearings, congressional committees and subcommittees do not have the time and resources to conduct a hearing on every single initiative that is referred to them (Krutz 2005). Thus, congressional committee and subcommittee chairs must use discretion in determining whether or not to hold hearings on certain initiatives. Congressional scholars disagree to some extent on the circumstances under which congressional committees will decide to hold hearings on particular initiatives. On the one hand, some scholars argue that committee chairs decide to hold hearings on particular initiatives to signal to the floor that a particular initiative has been given the

proper scrutiny and is worthy of passage. For instance, Walter Oleszek notes the following about the place of legislative hearings in the legislative process:

> The decision to hold a hearing is often a critical point in the life of a bill. Measures brought to the floor without first undergoing the scrutiny of hearings will likely receive sharp criticism…The importance of the committee stage is based on the assumption that the experts – the committee members – carefully scrutinize a proposal, and hearings provide a demonstrable record of that scrutiny (Oleszek 2004, 93).

On the other hand, other scholars argue that committee chairs decide to hold hearings to demonstrate to the floor that there are enough significant problems with a piece of legislation that it should not be passed (Brasher 2006). Whatever the reason that committee and subcommittee chairs decide to hold hearings on particular pieces of legislation and on certain presidential nominees while not holding hearings on others, it is clear that chairs have a great deal of discretion in making these decisions.

Nonetheless, while subcommittee and committee chairs have the discretion in deciding which legislation and nominations is deserving of the attention provided by a congressional hearing, chairs do not have the discretion to hold hearings on nominations and legislation that have not been referred to them or are not in their respective jurisdictions. For instance, committees in the House cannot hold hearings to question potential presidential nominations because the House does not have jurisdiction over these matters. However, if hearings are held for reasons not related to any legislative action (i.e. the production of legislation or the confirmation of presidential nominees and treaties), committee chairs are afforded nearly unlimited discretion in determining

what topics to focus on in congressional hearings. In non-legislative hearings and hearings that do not involve powers delegated to the Senate, congressional committees and subcommittees are allowed to hold hearings on almost any topic area the chair of these entities choose, even if the topic area is outside the formal statutory jurisdiction of the committee or subcommittee conducting the hearing (Talbert, Jones, and Baumgartner 1995; King 1997). As such, in many instances, committee and subcommittee chairs have fairly wide discretion in deciding whether a particular topic is worthy of a formal congressional hearing or not.

Due to the wide degree of discretion that committee and subcommittee chairs have in deciding whether or not to hold hearings on certain topics, these chairpersons are faced with many requests from other actors (i.e. the public, interest groups, fellow majority committee members, minority committee members) to hold hearings on topics that are important to them. Often, committee staff will listen to requests for hearings or even suggest possible topics for exploration themselves, and will prepare a memorandum for the chair to suggest a possible topic for exploration that will include why the hearing is necessary, who should be invited to the hearing, the number of hearing days needed to hold the hearing, the minority party's views on the hearing, and possible political ramifications that will result from the hearing being held (Palmer 2007, 2009a). With respect to non-legislative hearings, committee chairs often ultimately schedule a hearing for a variety of reasons including, but not limited to, drawing media attention to a particular topic, demonstrating activity on a topic that is already gaining media attention or attention from the public/interest groups, demonstrating expertise in a particular topic area in order to stake a claim to jurisdiction

in that area, and gathering information on an issue that is of interest to the chair himself or other committee members (Talbert, Jones, and Baumgartner 1995; King 1997; Davis 2007).

Announcing and Scheduling a Hearing. After a committee or subcommittee chair has deemed a topic worthy of exploration via a formal congressional hearing, committees and subcommittees must begin the process of announcing and scheduling the hearing. Once again, committee chairs have relatively autonomous power in determining when a hearing takes place. In general, subcommittee chairs' also have the power to schedule hearings on any topics they would like at any time they choose. However, in some committees, committee rules explicitly state that subcommittee chairmen must obtain the approval of the committee chairman before formally scheduling a hearing in order to ensure that committee rooms are available and to avoid subcommittees simultaneously scheduling hearings.[4] Some committee rules also require that subcommittee chairs coordinate with each other when scheduling hearings (Davis 2011e).

Most of the time, the process of scheduling and announcing a hearing date is relatively apolitical. Committee staff will often schedule a hearing with a mind toward ensuring that enough members will be present to establish the quorum necessary to hold the hearing (usually one or two members), committee leaders (both majority and minority) will be present at the hearing, members with a vested interest in the issue will

[4] See the House Energy and Commerce Committee's rules (http://energycommerce.house.gov/media/file/PDFs/112th_rules.pdf) as an example.

be allowed to attend, committee rooms are available, and, where possible, hearings are not scheduled at the same time as other commitments of committee members to ensure as much participation as possible (Palmer 2007, 2009a; Davis 2011a, 2011e).

Nonetheless, the scheduling of a congressional hearing can involve some political considerations. Due to the chair's control over the scheduling process, majority staff members have the ability to schedule a hearing date with a mind toward ensuring that potential witnesses, whose testimony the committee or subcommittee chair feels will be crucial to the goals set forth in the hearing, will be able to testify at the hearing. As such, majority staff members very rarely run into scheduling conflicts when attempting to get their preferred witnesses to testify at a congressional hearing. On the other hand, since minority members have no formal powers in scheduling hearings, minority party members are more likely than the majority to run into scheduling conflicts that prevent them from calling their most preferred witnesses to testify (Staff Interviews 2010). More specifically, since minority members have no power in scheduling hearings and must cater to the whims of the majority, minority members' preferred witnesses may not always be able to testify on the date set by the majority staff (Staff Interviews 2010). Although this happens relatively rarely, some minority staff members noted that they have had to settle for witnesses that were not their first choices due to scheduling conflicts involving their original witness selections (Staff Interviews 2010). Thus, the scheduling of a hearing can be strategically planned for political purposes and can have political ramifications for the types of witnesses called in a particular hearing.

After a hearing date has been scheduled, the committee or subcommittee chairs must formally and publicly announce the hearing date to other committee members and the public. House Rule XI, clause 2(g)(3) and Senate Rule XXVI, paragraph 4(a) both stipulate that committees and subcommittees are required to publicly announce the date, place, and subject of any hearing it conducts at least one week in advance of the scheduled date of the hearing (Palmer 2007; Davis 2011a, 2011e).[5] This rule allows other committee members to properly prepare for the hearing and for the minority ranking member to have enough time to select the witness or witnesses that will represent the minority's point of view in the hearing. Nonetheless, in both chambers, this rule can be circumvented if the committee determines that there is "good cause" to not give a week's notice prior to a hearing (Palmer 2007; Davis 2011a, 2011e).

The procedures for determining whether there is "good cause" to provide a shorter period of notice for a hearing differ depending on the chamber conducting the hearing. In the House, the standing rules indicate that the hearings may be held with less than a week's notice if the chair and the ranking minority member agree that there is a need to do so or a majority of committee or subcommittee members vote to waive the requirement in the presence of a quorum for conducting official committee business (Davis 2011a, 2011e). Senate standing committee rules provide flexibility to individual committees in determining the procedures to waive the requirement of one week's public notice before a hearing. The Congressional Research Service notes the following

[5] This rule applies to all committees except the Senate Committee on Appropriations and the Senate Committee on the Budget.

variations between committees on the requirements for waiving one week hearing notice requirements in the Senate:

> [T]he rules of the Committee on Environment and Public Works state that hearings held with less than a week's notice require the concurrence of the ranking minority member, and in any case, notice must be made at least 24 hours in advance of the hearing. The Committee on Agriculture, Nutrition, and Forestry permits hearings with less than a week's public notice if the committee or subcommittee chair determines that the hearing is noncontroversial or that "special circumstances" require swift action, and a majority of the committee or subcommittee concurs[6] (Palmer 2007).

Although providing public notification before a hearing is most of the time a relatively apolitical activity, the process can have political ramifications and the decision on when to give public notification for a hearing can be made by committee and subcommittee chairs in a strategic fashion. Minority members and their staff would prefer to be informed about a hearing as soon as possible in order to properly prepare lines of questioning for potential witnesses and to be able to ensure that their most preferred witnesses are given enough notice so that they are able to testify at the hearing. However, as noted above, in all House committees and some Senate committees, the chair has the option of waiving the one week notice requirement without approval from any minority members. According to one minority committee

[6] Both of these rules are still in effect as of August 16, 2011 according to their committee websites.

staff member, this option has been utilized by the majority in some instances, and has caused stress for minority staff members in trying to prepare lines of questioning for potential witnesses and in trying to determine what witness or witnesses the minority will call at the hearing (Staff Interviews 2010).

Selecting Witnesses. Likely the most crucial part of hearing preparation is determining the witnesses that will testify at the hearing. In general, committee and subcommittee chairs have fairly wide-reaching power over the witness selection process. Committee and subcommittee chairs are responsible for overseeing the process of selecting witnesses and sending the formal invitation to those selected to testify at a particular hearing (Sachs 2003; Palmer 2007; LaForge 2010). With little to no input from other members if they so choose, committee and subcommittee chairs can call almost anyone they choose ranging from experts to administration officials to members of interest groups and private citizens to testify before them at a hearing (LaForge 2010).

Although those invited to testify at hearings will typically view the invitation to testify with excitement and voluntarily choose to appear at these hearings, even when individuals are reluctant to testify at hearings, all congressional committees and subcommittees in both chambers have the formal power to require individuals to appear before them by issuing subpoenas to those who refuse to testify (Palmer 2007, 2009a, 2009b, 2009c; Davis 2011a, 2011d, 2011f). While some committees give chairs sole power over subpoenas, in most committees, the chair does not have sole discretion in authorizing a subpoena (Palmer 2009a, 2009b, 2009c; Davis 2011a, 2011d, 2011f). Nonetheless, most committees simply require that a majority of committee or

subcommittee members vote to authorize a subpoena in the presence of a quorum for conducting official committee business (Palmer 2009a, 2009b. 2009c; Davis 2011a, 2011d, 2011f). The chair is required to gain approval from the minority ranking member to authorize a subpoena in only a few committees (Palmer 2009a, 2009b, 2009c; Davis 2011a, 2011d, 2011f). Thus, in most committees in both chambers, the chair has the ability to authorize the use of a subpoena without approval from any minority members.

As the preceding paragraphs demonstrate, majority party committee and subcommittee chairs in particular have immense powers over the witness selection process. However, due to formal statutory rules in both chambers of Congress and informal norms that operate in every committee on the hill, the minority party in general and the minority ranking member in particular play a key role in witness selection. According to House Rule XI, clause 2(j)(1) and Senate Rule XXVI, paragraph 4(d), all congressional committees and subcommittees (except the Senate Appropriations Committee) are required to allow the minority party to call witnesses on at least one day of the hearing if a majority of minority committee or subcommittee members vote to invoke this rule (Davis 2011b, 2011c). If a request by the minority to call witnesses has been made after the hearing has already begun, the hearing must be extended by one day to allow the minority to call witnesses (Davis 2011b, 2011c). In reality, the formal rules of the House and the Senate are seldom invoked by the minority to force the majority to invite witnesses the minority chooses to testify at a hearing (Davis 2011b, 2011c). The rule simply serves as a procedural safeguard to protect the minority from a

chair that wishes to totally exclude their witnesses from a hearing (Davis 2011b, 2011c).

For many years, norms have existed in both chambers giving the minority party the right to call at least one witness and sometimes more to testify at a particular hearing. As the Congressional Research Service notes, the committee report[7] accompanying the 1970 Legislative Reorganization Act that formally codified the so-called "minority witness rules" in both chambers acknowledges that "[b]y custom, committees ordinarily honor requests from their minority party members to call certain witnesses" (Davis 2011b, 1). According to interviews with congressional staff members, minority witness selection norms are still strong even in the modern day polarized environment that operates on Capitol Hill (Staff Interviews 2010). In all committees, the minority party is allowed to call, at the bare minimum, one witness to testify (Staff Interviews 2010).

However, both majority and minority staff members noted that in many committees the minority may be given more than one witness depending on the total number of witnesses being invited to the hearing (Staff Interviews 2010). For instance, two different minority committee staff members (one in the House and one in the Senate) indicated that they are typically allowed to call one witness for every three witnesses that the majority calls to testify and that they typically are allowed to call whatever witnesses they choose even if the majority does not agree with their selections

[7] The committee report referred to can be found at the following source: U.S. Congress, House Committee on Rules, *Legislative Reorganization Act of 1970,* report to accompany H.R. 17654, 91st Cong., 2nd sess., H.Rept. 91-1215 (Washington: GPO, 1970), p.6.

(Staff Interviews 2010). Several majority staff members remarked that while the majority gets to select the majority of witnesses at a hearing, they try to converse with the minority in witness selection and try to allow the minority to have as much input in witness selection as is reasonably possible (Staff Interviews 2010). Nonetheless, staff members on other committees noted that the minority is typically only allowed to call one witness to testify and only rarely gets the opportunity to call more than one witness at a hearing (Staff Interviews 2010).

In the end, there are no hard and fast rules on how many witnesses the minority is allowed to call at a hearing. The number of witnesses that the minority is allowed to call at a hearing is largely dependent on the chair of the committee and his/her relationship with the minority member on the committee, as well as the strength of the norms on witness selection that operate within the committee (Staff Interviews 2010). Nonetheless, on every committee, strong institutional norms are present that permit the minority party to call at least one witness it chooses to testify at the hearing. As I discuss later, these norms affect the witness selection process and the overall tone of testimony at a hearing more than past researchers have acknowledged.

Both committee staff members, who are accountable to the chair of the committee, and minority committee staff members, who are accountable to the minority ranking member of the committee, have certain responsibilities related to the selection of witnesses at a congressional hearing. Majority and minority committee staff generally begin the process of selecting witnesses by first identifying individuals that seem to be good candidates to testify at a congressional hearing on a particular topic (Staff Interviews 2010). Committee staff will use many different methods to search for

witnesses to testify at congressional hearings. If a hearing involves a policy area under the jurisdiction of a particular executive agency or is for oversight purposes, the committee will almost always ask representatives of federal agencies to come to testify in order to directly question them on their past performance/actions or to get their expertise on the situation (LaForge 2010; Staff Interviews 2010). In the case of oversight hearings, if the focus of the hearing is an actor outside of government (i.e. a business) engaging in an activity that is harmful to others, that actor will normally either be subpoenaed or asked to testify at the hearing to defend his or her actions (Staff Interviews 2010).

Often, if an issue is important enough to them or their constituencies, members of Congress outside the committee will want to be allowed to testify at a hearing to give their point of view on the issue (Kingdon 1984; Gormley 1998; Mattei 1998; Burstein and Hirsch 2007). Knowing this, committee staff members will often contact members that are likely to want to testify at a particular hearing or allow members to testify that have contacted them prior to a hearing (Staff Interviews 2010). Furthermore, committee members typically like to call witnesses from their own districts in order to build goodwill with their constituents (Staff Interviews 2010). As such, staff members will typically contact members of the committee (particularly the chair and the minority member respectively) to determine whether any of the members have someone from their district who would be a good candidate to testify at a hearing (Staff Interviews 2010).

While the strategies above will produce enough witnesses to testify for some hearings, many times staff members must actively search for good candidates to testify

at particular congressional hearings. Typically, if at all possible, staff members try to call witnesses who have testified for them in the past in hearings with similar topics (Staff Interviews 2010). Sometimes, witnesses will be called to testify and end up interacting poorly with committee members or expressing views that they were not expected to express (Staff Interviews 2010). Staff members are more confident of individuals who have already made it through giving testimony successfully in front of a congressional committee and have demonstrated how they interact with committee members and what their views are on the issue at hand (Staff Interviews 2010).

Nonetheless, many times either witnesses that have previously testified at a hearing will not be available to testify at a hearing or the hearing is on a topic where the expertise/interest of previous witnesses is not applicable. In situations where all of the above methods of selecting potential witnesses have been exhausted, committee staff will conduct extensive searches for potential individuals who can testify at a hearing (Staff Interviews 2010). When in doubt over who can testify, committee staff often look to interest groups, who are likely to be friendly to their position or are seen as having enough resources/expertise to provide committee members with the information necessary to make good policy, to see if they can provide good candidates to testify at a particular hearing (Hansen 1991; Leyden 1995; Wright 1996; Esterling 2007; McQuide 2007; Staff Interviews 2010). Committee staff also may conduct internet searches to identify individuals who either are considered experts in the topic being addressed at a hearing or are likely to have interesting information to present at a particular hearing (Staff Interviews 2010).

After committee staff members have identified good candidates to testify at a hearing, they typically interview these prospective witnesses prior to allowing them to testify at the hearing, especially if a witness has never testified at a hearing in the past (Palmer 2007; Davis 2007; LaForge 2010; Staff Interviews 2010). Congressional committee members typically do not want to be caught off guard by the content of witness testimony and how witnesses behave at the hearing, as being caught off guard increases the likelihood that congressional committee members will appear ill-prepared or uninformed about the issue being examined at a hearing (Staff Interviews 2010). Furthermore, if the content of a witness's testimony differs from the testimony that he or she was expected to give, the message or perspective that a chair or minority ranking member wants to have portrayed at a hearing may not get presented at the hearing at all (Staff Interviews 2010). Thus, staff members consider it their responsibility to understand what witnesses will say at a hearing and how they will behave at the hearing before a hearing takes place (Staff Interviews 2010).

As such, committee staff interview prospective witnesses to determine what the witnesses will say at a hearing and how they will respond to questioning from committee and subcommittee members (Staff Interviews 2010). In these interviews, staff members may also coach witnesses on how to answer particular questions and how to deal with members who are likely to be antagonistic to the arguments they are going to make in a hearing (Staff Interviews 2010). Staff members may also decide after an interview that a witness that seemed promising should not be called to testify (Staff Interviews 2010). One staff member noted that in these interviews committee staff members have asked witnesses to refrain from expressing a certain view at a hearing as

a condition for being invited to testify at the hearing (Staff Interviews 2010). Of course, even as much as staff members try to control the content of witness testimony, since witnesses have total control over what they end up saying at a hearing, staff members have in the past been caught off guard by the content of the testimony of particular witnesses (Staff Interviews 2010). Nonetheless, most staff members use preliminary interviews to avoid being surprised by anything that a witness will say or do at a particular hearing (Staff Interviews 2010).

Once staff members have acquired enough information about prospective witnesses, they will then make final decisions on who should be invited to testify at a hearing. Staff members consider a wide variety of different criteria when making a final decision on who will testify at a particular hearing. These criteria include the following[8]:

- **Expertise –** The perceived expertise of a witness, usually as a result of academic qualifications, lends credibility to the comments of that witness that other less expert witnesses do not have. Regardless of the purpose of a hearing, expert witness testimony is usually valued at a hearing. If the purpose of the hearing is to genuinely gather information about a little-known or technical policy topic, expert testimony will be valued because experts are the most likely to know what the best policy options are in such issue areas. If the purpose of a hearing is to support the point of view of the chair, expert testimony provides credibility to that particular point of view.

[8] These criteria were all gathered from interviews with congressional staff members.

- **Ability to engage committee members and the general public –** Staff members typically look for witnesses who are personable, able to give testimony that is interesting and informational, and able to interact well with committee members during question and answer periods. Staff members do not like to call witnesses that only give yes or no answers and do not engage the audience and committee members in a meaningful discussion of the issues at hand. Staff members may look for personable witnesses for a variety of reasons. On the one hand, the goal of many staff members when they set up a hearing or call a witness to testify is to gain attention from the press for their particular issue. Witnesses that are interesting and personable are thought to grab more attention from the media and the public than less personable witnesses would do. On the other hand, if a hearing is designed to genuinely better understand an issue, a witness that is personable and gives testimony that is informational and interesting can help members to gain a better understanding of an issue than a witness that simply gives yes or no answers and does not engage the audience and committee members.
- **Location in home district of committee member –** As stated earlier, committee chairs/minority members typically, if at all possible, like to bring in witnesses from their own district/state to testify at a hearing. This establishes good rapport with constituents within the district, as it gives a chance for an interest group/expert/citizen/governmental actor within the district a chance to espouse their viewpoints on an issue to a wider audience.

- **Balance in occupations/walks of life –** Committee chairs typically seek to ensure that individuals with a wide spectrum of different backgrounds come to testify at a particular hearing. This can be done for a variety of reasons. If a hearing is designed to genuinely better understand an issue, committee members can gain a better understanding of how to deal with a particular policy problem by listening to as many different perspectives on the issue as possible. On the other hand, if a hearing is designed to bolster the policy positions of the chair, bringing in witnesses from a wide cross-section of different backgrounds can demonstrate that individuals from all walks of life support the position the chair espouses.
- **Concurrence with views of chair/minority ranking member –** Most staff members noted that on many occasions they seek out individuals to testify that they are confident will help make a point with which the chair or minority ranking member agrees. Nonetheless, most staff members also noted that in some hearings, the degree to which the views of a witness are in line with the views of the chair or the minority ranking member is not an important consideration when deciding on which witnesses to invite. Later in this chapter, I will discuss the reasons why this criteria is an important consideration for witness selection in some hearings while not being an important consideration in other hearings.

Preparing Member Statements and Lines of Questioning. Individual rank-and-file legislators are not typically intimately involved with the selection of witnesses in

congressional hearings since control over that process is usually reserved for committee and subcommittee chairs (Sachs 2003, 11; Carr 2006, 10-11; LaForge 2010). Nonetheless, these members still are typically given the chance at the start of a hearing to present an oral statement and are given an additional five minutes during the course of a hearing to use as they please. Committee members will often use this time to influence the hearing process through questioning the validity of arguments made by witnesses (Palmer 2007) and through orally presenting statements for the record that serve as either dissent or affirmation of the general tone of information selected by committee and subcommittee chairs. When not present, committee members are also given the privilege of submitting statements for the record, which also serve to establish a record of dissent or affirmation for the overall tone of the hearing (Staff Interviews 2010).

Unlike the other stages of the hearing preparation process, the personal staffs of individual members tend to have a greater role in the crafting of opening statements and lines of questioning for individual members of the committee (Staff Interviews 2010). Minority and majority committee and subcommittee staffs do write opening statements and lines of questioning for their respective chairs and minority ranking members and will sometimes try to persuade particular rank and file committee members to highlight certain points in their opening statements or ask particular questions over the course of the hearing (Staff Interviews 2010). However, the final decisions on what particular committee members will say and ask over the course of a hearing are ultimately up to the individual committee members who will be participating in the hearing (Staff Interviews 2010). Even when their own personal staffs write out questions and opening

statements for a member ahead of time, committee members will frequently "go off script" and ask questions that are interesting to them or that they feel will help them accomplish the goals they want to accomplish at a hearing (Staff Interviews 2010). As such, more than any other aspect of the hearing process, individual rank-and-file members have a large degree of control over their own individual participation in congressional hearings (Hall 1987).

Congressional committee and subcommittee members can use their opening statements and lines of questioning for a variety of reasons. Members can seek clarification on arguments or information presented by witnesses during the hearing, assist in bolstering the arguments made by those called to testify, call into question the validity of arguments made by witnesses, or make clear what they seek to accomplish in a particular hearing (Palmer 2007; Staff Interviews 2010). Personal and committee staff members write possible questions and opening statements for members with a mind toward accomplishing whatever goal the member wants to accomplish at a hearing (Staff Interviews 2010). For instance, staff members may write "tough" or "hostile" questions of witnesses called by the opposite party in order to attempt to discredit the testimony of the witness in much the same fashion that an attorney will discredit the testimony of a witness called by the opposing side at a trial (Staff Interviews 2010). In fact, one staff member noted that committee and subcommittee members will often strategically decide not to ask questions of an opposing party's witnesses in order to restrict the face time of witnesses whose testimony they know that they cannot discredit (Staff Interviews 2010).

Congressional committee members will often use opening statements to make it clear exactly what they are trying to accomplish in the hearing and why they are participating in a hearing, even if only to send in a written statement. Committee members will often use the time given to them for an opening statement or statements throughout a hearing to present statements for the record that serve as either dissent or affirmation of the general tone of information selected by committee and subcommittee chairs. These statements are often carefully crafted by the personal staff members of individual members prior to a hearing (Staff Interviews 2010). These opening statements and lines of questioning are important, because they give members that were not involved in the witness selection process (which most are not) the opportunity to participate in the hearing process themselves. As such, although a committee may be an hospitable venue in terms of collecting and displaying information supportive of a particular side in a debate, committee members that disagree with the prevailing tone of information presented in the hearing may prove inhospitable to certain witnesses by using their own time to deconstruct the information being presented by witnesses (Palmer 2007; LaForge 2010). With the components of hearing preparation laid out, I now turn to a discussion of how the political subsystem and issue contexts of particular hearings are expected to affect the decisions made when putting together the end hearing product.

Information Prioritization Strategies and Policy Subsystems

As the proceeding sections demonstrate, congressional committees are guided by a number of institutional norms and rules when preparing for congressional hearings.

However, how do committees ultimately make decisions on how to collect and display information in congressional hearings? As the next sections demonstrate, congressional committees are guided by a number of contexts when making decisions on how to utilize the congressional hearing process.

When conducting congressional hearings, congressional committee members must confront the decision on what types of individuals to call to testify, what types of information to collect, what types of questions to ask, and how to utilize this information, once it is collected and displayed during the hearing process. Unfortunately, policymakers are bombarded by large amounts of information from individuals seeking to influence the policy process, which offers contradictory signals on the type of policy to be pursued, that they must find some way to properly sift through in order to determine which information should be collected and put on display during congressional hearings (Simon 1983; Jones and Baumgartner 2005). Although the congressional committee system affords Congress the ability to gather information on multiple issues and even multiple dimensions of the same issue at the same time (Jones 1994), even large institutions like Congress are subject to informational attention limits and cannot possibly collect and display all of the relevant policy information available on a policy issue (Jones 2001).

Therefore, policymakers on congressional committees and subcommittees must develop strategies for prioritizing certain types of information and discarding other types of information (Jones and Baumgartner 2005). In such an environment, policymakers can use a wide variety of strategies in making decisions on which information to prioritize in congressional hearings. These strategies include, but are not

limited to, stacking the hearing to present one point of view on the issue, selecting testimony that represents a wide variety of viewpoints on the issue, choosing testimony that is perceived to be of the highest quality available, or even selecting testimony that disagrees with their positions on the issue in order to discredit the information.

When making decisions on the types of strategies that will be utilized in collecting and displaying information in congressional hearings, congressional committee members operate within a larger policy subsystem made up of a variety of actors, including, but not limited to, members of congressional committees that have jurisdictional control over the issue, members of bureaucratic agencies, scientific experts, interest groups, and other interested individuals (Redford 1969; Baumgartner and Jones 1991, 1993). These subsystems are normally organized around a particular substantive, yet manageable, policy issue (i.e. climate change) so that individuals can hope to have an impact over policymaking in the issue (Sabatier and Jenkins-Smith 1993; Sabatier and Weible 2007).

Congressional committees and their members form a key component of policy subsystems, and, as such, actions they take within the policy process are likely to be affected by the dynamics of the subsystem they operate within. First of all, since congressional committees are designed to specialize on a specific set of policy issues (Mayhew 1974), interested non-governmental actors (i.e. interest groups, citizens, etc.) are likely to focus their efforts to affect policymaking on an issue of interest to them on members of committees with a logical claim to jurisdiction over the issue (Baumgartner and Jones 1993; King 1997; Jones and Baumgartner 2005; Workman, Jones, and Jochim 2009). Furthermore, due to the fact that congressional committees are sub-units

of a representative body and the fact that other subsystem actors have a vested interest in affecting the actions of congressional committee members, debates amongst congressional committee members are likely to be representative of the debates on the issue within the subsystem as a whole.

Therefore, since congressional hearings form a key portion of the duties that congressional committees perform during the policymaking process and since congressional committees operate within wider policy subsystems whose actors are likely to have an effect on all policy making decisions congressional committees undertake, it is likely that the immediate subsystem context that a congressional committee operates within will have a sizable effect on the types of information presented and displayed in congressional hearings. In the next section, I will explain several different ideal representations of policy subsystems as detailed in different theories of policy change and congressional organization and provide explanations for how each ideal subsystem context will affect information collection and display in congressional hearings.

Subsystem Contextual Effects on Information Collection and Display

Unified Subsystems. In unified subsystem contexts, subsystem politics are characterized by agreement amongst subsystem actors on the understandings of policy problems. The idea of a unified subsystem originated in conceptions of policy subsystems as iron triangles, in which policymaking was decided upon by relevant interest groups, bureaucratic agencies, and congressional committees, all of whom

generally were in agreement as to what types of policies should be pursued (i.e. Griffith 1939; Maass 1951; Cater 1964; Freeman 1965). While subsequent literature has debunked the idea that only a triad of actors are involved in policy subsystems (Heclo 1978), according to punctuated equilibrium theorists, policy subsystems are, at times, tightly configured around particular issues, with a dominant subsystem having policymaking control over a particular issue (Baumgartner and Jones 1993). This tight configuration of control over an issue can break down over time as different actors (i.e. congressional committees who have not traditionally had control over the issue) fight for control over policymaking within the subsystem (Schattschneider 1960; Baumgartner and Jones 1993; Jones and Baumgartner 2005). Nonetheless, at times, politics within certain subsystems can be characterized by general agreement amongst policy actors within the subsystem.

Agreement amongst actors within policy subsystems can be caused by a number of factors. First of all, due to the fact that members of the subsystem work together to form policy within the issue, they begin to develop shared understandings of the policy problem and tend to compromise with each other on policy decisions (Jones and Baumgartner 2005; Workman, Jones, and Jochim 2009). As such, members of a subsystem will often use their past decisions in determining the correctness of information and will continue to ignore information that is contrary to the decisions they made in the past (Jones and Baumgartner 2005).

Within the specific context of congressional committees, agreement amongst policymakers can also be the result of policymaking actors' quest to gain particularized benefits for their respective constituencies. According to this line of reasoning,

congressional policymakers can be seen as "single-minded seekers of re-election" (Mayhew 1974). As such, any action taken by congressional policymakers is done with a mind toward satisfying constituents enough so that they can be re-elected by these constituents (Mayhew 1974). Congressional committees provide ideal institutions for congressional policymakers to utilize in order to increase their chances of re-election. Most importantly, congressional committees provide a forum by which congressional policymakers can gain particularized benefits for their respective constituencies and credibly claim that they were directly responsible for affecting policy in areas that directly affect their constituents (Fenno 1974; Mayhew 1974).

According to this perspective of legislative policymaking, in order to take advantage of the clear benefits and inherent powers that committees confer to their members, individual legislators organize themselves into committees that will best allow them to use committees for the benefit of their respective constituencies (Weingast and Marshall 1988; Adler and Lapinski 1997). For instance, members who represent large farming communities will seek placement on the Agricultural Committee in order to have direct control over policies that are going to affect large portions of their respective constituencies (Adler and Lapinski 1997). Once in these committees, congressional policymakers seek to cooperate with each other and support each other's demands for constituency benefits in order to ensure legislative support for their own constituency's demands in the future (Mayhew 1974; Weingast 1979; Shepsle and Weingast 1981; Tullock 1981; Weingast and Marshall 1988). Past research has found that politics within committees whose members are more constituency-oriented tend to be more consensual and less divisive, as congressional policymakers support

each other's demands for constituency benefits to ensure legislative support for their own constituency's demands in the future (Fenno 1973; Mayhew 1974; Weingast 1979; Shepsle and Weingast 1981; Tullock 1981; Weingast and Marshall 1988; Smith and Deering 1990; Deering and Smith 1997; Maltzman 1997). Thus, according to this theoretical perspective, policymaking within congressional committees that are more constituency oriented will be characterized by a large degree of consensus and compromise as members seek to gain benefits for their respective constituencies.

With this said, congressional committees are also often faced with the threat that other committees will encroach on their jurisdictional turf and take partial control over the policy issue. Members of the dominant subsystem/committee working on the issue have a vested interest in keeping control over a policy issue in order to prevent their policies being undone by those outside the subsystem who wish to change policy in the issue area (Schattschneider 1960; Baumgartner and Jones 1993; Jones and Baumgartner 2005). As such, members of the congressional committees and subcommittees with formal jurisdictional control over an issue tend to prioritize information that is sympathetic to their particular subsystem's point of view on the issue (Baumgartner and Jones 1993). By contrast, those who do not subscribe to the dominant subsystem's viewpoint on the issue seek to find a venue that will collect information that is consistent with the outside actors' viewpoints on an issue or at the very least will allow outside actors' viewpoints to be heard alongside the viewpoints of the dominant coalition in the debate (Baumgartner 1989; Baumgartner and Jones 1993; Sabatier and Jenkins-Smith 1993, 1999; Wison 2000; Pralle 2003; Wood 2006). Congressional committees associated with subsystems sympathetic to alternative viewpoints on the

issue use congressional hearings, especially non-legislative hearings, in an attempt to reach out of their own formal jurisdiction and compete for influence on a policy issue with committees who have traditionally held control over the issue (Jones, Baumgartner and Talbert 1993; Talbert, Baumgartner and Jones 1995; King 1997).

Congressional committees, as members of unified subsystems, will collect and display information that is consistent with the policy positions of those within the respective subsystems operating within the issue, so that their positions on the policy issue and their qualifications to have control over the issue can be backed up by the information put on display in congressional hearings (Jones, Baumgartner and Talbert 1993; Talbert, Baumgartner and Jones 1995). Furthermore, since disagreements in unified subsystems are likely to be muted between members of the committee in general and the leadership of the two parties in the committee in particular, the testimony collected in committees organized around unified subsystems is likely to be more stacked to represent one particular perspective than any other subsystem type. In unified subsystems, since mostly everyone within the committee agrees on the conception of the policy issue, minority members are not likely to use their privilege to call witnesses at a hearing because the witnesses called by the majority already called the witnesses they would have called to testify. Past empirical evidence on the issue areas of pesticides, nuclear power, and tobacco policy have confirmed such expectations in finding that particular congressional committees likely to be associated with a unified subsystem tend to be biased in terms of the topics of congressional hearings and the types of witnesses called to testify at particular hearings (Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Worsham 2006).

The agricultural committees in both chambers of Congress clearly fit the qualities of the unified subsystem type. According to interviews with congressional committee staff, agricultural committee members are typically in full agreement on witness selection (Staff Interviews 2010). Minority committee members typically will not use their privilege to invite witnesses to testify at a congressional hearing because the majority has selected the individuals they would have asked to have testify (Staff Interviews 2010). Majority committee staff members also typically prepare questions and opening statements for members of the minority, a practice unheard of in other committees in Congress (Staff Interviews 2010). Thus, if the preceding analysis is correct, we should expect the following hypothesis to hold true:

Unified Subsystems Hypothesis: In unified subsystems, information collection decisions will fit the collective biases of the entire membership of the committee.

Competitive Subsystems. In competitive subsystem contexts, subsystem politics are characterized by a competition for control amongst different coalitions made up of individuals motivated by their personal beliefs on an issue (Sabatier and Jenkins-Smith 1993; Weible 2008). The idea of competitive subsystem contexts grows out of the Advocacy Coalition Framework (ACF) of policy change and partisan theories of congressional organization. ACF theorists argue that opposing coalitions of interested individuals will struggle for control over policymaking within the subsystem (Sabatier and Weible 2007) while partisan theories of congressional organization argue that

different political parties will use congressional committees to ensure that their preferred policy proposals pass and that the minority party's policy proposals are not even considered (Cox and McCubbins 1993, 1997, 2005).

Under the ACF, actors within opposing coalitions are motivated by their normative beliefs on how the world should run when processing and collecting information about a particular policy issue (Sabatier and Jenkins-Smith 1993; Sabatier and Weible 2007). Beliefs concerning a policy issue are very difficult to change even through technical and scientific information from respected sources (Sabatier and Weible 2007, 198). Thus, when information comes in conflict with these beliefs, policy actors tend to discount the information and label those that deliver the information as belonging to the opposing coalition in the issue (Sabatier and Weible 2007, 194). As such, the coalition whose members have control over the main committees and subcommittees within a subsystem will likely collect and display information with the intention of providing credibility to the common beliefs they share on the issue and/or discrediting the positions of the members of the minority coalition in the subsystem.

Within Congress, of the many different types of coalitions that can form on different policy issues, political parties make up likely the most important and dominant coalitions. Partisan theorists argue that the rules, procedures, and organizational makeup of Congress are designed by the majority party to exclude the minority party from the legislative process. This exclusion allows the majority party to put pressure on partisan members to conform to the party opinion on issues in order to effectively achieve the majority party's collective goals (Binder 1997; Cox and McCubbins 1993 and 2005). Partially subscribing to the electoral connection school of legislative behavior, partisan

scholars argue that the leadership of the party seeks electoral success and part of this success rests on a party caucus's record in Congress (Kiewiet and McCubbins 1991; Cox and McCubbins 1993, 2005).

Thus, seeking to enhance their collective party reputation through policy outcomes (Forgette 1997), party caucuses and party leadership put pressure on individual legislators to force them to act as unified agents of the party that will pass the policies that the party wants passed (Kiewiet and McCubbins 1991; Cox and McCubbins 1993, 2005). Due to the fact that individual members of Congress also recognize the importance of a party caucus's record to its own success (Kiewiet and McCubbins 1991; Cox and McCubbins 1993, 2005), individual party members will be responsive to these pressures and will act as the party wants them to in their decisions on policy.

Very few policy theorists have considered the potential linkages between partisan legislative organization and policy change. Yet, those that have considered this possibility have given researchers strong reason to believe that political parties can have strong effects over many different stages of the policymaking process. For instance, intense partisanship and the distance between the extreme legislators in both political parties prevented moderate health care reform proposals from being enacted in 1994 (Talbert 1995). Furthermore, majority party members, particularly majority party leaders in the House, are more likely than minority party members to see their proposals pass through the winnowing process by which bill proposals receive attention by congressional committees (Krutz 2005). In terms of the implementation stage of the public policy process, political parties have been theorized to be important in providing

broad representation for citizens in operating the U.S. bureaucratic state (Redford 1969). Finally, although remaining agnostic on the subject, Talbert and Potoski (2002) theorized that there was good reason to expect that either congressional committees or political parties could be responsible for boiling multidimensional issues down to the unidimensional form they take once they are considered on the floor.

Significant evidence demonstrates that beliefs of different coalitions in policy debates have a significant impact on whether or not individuals accept information from scientific experts as being true (Liftin 2000; Sabatier and Jenkins-Smith 1993; Rothman and Lichter 1987). For instance, despite being exposed to the clear consensus amongst scientific experts that the risk involved with expansion of nuclear energy is relatively small, reporters and non-scientific expert elites in the U.S. tend to respond to their ideologies in assessing the safety of nuclear technologies with more liberal individuals considering nuclear technology to be unsafe (Rothman and Lichter 1987). Furthermore, as stated in the previous chapter, despite being exposed to the same information concerning the issue of environmental policy at Lake Tahoe, environmental groups were more likely to incorporate information arguing water quality was a problem into their decision making processes than business and property rights groups (Sabatier and Jenkins-Smith 1993).

Unlike unified subsystems, competitive subsystems are made up of at least two coalitions who disagree vehemently over the conception of policy issues. These two different coalitions are also likely to disagree over the types and tone of information that should be presented about a particular policy topic. As stated earlier, formal rules and informal norms that operate in both Senate and House committees and subcommittees

permit minority party leaders to call at least one, and likely even more than one, witness to testify at a particular hearing (Staff Interviews 2010; Davis 2011b, 2011c). Minority party leaders will be far more likely to use this witness selection privilege when they disagree vehemently with the witnesses selected by the majority party. Therefore, unlike in committees organized around unified subsystems, the tone of testimony of witnesses selected to testify in committees organized around competitive subsystems are likely to be more diverse than testimony presented in front of committees organized around unified subsystems. Nonetheless, since the committee chair is the main actor with control over witness selection decisions, the overall tone of testimony in a hearing will still by and large fit the belief systems of the committee chair. As such, in competitive subsystems, we should expect the following hypothesis to be confirmed:

Competitive Subsystems Hypothesis: In competitive subsystems, committee chairs will use the congressional hearing process to collect and display information that is consistent with their beliefs on an issue.

Specialized Subsystems. In specialized subsystems, members of a policy subsystem genuinely attempt to gather high quality information with the goal of using this information to inform policy decisions. The idea of specialized subsystem contexts grows out of informational theories of congressional organization. According to informational theorists, in order to achieve the goal of crafting good public policy (Fenno 1974), Congress is organized to allow for policy experts to inform the floor

about the potential effects of policies (Krehbiel 1991; Jones 1994). Informational theorists argue that the outcomes of particular policies are uncertain, which poses a difficulty for legislators who prefer to choose policies where the outcome is certain, so that they can take credit for policies that they know will succeed and avoid embarrassment in voting for policies with harmful outcomes for their constituencies (Gilligan and Krehbiel 1987, 1989, 1990; Krehbiel 1991). Thus, individual legislators value expertise on the outcomes of policies because it increases the certainty of the outcomes of policies, as policy experts are more knowledgeable about the effects of a policy than Congress as a whole (Gilligan and Krehbiel 1987, 1989, 1990; Krehbiel 1991). For that reason, informational theorists argue that legislative rules and procedures will be developed that provide incentives for legislators to cultivate policy expertise and specialization in particular policy areas and to share this expertise with fellow legislators (Gilligan and Krehbiel 1987, 1989, 1990; Krehbiel 1991).

Therefore, if the informational perspective is correct, congressional committee members should actively seek to become policy experts on an issue in order to cut down on the information gathering costs for the rest of the institution. As a result, legislative hearings should be constructed so that expert information on a topic is gathered and the testimony of technical and policy experts on a particular issue should be valued, as these individuals are the most likely candidates to provide the information necessary for congressional committee members to become experts on a policy issue. Furthermore, those individuals who provide testimony that is consistent with the views of technical policy experts will also be disproportionately called to testify at congressional hearings.

Past empirical evidence has uncovered evidence that congressional hearings are valued as a genuine information gathering activity. For instance, interest group testimony, about whether a particular bill was favorable or not, had an effect on whether a bill was actually adopted (Burstein and Hirsh 2007). Furthermore, congressional committees do tend to value technical expertise when choosing which interest group lobbyists to testify at congressional hearings, as increased technical expertise amongst lobbyists was significantly related to increased likelihood that a lobbyist would be allowed to testify at congressional hearings (Esterling 2004). If the preceding analysis is correct, we should expect the following hypothesis to be confirmed:

Specialized Subsystems Hypothesis: In specialized subsystems, congressional policy makers will use the congressional hearing process to gather and display information from experts on the issue. Furthermore, there will be more variation in the tone of testimony collected.

Effects of Issue Contexts on Information Collection and Display Decisions

Distributive Issue Contexts. As stated earlier, unified positions amongst policy actors within a subsystem characterize policymaking within unified subsystems. In distributive policy contexts, members of policy subsystems work to make decisions on how to distribute particularized benefits for specific groups and geographic areas in society (Lowi 1964, 1972; Weingast 1979). In such policy contexts, benefits can be accrued to

one group or area within society without taking any benefits away from or incurring disproportionate costs for other sectors of society (Weingast 1979; Shepsle and Weingast 1981). Realizing that their pet projects may not be approved without compromise within the subsystem, actors will generally support the approval of benefits for others within the subsystem (Weingast 1979; Shepsle and Weingast 1981). As such, distributive policy contexts are generally characterized by consensual relations amongst actors within the subsystem (Lowi 1964, 1972). Nonetheless, those within the subsystem may still need to collect and display information in congressional hearings to demonstrate to those outside of the subsystem that the policies and benefits they are proposing are based on solid reasoning (Sabatier 1978; Feldman and March 1981; Weiss 1988; Galster 1996; Shulock 1999). Furthermore, they also must use the congressional hearing process to demonstrate their expertise on the issue in order to thwart efforts by those outside of the subsystem to encroach on their control over the issue (King 1997). Thus, if the preceding explanation is correct, we should expect the following hypotheses to hold true:

Distributive Policy Context Hypothesis: In distributive policy contexts, information collection and display decisions should operate as hypothesized under unified subsystems.

Partisan/Contentious Policy Contexts. As issues become more contentious between the two political parties, it becomes more likely that each committee venue will be split

into competitive coalitions by virtue of the control party leaders have over the committee appointment process and the fact that most committees' memberships break down along partisan lines (Cox and McCubbins 1993; 2005). Therefore, as parties become more polarized on an issue, the likelihood that any naturally sympathetic venues to one side or another will be present decreases, as there will likely be two political parties at odds with each other on the issue within each committee venue. In these cases, we should expect that the personal views of those running the hearing should have more of an impact on the information collection and display process than the type of committee venue in which the hearing takes place.

Anecdotal evidence suggests that, in general, the congressional hearing process acts in a very partisan manner when issues are more controversial and operate along partisan lines (Staff Interviews 2010). Committee staff members tend to select witnesses to testify with an eye toward supporting whatever viewpoint their chair is seeking to get across in a particular hearing (Staff Interviews 2010). While minority staff members are given the chance to select at least one witness to testify at a hearing, the vast majority of witnesses are selected by the staff members of the majority party (Staff Interviews 2010). Furthermore, although this rarely occurs, minority staff members have complained that majority staff members have scheduled hearings on days when they knew a minority witness would not be available likely to avoid having that witness testify at a hearing (Staff Interviews 2010). Thus, as certain issues become more controversial and more partisan, we should observe some of the same types of partisan dynamics described above also occurring in other partisan issues.

However, it should be noted that in partisan issue contests, party identifications of key actors will not necessarily trump belief systems in determining information collection and display decisions in congressional hearings. The polarization of parties into separate camps in the climate change debate may or may not be due to political parties exerting influence over their members to act in a certain way on the issues at hand, even when these actions may conflict with their own belief systems. Nonetheless, even if political parties are not influencing their members to separate into different camps on an issue, the fact that they are divergent on the issue at hand creates a situation where two coalitions diametrically opposed to one another on the issue will be present in committee after committee due to the partisan nature of committee member selection. Thus, no venues will be homogenous in their viewpoints on the issue, and the characteristics of the individual leaders in a committee will play a very important role in information collection and display decisions. As such, I expect the following hypothesis to be confirmed:

Partisan Policy Context Hypothesis: In partisan policy contexts, information collection and display decisions should operate as hypothesized under competitive subsystems.

New and Technical Policy Contexts. One of the main reasons that specialized policy subsystems may form is to reduce uncertainty, so that subsystem members can be assured that the policies they will propose will have their intended effects (Gilligan and Krehbiel 1987, 1989, 1990; Krehbiel 1991). However, uncertainty on particular issues

will vary dramatically from issue to issue. On older and less technical issues, policymakers have worked for long periods of time on the issue and have developed an understanding of how the issue works (McQuide 2007). Thus, they are more certain that the policies they pass will produce intended results. Of course, it is entirely reasonable that different individuals will come to different conclusions about the effects of similar policies. However, due to the long periods of time that have been spent working on the issue, congressional policymakers are, rightly or wrongly, relatively confident that their conclusions are correct and will likely collect and display information with the intention of providing credibility to policy decisions that they have already made (Sabatier 1978; Feldman and March 1981). Thus, as McQuide (2007) notes, it is no great surprise that congressional hearings are used to display information consistent with the beliefs of committee members presiding over the hearing on older less-technical policy areas where policymakers have had the time and certainty to develop their own positions on the issues (Schick 1976; Jones 1976; Kingdon 1981; Whiteman 1985).

However, on newer and more technical policy issues, policymakers do not have the expertise to be confident their conclusions on an issue are correct, if they have developed any beliefs at all. Thus, policymakers typically must genuinely collect quality information so that they can develop expertise on the issue, which will inform their conclusions as to what effects particular policies will have (Ainsworth 2002; McQuide 2007). It is my contention that when policymakers are uncertain, the only cue they have to determine the validity of information is the perceived expertise of the individual giving the information. Additionally, due to the fact that beliefs cannot be relied upon to determine which information to collect and display, the tone of

information should show more variation, as committee members develop positions on the issue. Furthermore, when policymakers are uncertain, they become genuinely curious as to what information perceived experts in a policy area have to say about the policy issue and will use the question and answer phase of the hearing process to extract even more information from those testifying before the hearing. Thus, if the preceding analysis is correct, we should expect the following hypotheses to hold true:

New and Technical Policy Context Hypotheses: In newer and more technical policy contexts, information collection and display decisions should operate as hypothesized under specialized subsystems.

Multi-Dimensional Issue Contexts. Obviously, not all policies fit the neat issue contexts described above. There are multiple dimensions to many policy issues and not all of these dimensions will cause a divide amongst different political parties (Wolbrecht 2000; Talbert and Potoski 2002) or amongst individuals with different belief systems. In Congress, different dimensions of a policy issue can all be considered simultaneously by different policy venues like committees and subcommittees (Simon 1983; Baumgartner and Jones 1993; Jones 2001). As such, the different dynamics on these dimensions may cause subsystems to act very differently depending on the dimension being considered. In such issue contexts, certain dimensions of the issue may exhibit qualities consistent with distributive issue contexts while other dimensions of the issue may exhibit qualities consistent with more partisan issue contexts.

On policy issues that are more complex and multidimensional, multiple existing policy subsystems working on other related issues have a vested interest in policymaking on the issue (Zafonte and Sabatier 1998; Fenger and Klok 2001; Weible 2008; Jones and Jenkins-Smith 2009; Weible, Sabatier, and McQueen 2009). Each subsystem working on the issue may exhibit completely different characteristics depending on what dimension of the issue is being examined. On dimensions of the issue with a distributive component, committees within subsystems whose members have a vested interest in extracting benefits on the issue may exhibit qualities consistent with unified subsystems when collecting and displaying information in hearings. On the other hand, on dimensions of the issue with a partisan component, committees within subsystems may exhibit qualities consistent with competitive subsystems when collecting and displaying information in hearings. As such, if the preceding logic is correct, we should expect the following hypothesis to be confirmed in the context of multidimensional issue contexts:

Multi-Dimensional Policy Context Hypothesis: In dimensions of multi-dimensional issues that are more distributive, information collection and display decisions should fit the perceived subsystem bias of that committee. On the other hand, in dimensions of multi-dimensional issues that are more partisan, committee chairs will use the congressional hearing process to collect and display information that is consistent with their beliefs on an issue.

Conclusion

As this chapter has demonstrated, many different factors are considered by committee members when making decisions on how to collect and display information in congressional hearings. Furthermore, the rules and norms that guide the process of preparing for congressional hearings, particularly those involving witness selection, are set up to clearly advantage the majority party in hearing decisions while still allowing for participation by the minority party in the process. In general, I expect that the key factors affecting information collection and display decision in congressional hearings will differ depending on the issue and subsystem contexts within which a hearing is conducted. In the next chapter, I will lay out the research model that I will use to test the expectations and hypotheses that were derived in this chapter.

Chapter 3. The Systematic Study of Congressional Hearing Politics

Introduction

In the previous chapter, I argued that the factors that drive congressional hearing information collection and display decisions will differ based on the context in which a particular hearing takes place. To test this argument, I will conduct a series of analyses studying different facets of the congressional hearing process in three distinct issue contexts and compare how the factors influencing congressional hearing decisions change based on the issue being studied. In this chapter, I will describe in fuller detail the research design that I will use in subsequent chapters to test propositions made in the previous chapter.

Selection of Issue Contexts

The issue context that subsystems operate within is hypothesized to be a powerful condition for which variables will be significant indicators of information collection and display decisions. In issue areas with a sizable distributive component, committees with members whose constituents have a vested interest in the issue are likely to display information supportive of these interests regardless of the belief systems of those controlling the committee. On the other hand, in issue areas with a sizable partisan component in which the likelihood that two groups antagonistic toward each other will be represented on committee after committee becomes more likely, the belief systems of those controlling the committee venue will be a significant

determinant of the tone of testimony on the issue. In issue areas with high degrees of perceived uncertainty involved, congressional hearings will be used to genuinely collect information from witnesses. Finally, in multi-dimensional issue areas, the main factors driving information collection and display decisions will depend on what dimension of the issue is being examined. In order to study the expectations derived from my theory of congressional hearing politics, I plan on performing a series of separate analyses on the following issue areas: tobacco, climate change, and biotechnology. In this section, I will describe the reasoning behind choosing each of these topic areas.

Similarities in Issue Areas. Before discussing the different qualities of each individual issue area that caused each to be selected, it is important to first discuss the similar qualities of the issue areas that also led to their selection. First of all, each of the issue areas chosen has components that have generated controversy between different segments of society. Obviously, many topic areas addressed in congressional hearings are relatively non-controversial. In such topic areas, information produced by policy actors is likely to be fairly homogenous in tone since most policy actors already agree on the definitions and solutions to policy problems in these issue areas. While these issue areas still form a large portion of the issues addressed in congressional hearings, the politics of information collection and display in such issue areas are likely to be uninteresting due to the lack of variation of the one of information. As such, I was mindful of choosing more controversial issues where variation in information collection and display strategies is likely to be present.

Second, each of the issue areas chosen has sizable technical components that increase the difficulty of understanding the issue for policymakers and the general public. Furthermore, policy options in each issue area entail various risks that would cause policymakers to want to be more certain in making the best policy decision possible for their constituents. Once again, many issue areas addressed by congressional hearings (i.e. tax policy, civil rights policy) are relatively well developed and easier for policymakers and the general public to understand. Although information collection and display strategies in non-technical issues areas are very interesting and important to understand, I choose to focus on technical policy issues because they provide an interesting test of my theory. As noted in the last chapter, my theory argues that in most cases committee members will be driven by certain biases when selecting information to collect and put on display in congressional hearings. Only rarely, when significant uncertainties exist in an issue and policymakers' existing biases cannot be easily utilized to help form opinions on the issue, will congressional policymakers utilize the congressional hearing process to genuinely collect information and come to a better understanding of what policies to craft in the issue area. However, if congressional policymakers would be motivated to consistently use the congressional hearing process to genuinely collect information to make the best decisions possible, it would be in technical issue areas where advice from perceived experts on these issue areas is likely to be valued by congressional policymakers. As such, I intentionally select technical issue areas to see whether policymakers use the congressional hearing process to collect and display information consistent with their own biases even in technical issue areas.

Distributive Issue Context – Tobacco. Tobacco policy is chosen as an issue area, because it is representative of issues where committees have acted as unified subsystems even as other committees encroach on its jurisdictional turf. Much ink has been spilled attempting to understand the dynamics of tobacco policy. As these studies have uncovered, the agricultural committees in both chambers of the U.S. Congress serve as the "institutional anchors" for the tobacco promotion subsystem (Worsham 2006, 439). During the early stages of the issue, agricultural committees enjoyed nearly full jurisdictional control over tobacco policy, and thus, the informational content of congressional hearings on the issue (Baumgartner and Jones 1993; Talbert, Jones, and Baumgartner 1995; Worsham 2006). Agricultural committees used this jurisdictional authority to hold hearings that were stacked with testimony that emphasized the importance of the tobacco industry to the U.S. economy and largely filtered out testimony attempting to emphasize the health risks of tobacco use.

Although there has been some debate on the degree to which the tobacco subsystem's influence over tobacco policy has waned over time (see Worsham 2006; Givel 2006), researchers generally concur that the tobacco subsystem remained unified and vigorously supportive of the tobacco industry even as other subsystems entered the fray (Baumgartner and Jones 1993; Talbert, Jones, and Baumgartner 1995; Worsham 2006). Even while other committees came on the scene to compete for jurisdictional turf with the agricultural committee, the agricultural committee served as a rather dependable venue for tobacco proponents (particularly tobacco farmers) to state its case to members of Congress and the general public. Thus, the agricultural committee within

the tobacco policy area serves as an interesting example of how unified subsystems may act in information collection and display decisions.

Partisan Issue Context – Climate Change. Climate change is chosen as an issue area because it represents a relatively young issue area, in which parties have aligned themselves into separate camps across time. Wildly divergent opinions have developed amongst actors involved with the climate change issue. On the one hand, there are members of the environmental coalition who argue that climate change is a significant problem and that current economic practices will only lead to future environmental problems that could threaten the world's survival (Liftin 2000, 249). On the other hand, there are members of the economic coalition who argue that climate change is not a significant problem, evidence is not clear enough to warrant policy action on the issue, and attempting to solve the problem will only harm the economy (Liftin 2000, 249).

With the economic costs of solving the problem on the one hand and the increased visibility of the problem as the result of the advocacy of such public figures as Al Gore on the other hand, climate change is a visible and controversial enough issue that could potentially provide an issue around which two political parties can align themselves. Indeed, significant evidence has been found that political parties have aligned themselves into distinct camps on environmental issues in general. More specifically, based on League of Conservation Voters voting scores, Republicans and Democrats have become increasingly divided over the issue of environmental policy since the 1970's (Shipan and Lowry 2001; 245). Therefore, if political parties have diverged from each other on all environmental policy issues, there is good reason to

expect that parties have aligned themselves around the issue of climate change in particular.

Multi-Dimensional Issue Context – Biotechnology. Biotechnology refers to the use of living matter to modify other materials (Smith 2004; McQuide 2007). As such, the policy area involves a wide variety of issue dimensions, ranging from the genetic manipulation of crops to encourage agricultural productivity to the use of human stem cells to assist in curing diseases. Depending on the dimension of the issue being examined by a particular hearing and the context in which a particular hearing took place, information collection and display decisions in hearings concerning biotechnology may be driven by a number of different factors. For instance, during the early stages of the biotechnology issue, members of Congress initially knew relatively little about the issue. As such, before belief systems developed on the issue, individual members of Congress lacked confidence in the proper action to take when forming policy on the issue. Thus, congressional hearings on the biotechnology issue area may have been used for genuine information collection in order to cut down on uncertainty in the early stages of the issue.

However, as the issue has progressed and committee members have become more and more confident in their positions on the issue, it is likely that information collection and display decisions have begun to be driven by the institutional biases of particular committees and the belief systems of committee members. The degree to which either the institutional biases of committees or the belief systems of committee members will affect information collection and display decisions will likely be

dependent on what part of the biotechnology issue area is being examined. On the one hand, parts of the issue have distributive components that are likely to encourage members of unified subsystems to act in concert with one another. For instance, the genetic manipulation of crops provides farmers with a new tool to increase agricultural productivity and ward off pests without the use of pesticides. Thus, members of both political parties within the agricultural subsystem are likely to be supportive of biotechnology, due to its importance for farmers in their respective districts, and will likely use congressional hearings on the topic to encourage development of this tool for future use.

On the other hand, biotechnology also can be used to create and clone human embryos and human embryonic stem cells for health purposes. Due to conservative beliefs that the human embryo is where life begins and should be respected, these uses of biotechnology have been a source of very contentious debates between the two political parties on the issue. As such, we should find that the tone of information in hearings concerning the use of biotechnology to create and clone human embryos and human embryonic stem cells for health purposes should be dictated by the belief systems of committee chairmen presiding over the hearing.

Congressional Hearing Documents as a Data Source

The main focus of this project is to understand how congressional policymakers determine how to collect and display information in congressional hearings across unified, competitive, and specialized subsystem types. Past research studying the change in the tone of information in congressional hearings has relied on the topics of

congressional hearings and the group affiliation of those testifying (rather than the individual testimony given) to determine the valence of congressional testimony (Baumgartner and Jones 1991; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Worsham 2006). While, as I will discuss later, it is important to study the factors that account for variation in the group affiliations of individuals asked to testify at congressional hearings, it is not sufficient to gaining a true understanding of how congressional policymakers actually decide what information to collect and display in congressional hearings.

Assuming that the group affiliations of the individuals that are asked to testify will be indicative of the actual information presented in hearings can be problematic in light of the fact that past research has uncovered that individuals have presented information about particular issues that diverges from what one may expect given their organizational affiliation (Jenkins-Smith and Silva 1998). Furthermore, in light of the finding that the public has been persuaded by information that is contrary to what one would expect given the organizational affiliation of those relaying the information (Jenkins-Smith and Silva 1998), it would not be surprising to find that congressional policymakers seeking to add credibility to their own arguments may purposefully seek out individuals to testify at hearings who agree with the policy positions they seek to advance even though their organizational affiliation suggests that they should not. Finally, in light of the fact that committee staff generally interview prospective witnesses prior to allowing them to testify at the hearing, and thus, have some knowledge of the content of their testimony prior to the hearing taking place (Palmer 2007; Davis 2007), it seems necessary to actually study the content of the testimony to

discover the main factors that determine what positions the testimony favors if it favors a particular positions at all.

Congressional hearing documents contain a wealth of information that can give powerful insight into the information collection and display decisions made by congressional committee members. In particular, by analyzing congressional hearing documents, the tone of information presented in congressional hearings can be directly measured and analyzed in order to discover whether committees with particular predispositions purposefully select witnesses that will testify in support of these predispositions. Furthermore, congressional hearing documents also contain the statements of members participating in a hearing, which can be analyzed to uncover the reasons why individual committee members participate in particular hearings.

Unfortunately, despite the significant insights that can be gained from analyzing congressional hearing documents, only recently have researchers begun to tap into congressional hearings as a data source for systematic research. As McQuide (2007) notes, many researchers are skeptical of the validity and reliability of congressional hearings as a data source (62). However, as Esterling (2004) indicates, questions about the reliability and validity of congressional hearings arise from the fact that few studies have utilized congressional hearings as a source of data for systematic research (251). Fortunately, with recent advances in the online availability of congressional hearing transcripts on sites like ProQuest Congressional (https://web.lexis-nexis.com/congcomp) and GPO Access (http://www.gpoaccess.gov/chearings/index.html), more researchers have been able to make use of the vast amount of information contained in congressional hearings for the

purpose of conducting systematic research (for recent examples, see Esterling 2004, 2007, 2010; McQuide 2007; Holyoke 2008). As congressional hearings are utilized more frequently as a data source, researchers will gain more confidence in their validity and reliability.

Nonetheless, although technological improvements have increased the availability of congressional hearings and potentially the validity and reliability of hearings as a source of data, some researchers still doubt that any valuable insights can be garnered from analyzing congressional hearing documents. At the extreme end of the spectrum, some theorists have argued that congressional hearings serve no greater purpose than a "window-dressing" event or "propaganda channel" through which congressional committees and subcommittees can display carefully selected information to actors outside the committee (i.e. members on the floor, interest groups, the general public, etc.) in order to drum up support for positions espoused by committee members and/or "claim credit" for providing policy benefits to constituents (Truman 1951; Berry 1984; Davidson and Oleszek 1985). Yet, for every scholar arguing that congressional hearings are events designed to promote a particular position on an issue, there are just as many scholars that argue that witnesses are selected with a mind toward hearing from a balanced set of perspectives on a particular issue (Leyden 1995; Wright 1996) and that hearings can be informationally useful for members of Congress (Weeks et al. 1986; Johnson 1995; Diermeier and Feddersen, 2000; Esterling 2004; Burstein and Hirsch 2007). By analyzing congressional hearing documents and the tone of information presented by witnesses and committee members, the question of whether information is stacked to fit the predisposed positions of committee members can be more concretely

answered than it has in the past. Nonetheless, the mere suspicion that hearings are "dog and pony shows" should not deter researchers from analyzing hearing documents to more directly determine whether this suspicion is in fact validated by the information contained in these documents.

Selection of Congressional Hearing Cases

As noted in the previous section, congressional hearing documents contain a wealth of information about the congressional hearing process that can be extracted to better understand the decisions made by congressional policymakers when preparing for and conducting hearings. As such, in order to properly understand the hearing process in the climate change, tobacco, and biotechnology policy areas, I had to identify all of the congressional hearings conducted on these issue areas and obtain copies of the transcripts of these hearings. To ensure as comprehensive a list of congressional hearings as possible, the following two pronged approach for selecting congressional hearing cases was utilized.

First, hearings were selected by searching through hearings from the "Congressional Hearings Data Set" of the *Policy Agendas* project (http://www.policyagendas.org). In the *Policy Agendas* project, information concerning the topic of hearings has been collected to allow hearings about particular topics to be easily accessed. Hearings were selected in the following topic areas related to the tobacco, climate change, and biotechnology issue areas:

- **Tobacco** – Agriculture (Agricultural Marketing, Research, and Promotion; Agricultural Trade; Animal and Crop Disease and Pest Control; Food Inspection and Safety; General Agriculture; Government Subsidies to Farmers and Ranchers, Agricultural Disaster Insurance); Health (Tobacco Abuse, Treatment, and Education)
- **Climate Change** – Environment (Air pollution, Global Warming, and Noise Pollution; Research and Development; General Environmental Issues); International (General International Affairs and Foreign Aid Issues; International Resources Exploitation and Resources Agreement); Space, Science, Technology, and Communications (Weather Forecasting and Related Issues, NOAA, Oceanography; Research and Development)
- **Biotechnology** - Agriculture (Research and Development); Environment (Research and Development); Health (Research and Development); Space, Science, Technology, and Communications (Research and Development)

In order to ensure all cases were selected, I then conducted searches using *ProQuest Congressional Universe* (https://web.lexis-nexis.com/congcomp) for hearings using the search terms related to the different topic areas being examined. These terms were selected because they are either synonymous with the issue area being studies or make up subsections of the larger issue area being examined.

- **Tobacco** - tobacco, cigarette, cigar, and smoking
- **Climate Change** - climate change, global warming, and greenhouse gas
- **Biotechnology** - biotechnology, genetically enhanced, genetically altered, genetically engineered, genetically modified, genetic engineering, genetic test,

cloning, embryonic transfer, genome, gene therapy, recombinant, somatic cell, stem cell, transgenic, biodegradation, bioremediation, and growth hormone

From these searches, I selected those hearings whose descriptions noted that the whole hearing or a substantial part of the hearing (i.e. at least one panel of the hearing) dealt with these policy areas. If only a part of the hearing dealt with the policy area being studied, only statements made by witnesses and committee members dealing with the issue area were coded. PDF copies of the hearings identified via the methods described above were then downloaded from the *ProQuest Congressional Universe* website (https://web.lexis-nexis.com/congcomp). In the next section, I will turn to an explanation of how data to measure key dependent variables was collected from congressional hearing transcripts.

Testing the Conditional Theory of Information Collection

As the last chapter described, I theorize that information collection and display decisions at all stages of the hearing process will be affected by the specific subsystem context that the hearing is operating within. To test the theory described in the previous chapter, I plan to conduct a series of analyses on each phase of the congressional hearing process. There are essentially three phases of the congressional hearing process that will be examined. First of all, committee members choose which individuals or groups will testify at hearings. Secondly, the individual presents information before Congress. Third, congressmen have the opportunity to ask questions of those testifying before the committee. In the next sections, I will discuss why each of the dependent variables being studied is important to study and how the data will be collected. I then

discuss how each of the independent variables is specifically hypothesized to affect each of the separate independent variables to be analyzed and how each of the independent variables will be operationalized.

Dependent Variables

Tone of Committee Member Statements. Individual rank-and-file legislators are not typically intimately involved with the selection of witnesses in congressional hearings since control over that process is usually reserved for committee and subcommittee chairs (Sachs 2003, 11; LaForge 2010). Nonetheless, these members still are typically given the chance at the start of a hearing to present an oral statement and are given an additional five minutes during the course of a hearing to use as they please. Committee members will often use this time to influence the hearing process through questioning the validity of arguments made by witnesses (Palmer 2007) and through orally presenting statements for the record that serve as either dissent or affirmation of the general tone of information selected by committee and subcommittee chairs. When not present, committee members are also given the privilege of submitting statements for the record, which also serve to establish a record of dissent or affirmation for the overall tone of the hearing. As such, although a committee may be an hospitable venue in terms of collecting and displaying information supportive of a particular side in a debate, committee members that disagree with the prevailing tone of information presented in the hearing may prove inhospitable to certain witnesses by using their own time to deconstruct the information being presented by witnesses (Palmer 2007; LaForge 2010).

This part of the process is very important to understand, because it allows us to determine the intent of congressional policymakers when they call a hearing and why they make decisions on who they call to testify. This is a part of the process that cannot be wholly captured by simply studying witness testimony alone since congressional policymakers will sometimes call witnesses whose testimony they disagree with in order to directly question and discredit certain individuals with which they disagree. For instance, through the congressional hearing process, congressional committee and subcommittee members have the opportunity to call executive officials from the opposing party to testify before them and directly attempt to discredit the information they provide. Analysis of opening statements allows us to understand what the actual goal of a hearing is even when they purposely call witnesses that disagree with them on certain issues. Furthermore, analysis of opening statements also allows us to understand the main part of the process where rank-and-file members get to participate in the hearing process, since they are normally left out of the witness selection stage of the process.

In order to capture the influence that rank and file members have over the hearing process, I will study the tone of statements given by congressional committee members in a hearing. Congressional committee members will often use these statements to make it clear exactly what they are trying to accomplish in the hearing and why they are participating in a hearing, even if only to send in a written statement. Statements were selected as follows. In most cases, committee members either orally recited an opening statement or submitted a written statement. In these cases, the statements were analyzed to determine their tone. However, not all committee members

participating in a hearing recited or submitted opening statements. Nonetheless, most times, in these cases, committee members used portions of the five minutes assigned to them for questioning witnesses to make fairly lengthy statements discussing their intent in asking questions and/or their reasons for participating in a hearing. In these cases, these statements were analyzed to determine their tone.

The tone of committee member statements was determined as follows. Particular arguments made over the course of a statement were coded as either supportive toward a particular point of view, moderate, or opposed to a particular point of view. More specific information on how each statement was assigned can be found in Appendices C, D, and E.

Using PDF XChange Viewer's free PDF editing software[9], notations were made to denote the positive, moderate, and negative suppositions made over the course of a statement. Each sentence of the statement was coded as either positive, moderate, or negative toward the issue. The whole statement was also highlighted to determine how much of the statement was made up by arguments in each of the different categories discussed above. After highlighting the statement, the statement could be better analyzed to determine how much of each type of statement was made up by different categories of statements. In most cases, the calls on statements were quite easy as the vast majority of the statement was made up of statements that fit one type of category of statement. However, in cases where statements were made up of mixes of statements,

[9] PDF XChange Viewer allows users to highlight and mark up PDF documents obtained by other sources. This software can prove invaluable to individuals seeking to content analyze documents on a limited budget. This software can be found at the following website: http://www.tracker-software.com/product/pdf-xchange-viewer

highlighting the document helped to visualize how much of the document was made up of different categories of statements.

Based on the content analysis above, each individual statement was assigned on overall score on a five point scale from -2 (very pro-economic on climate change/very negative toward tobacco/very negative toward biotechnology) to 2 (very pro-environmental toward climate change/very positive toward tobacco/very positive toward biotechnology) to denote the denote the tone of the statement toward the issue area in question. The following generic scale describes how I made decisions on how to code each overall statement:

- Very negative (-2): Statements where most or all (over ¾) of the statement was made up of negative arguments toward the issue and very little (less than a ¼ of the statement) to no positive or neutral arguments
- Negative (-1): Statements where negative arguments are made in over ½ of the statement and positive arguments are made in between ¼ to ½ of the statement. Statements where negative and neutral arguments were made in an equal proportion of the statement were also coded as negative.
- Neutral (0): Statements where neutral arguments were made in over ¾ of the statement. Statements where around ½ of the statement is devoted to both negative and positive statements are also coded as neutral
- Positive (1): Statements where positive arguments are made in over ½ of the statement and positive arguments are made in between ¼ to ½ of the statement. Statements where positive and neutral arguments were made in an equal proportion of the statement were also coded as positive.

- Very positive (2): Statements where most or all (over ¾) of the statement was made up of positive arguments toward the issue and very little (less than a ¼ of the statement) to no negative or neutral arguments

Tone of Testimony. The main goal of this project is to determine how specific characteristics of committees influence the overall tone of testimony presented in congressional hearings. As stated earlier, while it is important to study the factors that account for variation in the individuals and groups asked to testify at, understanding the dynamics that lead to certain groups and individuals being asked to testify is not sufficient to gaining a true understanding of how congressional policymakers actually decide what information to collect and display in congressional hearings. In light of the fact that committee staff generally interview prospective witnesses prior to allowing them to testify at the hearing, and thus, have some knowledge of the content of their testimony prior to the hearing taking place (Palmer 2007; Davis 2007), it seems necessary to actually study the content of the testimony to discover the main factors that determine what positions the testimony favors if it favors a particular positions at all.

I analyze the tone of information presented in congressional hearings on the topic of tobacco, climate change, and biotechnology by analyzing the actual content of hearing testimony itself. The tone of hearing testimony was determined as follows. Particular arguments are made over the course of a statement. Each statement was coded differently depending on the issue being examined. More specific information on how each statement was assigned can be found in Appendices C, D, and E. For climate change, statements were coded as either supportive of the economic coalition in the

climate change debate, moderate, or supportive of the environmental coalition in the climate change debate. For tobacco policy, statements were coded as either supportive toward the tobacco industry, moderate, or opposed to the tobacco industry. For biotechnology policy, statement were coded as either supportive toward the biotechnology, moderate, or opposed to the biotechnology.

Using PDF XChange Viewer's free PDF editing software, notations were made to denote the positive, moderate, and negative suppositions made over the course of a statement. I use the same coding criteria for coding individual pieces of testimony as I did for coding opening statements of congressmen. I then take the average of the scores for each piece of testimony given before a particular committee in a particular Congress to measure the overall tone of testimony in that committee for that Congress.

Dependent Variable – Group Affiliation. A wide variety of individuals get called to testify before congressional hearings including, but not limited to, policy analysts, scientists, bureaucrats, interest groups, politicians, and citizens. For my theory, it is important to test the determinants of who gets called to testify at these hearings for a variety of reasons. First of all, studying the groups that testify at hearings give researchers a method of understanding what types of sources are favored by particular congressional committees and how the types of groups favored change across time and across different subsystems. Second, the expertise of individual witnesses can only be determined by virtue of examining their professional credentials as represented by their working title and the organization that they work for.

In each individual issue area, there will be specific groups that are interesting to study for a variety of reasons. These different groups and the reasons for studying them will be presented in the subsequent empirical chapters. Nonetheless, every chapter will also consist of analysis of broad categories of groups that tend to testify at all hearings regardless of the issue being discussed. In the analysis, I will discuss how each of these groups have ebbed and flowed in terms of their selection by congressional committees and subcommittees over time and what this evolution says about how witnesses are selected in these issue areas over time. In general, there are five types of groups that testify at congressional hearings. These groups include the following:

- **Experts –** Individuals representing non-ideological think tanks, universities, governmental research institutions (i.e. NASA and DOE's nonpartisan research institutions), or any type of organization respected for the quality of the information they are providing
- **Representatives of Private Interests** – Individuals clearly trying to represent the viewpoints of an organization or group in society. These can include interest groups, businesses, and private individuals (i.e. farmers).
- **Federal Bureaucratic Officials** – Individuals speaking on behalf of a particular federal executive governmental agency or department (i.e. Department of Energy, Environmental Protection Agency)
- **State and Local Politicians –** Any representative of a state or local governmental entity (bureaucratic, legislative, executive, or otherwise)
- **Federal Politicians –** Current and former members of Congress (unless a former member of Congress is representing one of the groups above)

I will analyze the affiliations of the groups giving the testimony, which is given in the *Lexis-Nexis Congressional* database descriptions of the testimony. I then break down hearing testimony on the issue areas studied into typology of the groups giving the testimony above as well as any additional typologies necessary for each individual issue area. I will then take the percentage of testimony given by each of these groups in a particular committee or subcommittee during a particular congressional session.

Independent Variables

Personal Beliefs. Individuals involved in the policy process are motivated by their normative beliefs on how the world should run when processing and collecting information about a particular policy issue (Sabatier and Jenkins-Smith 1993; Sabatier and Weible 2007). Thus, one of the most prevalent cues that policy actors may use to process and collect information is whether the information fits their normative views on an issue. Policy actors, including those that sit on congressional committees and subcommittees, tend to hold the following types of beliefs on policy issues (Sabatier and Weible 2007, 194-196):

- **Deep core beliefs –** very general normative assumptions about human nature and the role of government in providing for the public good that span across all policy issues
- **Policy core beliefs –** more specific normative assumptions concerning an entire policy issue
- **Secondary beliefs –** very specific assumptions about single policy issues that are not considered to encapsulate an entire policy issue

If these belief systems guide how committees and subcommittees process information, it seems logical to expect that these belief systems will also have a powerful influence on what types of information these institutional entities collect during the congressional hearing process.

In the case of climate change policy, deep core beliefs should affect information collection and display decisions as follows. More conservative individuals would likely be more supportive of economic interests in the climate change debate, as the increased regulation of particular industries that would be required to reduce greenhouse gas emissions is antithetical to conservative belief systems. By contrast, more liberal individuals tend to believe in a more active role for the government in protecting individuals from environmental harm. In the case of tobacco policy, more conservative individuals would likely be more supportive of tobacco interests as the tobacco industry represents a significant portion of the economy and regulation of particular industries is antithetical to conservative belief systems. By contrast, more liberal individuals are more supportive of policies that regulate industries in order to protect the public, and thus, may be less supportive of tobacco interests. Finally, in the issue area of biotechnology, on dimensions of the issue concerning the use of human embryos and stem cells for health purposes, more conservative individuals should be less likely to be supportive of biotechnology while more liberal individuals will be more supportive of this technology. In order to measure the ideological preferences of committee and subcommittee members that characterize deep core beliefs, I use Poole and Rosenthal's first-dimension DW-Nominate scores, which are based off of roll call votes taken by the

committee members (http://voteview.org). This variable is measured on a continuous scale from -1 to 1 with higher scores indicating a more conservative member ideology.

In the specific case of climate change policy, policy core beliefs comprise more specific beliefs about the role of government specifically in protecting the environment. These beliefs may slightly differ from the ideological beliefs that characterize deep core belief systems. For instance, although some individuals may have conservative beliefs about the role of government in general, these same individuals may believe that protection of the environment is a special instance, in which aggressive governmental policies are necessary. In order to measure the more specific policy core beliefs that span environmental policies in general, I use the League of Conservation Voters voting scores (http://www.lcv.org/scorecard/), which are based off of roll call votes taken by the committee members on bills with an environmental dimension. This variable is measured on a continuous scale from 0 to 100 with higher scored indicating a more pro-environmental belief system.[10]

Ideological Polarization. In the context of the overall tone of climate change testimony, it is very likely that ideological polarization between political parties may have another effect aside from making venues more competitive. According to committee rules, committee chairmen are required to allow the minority ranking member to call at least one witness to testify at a hearing (Sachs 2003, 11; Carr 2006, 10-11; Staff Interviews 2010). Minority ranking members will likely be relatively more

[10] Measures of policy core beliefs are not as readily available in issue areas related to tobacco policy and biotechnology policy, and thus, cannot be used.

likely to exercise this privilege when the ranking member's views are far apart from the chairman's and the ranking member does not believe his or her views will be represented at the hearing otherwise. In particular, climate change was a relatively non-contentious issue at its start with both parties in agreement about the potential seriousness of the problem. Thus, minority ranking members (mostly Republicans) likely did not exercise their privilege at the issue's start as they agreed with the decisions made by committee chairmen.

However, as time has worn on and the two parties have become more and more divided on the issue of climate change, the impetus for the minority ranking member to exert the privilege to call at least one witness to testify on behalf of their position on the issue has become much stronger. Due to the fact that the two parties started from a pro-environmental position toward the climate change issue and the fact that Democrats have stayed relatively pro-environmental over time while Republicans have become significantly more pro-economic in their views, it is likely that this polarization has had the effect of causing testimony to become more pro-economic rather than more pro-environmental over time. Democrats were relatively equally motivated throughout time to ensure the pro-environmental position would be presented at these hearings, while Republicans have become more motivated to ensure that the pro-economic position is represented as they have strayed away from the pro-environmental position on the issue. In order to measure this effect, I create two variables taking the absolute values of the differences between both the DW-Nominate scores and the League of Conservation Voter Scores.

Policy Subsystem Bias. As stated earlier, some theorists argue that differences in the collection of policy information will be influenced by the biases involved with the subsystem that a particular committee or subcommittee operates within (Baumgartner and Jones 1991, 1993; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Jones and Baumgartner 2005; Workman, Jones, and Jochim 2009). According to this perspective, biases in the ways different institutional venues characterize particular policy issues through congressional hearing testimony must be apparent. If congressional committees and subcommittees do not show bias in the way they frame particular policy issues, each committee would be just as likely as another to present information that was favorable to the status quo conception of the issue. Thus, different congressional committees attempting to extend their jurisdiction over a policy issue would make no impact over how the issue is defined and whether policy change occurs on a policy issue or not.

In the cases of tobacco and biotechnology policy, due to the consensual nature of politics within the agricultural subsystem and the historical role of the committee in promoting all agricultural commodities, it is expected that hearings held by agricultural committees in Congress will be significantly more positive toward the tobacco industry and the use of biotechnology than a typical run of the mill committee. In the case of climate change, if there are subsystem biases in the collection of information, congressional committees that are expected to be sympathetic to interests that downplay the significance of the climate change problem (i.e. energy and foreign policy committees) will preside over hearings that produce more pro-economic testimony toward the issue of climate change. Congressional committees that are expected to

highlight the importance of tackling the climate change issue (i.e. environmental and science committees) will preside over hearings that produce more pro-environmental testimony toward the issue of climate change.

Controversial Issue Dimension. As stated earlier, in the biotechnology issue area, it is expected that dimensions of the issue dealing with the creation and cloning of human embryos and human embryonic stem cells for health purposes will encourage more conflict between the political parties than other issue dimensions of the issue (Sheingate 2006). When committees and subcommittees deal with this issue dimension, it should have two distinct effects on the tone of information. First of all, in this dimension of the issue we should expect that differences in the belief systems of committee chairs will be an important determinant of the tone of hearing testimony while on other dimensions of the issue the belief systems of committee chairs will be relatively unimportant. Secondly, since committee chairmen are required to allow the minority ranking member to call at least one witness to testify at a hearing (Sachs 2003, 11; Carr 2006, 10-11; Staff Interviews 2010), even when the committee chairs are liberal, hearings on these issue dimensions will be relatively more negative toward biotechnology than a typical biotechnology hearing because the conservative will be more likely to exercise their privilege to call witnesses that are critical of the use of biotechnology to create and clone human embryos and embryonic stem cells. In order to consider these effects, I create a variable that equals 1 if the committee or subcommittee held at least one hearing dealing with the topic of the creation or cloning of human embryos and stem

cells for health purposes. This variable was then interacted with the ideology of the committee chairs.

Control Variables

Constituency Characteristics. In the specific case of tobacco policy, past findings that agricultural committees tended to produce information sympathetic to the tobacco industry in congressional hearings could be attributed to the fact that the main leaders in the agricultural committees and subcommittees holding hearings on tobacco policy were made up of individuals from the leading tobacco-producing states. Thus, chairs from tobacco-producing states may have stacked hearing testimony to produce information consistent with their own constituents' interests in the issue and encountered little resistance due to the fact that the minority leader represented similar constituent interests, and thus, tended to agree with the selections made by the chair. In any event, if committee members come to hearings with the intention of representing their own interests, we should expect that those individuals representing tobacco interests will participate with the purpose of bolstering information supportive of tobacco interests and debunking information in opposition to tobacco interests. As such, this consideration must be controlled for in my analysis.

In order to capture the effect of constituency interests on the subject of tobacco policy, I use Worsham's (2006) criteria for coding tobacco states. According to Worsham (2006), tobacco states include the following: North Carolina, Kentucky, Tennessee, Virginia, Georgia, and South Carolina. As Worsham (2006) states,

according to the Economic Research Service of the USDA these states comprise the leading producers of tobacco. Five of the six also comprise the largest manufacturers of tobacco products. Thus, I create a dummy variable that is coded 1 if committee members hail from these tobacco states and 0 if they do not.

Time. It is expected that some elements of information collection and display in tobacco policy simply cannot be accounted for by elements of changes in different key characteristics between different committees across different time periods. To control for the effects of time on informational collection, I include dummy variables for each decade that congressional hearings took place: (1971-1980; 1981-1990; 1991-2000; 2001-2006).[11] The 1970's (1971-1980) serve as the reference decade for variables the biotechnology and tobacco models while the 1980's serve as the reference decade for variables in the climate change model.

[11] Although including dummy variables for each of the Congresses can be argued to be more appropriate, doing so uses up a large number of degrees of freedom. With the small number of cases in the committee level models, the loss of degrees of freedom made it impossible for the statistical package to estimate the F statistic, which is necessary to show the significance of the overall model. Furthermore, it is likely that certain characteristics of the chairmen will be nearly perfectly collinear with the particular Congress being controlled for. For instance, since the House and Senate are typically controlled by the same party, it is likely that there are relatively few instances where differences in party control will be observed within Congresses. Additionally, ideological differences within Congresses and between chairs are also likely to be muted due to the high correlation between ideological preferences and party identifications. As Beck, Katz, and Tucker (1998) note, one of the drawbacks of their suggested method of using time dummies for each time period studied is that it cannot account for the effects of variables where there is little to no variation within the time period. As such I use the decade variable approach, as it allows time effects to be captured without using up too many degrees of freedom and allows certain important variables to vary so their effects can be more helpfully studied.

Chamber. Of the two chambers of Congress, the House represents smaller constituencies, and thus, may operate in a more parochial manner than the Senate. As such, due to their broader constituency bases, the Senate may show more of a concern toward broader policy issues like environmental protection. On the other hand, the House may be a more receptive venue to more parochial interests like tobacco interests than the Senate. In order to control for this effect, I created a dummy variable for each of the models, which equal 0 if the hearing takes place in the Senate and 1 if the hearing takes place in the House.

Statistical Model

Pooled OLS. In order to test the expectations laid out above, I conducted a series of pooled OLS regression analyses that grouped data based on the committee or sub-committee a particular hearing was held in for the committee level models and grouped data based on the member presenting statements in the statement model. A pooled OLS regression assumes that any two unit years can be compared whether across committees or across times and its estimator is a weighted average of collapsing groups down to a single, mean time point and differencing each observation within each group from its group mean.

Conclusion

In the next three chapters, I will use the basic research design laid out above to test the theory of information collection and display decisions discussed in Chapter 2.

In Chapter 4, I will demonstrate how issue areas with a distributive component can cause members of unified subsystems to unite together when making information collection and display decisions using data collected from hearings dealing with the issue area of tobacco policy. In Chapter 5, I will discuss how partisan issues can lead to divisions amongst members of subsystem members and how these divisions can heighten the degree to which the beliefs of committee chairs affect witness selection decisions using data collected from hearings dealing with the issue area of climate change policy. Finally, in Chapter 6, I will discuss how the dynamics of information collection and display decisions can differ when studying different dimensions of the same issue using data collected from hearings dealing with the issue area of biotechnology policy. I now turn to the next chapter to discuss how the dynamics of hearing politics have operated in the issue area of tobacco policy.

Chapter 4. Tobacco Policy – Distributive Issue Contexts, Unified Subsystems, and Information Collection and Display Decisions

Introduction

In 1983, nearly twenty years after the Surgeon General released its seminal report linking tobacco use to increased incidence of cancer, the House Committee on Agriculture's Subcommittee on Tobacco and Peanuts held a set of hearings to review the tobacco price support program in light of concerns that forces opposed to tobacco products may attempt to end the program. Despite representing a district with no tobacco growers and despite the growing consensus of the negative health consequences of tobacco use, then-Representative Pat Roberts from Kansas's first district made the following statement explaining his support for tobacco growers:

> "[T]he economic adversity that we face in agriculture today is so severe that I perceive at least that the time for consensus is long overdue…I had a newspaper reporter ask me last night for about 30 minute how on Earth I explain to my [wheat] producers why I am serving on the Tobacco Subcommittee, and I said 'Look, we are all in this together (Hearing Doc 83-H161-25).'"

In 2000, as arguments to end the price support program reached a fever pitch, the House Committee on Agriculture's Subcommittee on Risk Management, Research, and Specialty Crops held a hearing in Lexington, KY chaired by Representative Thomas Ewing from Illinois. Once again, despite not directly representing any tobacco interests in the state, Ewing made the following statement expressing general support for tobacco growers:

> "The subcommittee has worked hard over the last few years to successfully defeat repeated attempts…to add amendments to appropriations bills which would limit or end the Federal Tobacco Program. As most of you know, there are many in Washington, DC and around the country that have no tolerance for tobacco products and would do most anything to put tobacco companies out of business…As a corn and soybean producer, I know that you probably just want a fair price…Let me assure you that we will be working hard to include tobacco growers in any disaster and supplemental assistance this year (Hearing Doc. 2000-H161-9)."

As these statements suggest, politics within the agricultural committees in Congress are characterized by consensus rather than struggle between competing coalitions. As this chapter will demonstrate, agricultural committees represent peculiar types of venues in congressional information collection and display politics. Due to their consensual nature and the steadfast support of their members for agricultural commodities, agricultural committees tended to produce information that is supportive of tobacco interests regardless of the characteristics of the individuals controlling the committee. Furthermore, agricultural committee members participating in tobacco hearings tended to participate in support of tobacco interests, even when controlling for constituency characteristics and personal ideological preferences of those participating in the hearing. These results lend support to the idea promoted by punctuated

equilibrium theorists that certain venues are biased in terms of the tone of information produced in congressional hearings.

Tobacco Policy Issue Context

Much ink has been spilled attempting to understand the dynamics of tobacco policy. As these studies have generally demonstrated, tobacco policy has evolved from a policy area dominated by a subsystem seeking to promote the expansion of the tobacco industry to an issue characterized by competition for influence between this subsystem and rival subsystems with a greater propensity for emphasizing the health and safety risks involved with tobacco use (Baumgartner and Jones 1993; Talbert, Jones, and Baumgartner 1995; Worsham 2006). Although there has been some debate on the degree to which the tobacco subsystem's influence over tobacco policy has waned over time (see Worsham 2006; Givel 2006), researchers generally concur that the tobacco subsystem remained unified and vigorously supportive of the tobacco industry even as other subsystems entered the fray (Baumgartner and Jones 1993; Talbert, Jones, and Baumgartner 1995; Worsham 2006).

As these studies further uncovered, the agricultural committees in both chambers of the U.S. Congress serve as the "institutional anchors" for the tobacco promotion subsystem (Worsham 2006, 439). During the early stages of the issue, agricultural committees enjoyed nearly full jurisdictional control over tobacco policy, and thus, the informational content of congressional hearings on the issue (Baumgartner and Jones 1993; Talbert, Jones, and Baumgartner 1995; Worsham 2006). Agricultural

committees used this jurisdictional authority to hold hearings that were stacked with testimony that emphasized the importance of the tobacco industry to the U.S. economy and largely filtered out testimony attempting to emphasize the health risks of tobacco use. Even while other committees came on the scene to compete for jurisdictional turf with the agricultural committee, the agricultural committee served as a rather dependable venue for tobacco proponents (particularly tobacco farmers) to state its case to members of Congress and the general public.

However, while the agricultural committee has clearly been a friendly venue to the tobacco industry throughout most of the issue's history, it is unclear why the agricultural committee has been such a hospitable venue. It is unlikely that personal belief systems or party identification of committee chairman have much to do with this phenomenon. As I will demonstrate later on, the two political parties have not been divided on the issue of tobacco policy until relatively recently, and this divide can probably be explained by the influx of members from tobacco states into the Republican Party. As my theory notes, political parties are not likely to get particularly involved in distributive issues, as these institutions have limited time, attention, and resources and can concentrate their resources on influencing certain very salient policy issues like health care and environmental policy (Redford 1969; Bader 1997). Furthermore, chairs from both the Democratic and Republican parties, with both conservative and liberal preferences have held control over agricultural committees across time, and yet, the agricultural committee still remained a positive venue for tobacco interests despite these changes.

However, in the context of the distributive nature of tobacco politics, two interesting theories may explain why the agricultural committee has been such a bastion of positivity for tobacco interests in terms of the information it collects and displays in congressional hearings. On the one hand, the agricultural venue represents an atypically consensual committee. Agricultural venues are made up of committee members representing districts with high percentages of constituents living in rural areas and employed as farmers (Adler and Lipinski 1997). Constituents within these districts have a high desire for government benefits and subsidies to assist the farming communities in their districts (Jones 1960; Browne 1995; Adler and Lipinski 1997). Each of these committee members' constituencies tend to focus their efforts on obtaining beneficial treatment for their own specific commodity and seek to avoid conflict whenever possible (Browne 1990; 1995).

In distributive issue contexts like agricultural policy where policy actions are driven by legislators' constituencies, legislators tend to cooperate with each other and support each other's demands for constituency benefits in order to ensure legislative support for their own constituency's demands in the future (Mayhew 1974; Weingast 1979; Shepsle and Weingast 1981; Tullock 1981; Weingast and Marshall 1988). As such, even when agricultural committee leaders have no direct constituency-related incentive to collect and put information on display that is supportive of the tobacco industry, they do so in order to curry favor from tobacco state legislators on future legislative initiatives. By contrast, this culture of cooperation does not exist on the other committees that encroached upon the agricultural committee's control over the issue. As

such, if the above expectations hold true, we should expect the following hypotheses to be confirmed:

Unified Subsystem Member Statement Tone Hypothesis: Agricultural committee members will be more supportive of the tobacco industry in their opening statements than members of other committees.

Unified Subsystem Testimony Tone Hypothesis: Since agricultural committees fit the unified subsystem type, agricultural committees will produce significantly more positive testimony toward the tobacco industry than other committees. Since most members of the committee is in agreement on the conception of a policy issue, the personal belief systems and constituency characteristics of committee chairs will have little to no impact on the information collection process.

Anecdotal evidence seems to confirm the consensual nature in which congressional hearings are conducted in the agricultural committee. According to interviews with congressional committee staff, agricultural committee members are typically in full agreement on witness selection (Committee Staff Interviews 2010). Minority committee members typically will not use their privilege to invite witnesses to testify at a congressional hearing because the majority has selected the individuals they would have asked to have testify (Committee Staff Interviews 2010). Majority committee staff members also typically prepare questions and opening statements for

members of the minority, a practice unheard of in other committees in Congress (Committee Staff Interviews 2010).

[Tables 4.1 and 4.2 Here]

On the other hand, the finding that the agricultural committee served as a sympathetic informational venue for tobacco proponents could be attributed to the fact that agricultural venues holding hearings on tobacco policy were typically controlled by committee chairs and ranking minority members from the leading tobacco-producing states.[12] As stated in Chapter 2, committee chairs and, to a lesser extent, minority ranking members are the main actors responsible for deciding which witnesses will be invited to testify at congressional hearings (Sachs 2003; Palmer 2007; LaForge 2010). Thus, instead of committees acting in a consensual nature to invite witnesses, committee chairs may simply be acting based in their own interests and using their own beliefs and the beliefs of their constituents to guide witness selection decisions even as other committee members disagree with their decisions.

As Table 4.1 demonstrates, committee members from tobacco states chaired just over 73% of the agricultural venues holding hearings on the topic of tobacco policy. On the other hand, committee members from tobacco states only chaired around 10% of the

[12] As will be elaborated upon in more detail later, tobacco states include the following: North Carolina, Kentucky, Tennessee, Virginia, Georgia, and South Carolina. As Worsham (2006) states, according to the Economic Research Service of the USDA these states comprise the leading producers of tobacco. Five of the six also comprise the largest manufacturers of tobacco products. Thus, they are classified as tobacco states.

other venues holding hearings on tobacco policy. Furthermore, as Table 4.2 depicts, committee members from tobacco states made up around 43% of the minority ranking members in agricultural committees holding hearings on tobacco policy. By contrast, only about 16% of the minority ranking members from other committees holding hearings on tobacco policy hailed from tobacco states. This ultimately leads one to wonder whether past findings of the agricultural committees' informational bias toward selecting witnesses supportive of the tobacco industry can be attributed more to the consensual quality of politics within the agricultural venue regardless of the beliefs and constituent characteristics of those controlling the committee or are more an artifact of the control that members from tobacco states have had over agricultural committees holding hearings on tobacco policy. If the agricultural venue's tendency to be sympathetic to the tobacco industry is simply based on the beliefs of committee chairs and the constituents of committee chairs, I expect the following hypotheses to be confirmed:

Tobacco State Member Statement Tone Hypothesis: Committee members who represent large tobacco growing and producing communities will be more supportive of the tobacco industry in their opening statements than members of other committees.

Tobacco State Chair Testimony Tone Hypothesis: Regardless of the type of committee conducting the hearing, hearings chaired by members from large tobacco growing and

producing states/districts will produce significantly more positive testimony toward the tobacco industry than committees chaired by non-tobacco producing states/districts.

In the next section, I will detail the ways in which these expectations will be tested using empirical data collected from congressional hearing transcripts.

Data and Methods

Case Selection. Cases of congressional hearings concerning tobacco policy were selected using a two pronged approach. First, hearings were selected by searching through hearings from the "Congressional Hearings Data Set" of the *Policy Agendas* project (http://www.policyagendas.org) that dealt with specific subtopics in the "Agricultural" topic area along with the "Tobacco Abuse, Treatment, and Education" subtopic of the "Health" topic area and picking out those hearings whose descriptions noted that the whole hearing or a substantial part of the hearing dealt with tobacco policy. In order to ensure all cases were selected, I then conducted searches using on *Lexis-Nexis Congressional Universe* (http://www.lexisnexis.com) for hearings using the following search terms: tobacco, cigarette, cigar, and smoking. Through this method, I obtained 176 individual cases of hearing documents published that at least substantially concerned the topic of tobacco policy. Data from these hearings were then aggregated at the committee and subcommittee level for each individual Congress, which condensed the number of cases to 102 cases.

Dependent Variables – Tone of Committee Member Statements. The tone of committee member statements was determined as follows. Particular arguments made over the course of a statement were coded as either supportive toward the tobacco industry, moderate, or opposed to the tobacco industry. More specific information on how each statement was assigned can be found in Appendix C. Using PDF XChange Viewer's free PDF editing software[13], notations were made to denote the positive, moderate, and negative suppositions made over the course of a statement. Then, the overall statement was coded using the following five-point scale:

- Very negative (-2): Statements made up of mostly or all negative arguments toward the tobacco industry and very little to no positive or neutral arguments
- Negative (-1): Statements with mostly negative arguments toward the tobacco industry and a substantial, but not equal portion of positive arguments and statements with a fairly equal balance of negative and neutral arguments
- Neutral (0): Statements made up of nearly all neutral arguments toward the tobacco industry or statements with a fairly equal balance of negative and positive statements made toward the tobacco industry
- Positive (1): Statements with mostly positive arguments toward the tobacco industry and a substantial, but not equal portion of negative arguments and statements with a fairly equal balance of positive and neutral arguments

[13] PDF XChange Viewer allows users to highlight and mark up PDF documents obtained by other sources. This software can prove invaluable to individuals seeking to content analyze documents on a limited budget. This software can be found at the following website: http://www.tracker-software.com/product/pdf-xchange-viewer

- Very positive (2): Statements made up of mostly or all positive arguments toward the tobacco industry and very little to no negative or neutral arguments

Dependent Variable – Tone of Testimony. I analyze the tone of information presented in congressional hearings on the topic of tobacco policy by analyzing the actual content of hearing testimony itself. Using the same general approach that I used for opening statements, I assign each individual piece of testimony a score on a five point scale from -2 (very negative toward tobacco) to 2 (very positive toward tobacco) to denote the degree of its favorability toward the tobacco industry. I then take the average of scores of pieces of testimony given before a particular committee in a particular Congress to measure the overall tone of testimony in that committee for that Congress.

Dependent Variable – Percentage of Health and Safety Advocates and Experts. Although group affiliations on their own are not the most effective indicator of overall informational tone, these affiliations do help to gain insight into the types of information being focused on in congressional hearings. With respect to tobacco policy, one would expect that the health and safety aspects of the issue may be avoided by tobacco proponents due to the overwhelming consensus that developed that tobacco use was harmful to people's health. On the other hand, tobacco proponents may seek to draw attention to the health and safety aspects of the issue in order to rebut existing images through the calling their own health and safety experts to testify in opposition to the claim that tobacco use is harmful to one's health. In order to analyze these

propositions, I measured the information gathered from health and safety advocates and experts in congressional hearings on tobacco policy as follows. First, I coded the number of those testifying at hearings that qualified as a health and safety advocates and experts. These groups include the following: health and safety bureaucratic agencies, medical experts from universities, pro-health interest groups, pro-safety interest groups, fire fighters, environmental groups concerned with air quality, and scientific experts. I then took the percentage of health and safety advocates and experts that testified in front of a particular committee in a given Congress.

Dependent Variables – Percentage of Tobacco Farmers and Tobacco Manufacturers and Sellers. Representatives of the tobacco industry can be split into two different categories: farmers and manufacturers/sellers. Due to the comparatively less economically fortunate circumstances of tobacco farmers, the public at large generally looks upon tobacco farmers with more sympathy than the manufacturers/sellers of tobacco who many feel have profited off of the sale of an unhealthy product. As such, tobacco opponents may seek to call manufacturers/sellers of tobacco products to testify at hearings because these opponents can more effectively create the image of an evil tobacco industry when questioning those who make the most money off of the product as opposed to questioning farmers who are just trying to scrape by the best they can off of the income they get from growing tobacco. On the other hand, proponents of tobacco may seek to call tobacco farmers to testify over manufacturers/sellers because these farmers create a more sympathetic picture of what could happen to poor working farming families if tobacco use was banned. In order to

analyze these propositions, I measured the information gathered from tobacco farmers and tobacco manufacturers/sellers in congressional hearings on tobacco policy as follows. First, I coded the number of those testifying at hearings that qualified as either a tobacco farmer or a tobacco manufacturer/seller. Tobacco farmers include any individual farmer growing tobacco and/or any agricultural interest group representing the interests of tobacco growers. Tobacco manufacturers/sellers include tobacco companies (i.e. Phillip Morris USA, Inc.), interest groups representing the tobacco industry (i.e. Tobacco Institute), tobacco dealers, and tobacco exporters. I then took the percentage of both tobacco farmers and tobacco manufacturers/sellers that testified in front of a particular committee in a given Congress.

Independent Variable – Subsystem Venue. As stated earlier, distributive theorists argue that politics within committees is characterized by a degree of compromise amongst different actors within congressional committees. Congressional policymakers seek to cooperate with each other and support each other's demands for constituency benefits in order to ensure legislative support for their own constituency's demands in the future (Mayhew 1974; Weingast 1979; Shepsle and Weingast 1981; Tullock 1981; Weingast and Marshall 1988). In the specific case of tobacco policy, due to the consensual nature of politics within the agricultural subsystem and the historical role of the committee in promoting all agricultural commodities including tobacco, it is expected that hearings held by agricultural committees in Congress will be significantly more positive toward the tobacco industry than a typical run of the mill committee. By contrast, there is no reason to expect that each of the other types of committees

encroaching on the agricultural committee's jurisdictional turf on the issue will be any more likely than a run of the mill committee to be more negative toward the tobacco industry. Each of these committees should be significantly more negative toward the tobacco industry than the agricultural committee, but not necessarily any more negative than each other. In order to test the validity of these expectations, I created categories and dummy variables for each of the types of subsystems represented by particular committees in Congress that held hearings on the issue of tobacco policy relatively often. These categories include the following: agriculture, health/safety, and judiciary.

Independent Variable – Constituency Characteristics. As stated earlier, past findings that agricultural committees tended to produce information sympathetic to the tobacco industry in congressional hearings could be attributed to the fact that the main leaders in the agricultural committees and subcommittees holding hearings on tobacco policy were made up of individuals from the leading tobacco-producing states. Thus, chairs from tobacco-producing states may have stacked hearing testimony to produce information consistent with their own constituents' interests in the issue and encountered little resistance due to the fact that the minority leader represented similar constituent interests, and thus, tended to agree with the selections made by the chair. In any event, if committee members come to hearings with the intention of representing their own interests, we should expect that those individuals representing tobacco interests will participate with the purpose of bolstering information supportive of tobacco interests and debunking information in opposition to tobacco interests.

In order to capture the effect of constituency interests on the subject of tobacco policy, I use Worsham's (2006) criteria for coding tobacco states. According to Worsham (2006), tobacco states include the following: North Carolina, Kentucky, Tennessee, Virginia, Georgia, and South Carolina. As Worsham (2006) states, according to the Economic Research Service of the USDA these states comprise the leading producers of tobacco. Five of the six also comprise the largest manufacturers of tobacco products. Thus, I create a dummy variable that is coded 1 if committee members hail from these tobacco states and 0 if they do not.

Independent Variable – Personal Beliefs. In the case of tobacco policy, more conservative individuals would likely be more supportive of tobacco interests as the tobacco industry represents a significant portion of the economy and regulation of particular industries is antithetical to conservative belief systems. By contrast, more liberal individuals are more supportive of policies that regulate industries in order to protect the public, and thus, may be less supportive of tobacco interests. In order to measure the ideological preferences of committee and subcommittee members, I use Poole and Rosenthal's first-dimension DW-Nominate scores, which are based off of roll call votes taken by the committee members (http://voteview.org). This variable is measured on a continuous scale from -1 to 1 with higher scores indicating a more conservative member ideology.

Control Variable – Time. It is expected that some elements of information collection and display in tobacco policy simply cannot be accounted for by elements of changes in different key characteristics between different committees across different time periods. For instance, as time goes on and information about the harmful effects of tobacco use become more prevalent, images of the tobacco industry at large may become more negative, which will likely influence all stages of the congressional hearing process. To control for the effects of time on informational collection, I include dummy variables for each decade that congressional hearings took place: (1971-1980; 1981-1990; 1991-2000; 2001-2004).[14] The 1970's (1971-1980) serve as the reference decade for variables in the model.

Control Variable – Chamber. Of the two chambers of Congress, the House represents smaller constituencies, and thus, may operate in a more parochial manner than the Senate. As such, the House may be a more receptive venue for tobacco interests than the Senate. In order to control for this effect, I created a dummy variable for each of the

[14] Although including dummy variables for each of the Congresses can be argued to be more appropriate, doing so uses up a large number of degrees of freedom. With the small number of cases in the committee level models, the loss of degrees of freedom made it impossible for the statistical package to estimate the F statistic, which is necessary to show the significance of the overall model. Furthermore, it is likely that certain characteristics of the chairmen will be nearly perfectly collinear with the particular Congress being controlled for. For instance, since the House and Senate are typically controlled by the same party, it is likely that there are relatively few instances where differences in party control will be observed within Congresses. Additionally, ideological differences within Congresses and between chairs are also likely to be muted due to the high correlation between ideological preferences and party identifications. As Beck, Katz, and Tucker (1998) note, one of the drawbacks of their suggested method of using time dummies for each time period studied is that it cannot account for the effects of variables where there is little to no variation within the time period. As such I use the decade variable approach, as it allows time effects to be captured without using up too many degrees of freedom and allows certain important variables to vary so their effects can be more helpfully studied.

models, which equal 0 if the hearing takes place in the Senate and 1 if the hearing takes place in the House.

Statistical Model – Pooled OLS. In order to test the expectations laid out above, I conducted a series of pooled OLS regression analyses that grouped data based on the committee or sub-committee a particular hearing was held in for the committee level models and grouped data based on the member presenting statements in the statement model. A pooled OLS regression assumes that any two unit years can be compared whether across committees or across times and its estimator is a weighted average of collapsing groups down to a single, mean time point and differencing each observation within each group from its group mean. I now turn to a discussion of the results of my analyses.

Committee Members Statements – Results

[Figure 4.1 Here]

As stated earlier, committee member statements provide important insights into why particular committee members participate in congressional hearings. Before reporting the results of what determines the tone of these statements, it is important to first analyze how the tone of these statements have ebbed and flowed over time across particular important groupings. Figure 4.1 presents a graph of the differences between

the average tone of statements made by Democrats and Republicans in tobacco hearings across time. As this graph demonstrates, Democrats and Republicans were relatively undivided on the issue of tobacco policy until the 103rd Congress. In fact, contrary to expectations, in a few Congresses prior to the 103rd Congress, Democrats were actually more supportive of tobacco interests than Republicans in congressional hearings. Nonetheless, after the 103rd Congress, a gulf did develop between Republicans and Democrats in tobacco policy with Republicans being the more supportive of the two parties toward tobacco interests. This result, however, can likely be attributed to the well-documented influx of southern state legislators, including individuals from tobacco growing states, into the Republican Party, over time. Furthermore, although there have been clear differences between the two parties in their support for the tobacco industry since the 103rd Congress, since the 105th Congress both parties have consistently decreased and increased their support for tobacco interests in concert. In any event, even if differences in the two parties have developed recently, it is clear that this is only a recent development and tobacco policy has clearly not been a partisan issue in terms of congressional hearing participation throughout history.

[Figure 4.2 Here]

On the other hand, as Figure 4.2 depicts, fairly consistent differences are evident throughout time in the average tone of reasons given by tobacco state legislators vis-à-vis non-tobacco state legislators for their respective participation in congressional

hearings on tobacco policy. On the one hand, tobacco state legislators have been consistently supportive of tobacco interests in statements in giving in congressional hearings. Even at their lowest point in the 105th Congress, the average statement tone score for tobacco state legislators only fell barely below 1. On the other hand, with the notable exception of the 96th Congress, statements from non-tobacco state legislators have been decidedly neutral to negative toward the tobacco industry. It is clear, at least anecdotally, from these graphs that the issue of tobacco policy has been far more of a constituent oriented issue than a partisan issue across time.

[Table 4.3 Here]

Turning now to a more systematic analysis of opening statements across time, Table 4.3 presents the results presents the results of the pooled ordinal probit model testing the determinants of the tone of opening statements on the topic of tobacco policy. Overall, the model performs very well, as the pseudo R-squared of 0.300 is fairly robust by pseudo R-squared standards and the Wald Chi^2 of 407.9 is significant at all levels of statistical significance.

Each of the control variables are significant and in their expected directions. As expected, time has a significant impact on the tone of member statements with each successive decade producing significantly more negative statements concerning the tobacco industry than the reference point of the 1970's. This result likely is suggestive of the increasingly negative aura surrounding tobacco use due to the consensus in the

health community concerning the harmful effects of tobacco use. Also, as expected, House members are significantly more likely to give statements that are more supportive of tobacco interests than the Senate, likely due to the parochial politics that operate within that chamber.

More importantly for this study, however, venue biases and individual member constituency and ideological biases have significant effects on the tone of members' statements. First of all, as expected, individuals from tobacco-producing states were significantly more positive in their tone toward the tobacco industry when explaining the reasons for their participation in the hearing. Interestingly, despite the non-partisan and seemingly non-ideological nature of the issue, more conservative committee members were significantly more positive toward the tobacco industry than more liberal members.

In terms of venue biases, the results demonstrate that two particular venues contain legislators with significant biases in their reasons for participating in congressional hearings when compared with a miscellaneous set of committees. As expected, members of agricultural committees tended to be more supportive of the tobacco industry when participating in hearings than other committees. This result demonstrates that members of agricultural committees tended to stick together in their support of the tobacco industry even if their belief systems or lack of presence of tobacco in their economy would normally lead them toward opposition of the product.

Thus, in terms of participation by committee members, it is apparent that both individual characteristics of the member and overall committee biases affect how hospitable members will be toward the tobacco industry when participating in

congressional hearings. This result is significant in that it demonstrates the venue where tobacco interests are likely to be subject to less harsh questioning and the individuals who are likely to seriously question the information put forth by tobacco interests. I now turn to an analysis of the determinants of the overall tone of congressional hearing testimony to determine whether the same dynamics that drive the tone of member statements also drive the tone of overall testimony presented in congressional hearings.

Overall Tone of Testimony – Results

[Figure 4.3 Here]

Before discussing the results of the model testing the determinants of the overall tone of testimony concerning tobacco policy in congressional hearings, it is important to first analyze how the tone of testimony has ebbed and flowed throughout time in order to demonstrate how images of the tobacco industry in Congress have deteriorated over time. Figure 4.3 presents a graph depicting the average tone of testimony per congressional session on the topic of tobacco policy. As the graph demonstrates, while the tone of testimony has experienced relatively wide jumps and falls from Congress to Congress, the tone has generally trended in a negative direction toward the tobacco industry, across time. Once again, this is not surprising as this presumably mirrors thoughts on tobacco use, as information about the harmful effects of tobacco use disseminated throughout the American public. Furthermore, this result is also

suggestive of the finding of past studies that the agricultural committee's jurisdictional control over the tobacco policy issue began to break down over time, and thus, more and more information began to produced by other committees (Baumgartner and Jones 1993; Worsham 2006). In summary, it is clear that the tone of the information presented on tobacco policy has become decidedly more negative over time.

[Table 4.4 Here]

Turning now to a more systematic analysis of the testimony of witnesses on the subject of tobacco policy across time, Table 4.4 presents the results of the pooled OLS regression model testing the determinants of the tone of testimony. Overall, the model performs very well, as it explains around 58% of the variation in the dependent variable and the F-statistic of 33.17 is significant at all standard levels of statistical significance. As expected and as depicted in Figure 4.3, time has a significant impact on the overall tone of testimony heard in congressional hearings. Each decade subsequent to the 1970's all represent significant breaks from the 1970's in the overall tone of testimony in congressional hearings. Even when controlling for other factors, each decade subsequent to the 1970's saw significantly more negative testimony presented in front of congressional committees than the 1970's. This lends support to the claim that the tone of testimony about tobacco interests became more negative as information uncovering the health effects of tobacco use disseminated throughout society.

More importantly for this study, however, it is also apparent from the results in Table 4.4 that the individual characteristics of committee leaders had no statistically significant effect on the tone of testimony presented in front of congressional committees on the subject of tobacco policy. The fact that the chair and the minority ranking member hailed from tobacco states had no impact on to tone of testimony. Furthermore, not even the percentage of tobacco state legislators within a particular committee had any sizable effect on the tone of testimony about tobacco policy. Additionally, personal belief systems of committee chairs also did not translate into having a significant effect on the tone of information presented about tobacco policy.

However, while the individual characteristics of committee leaders had no substantial effect on the tone of tobacco testimony, the effects of one committee venue in particular had a decidedly large impact on the tone of testimony. As expected, agricultural committees tended to produce more information supportive of tobacco interests in hearings than the baseline group of miscellaneous committees. More specifically, the tone of testimony presented in front of agricultural committees was an expected 1.799 units more positive toward tobacco interests than testimony presented in front of the baseline category of miscellaneous committees. By contrast, no other committee venue produced significant differences in the tone of overall testimony toward tobacco interests when compared with the baseline case of a miscellaneous group of committees and subcommittees.

These results provide firm reaffirmation of the conclusions arrived at by punctuated equilibrium theorists. In the case of tobacco policy, it is apparent that the agricultural venue is uniquely supportive of tobacco interests in terms of the

information presented in congressional hearings. On the other hand, individual characteristics of committee leaders have no impact on the tone of testimony. I now turn to an analysis of the types of groups that testify at congressional hearings to determine whether certain committees focus on particular aspects of the issue over other aspects.

Types of Witnesses - Results

[Figure 4.4 Here]

Figure 4.4 contains a graph depicting the evolution in the broad categories of witnesses that have testified during hearings concerning tobacco policy. As Figure 4.4 demonstrates, representatives of private interests (i.e. tobacco farmers, tobacco manufacturers, health and safety interest groups, etc.) have by far been the most preponderant type of group testifying at congressional hearings throughout the history of the issue. More specifically, representatives of private interests have never made up less than 40% of the total witnesses testifying at hearings on the subject of tobacco policy and even made up as high as 82% of the witnesses testifying during the 97th Congress.

The other general types of groups testifying (experts, federal politicians, state/local politicians, and federal bureaucrats) have not made up a large percentage of the groups testifying on the issue. These categories individually have only rarely made up more than 20% of the groups testifying at congressional hearings on the topic of

tobacco policy. Of particular note, despite the clear medical controversies on the issue especially in its early stages, experts (i.e. individuals representing a non-ideological think tank and/or university) have not made up a sizable portion of the individuals called to testify. More explicitly, experts have only made up more than 20% of the total witnesses testifying on the issue of tobacco policy twice (during the 105th and 107th Congresses). As I will demonstrate in later chapters, experts have routinely made up a very sizable portion of witnesses testifying at congressional hearings on the topics of climate change and biotechnology. Yet, despite the possible need for medical and scientific experts to provide expert information to clear up the supposed controversy over the harmful effects of tobacco use, hearings were more routinely utilized as a forum for representatives of private interests to espouse their viewpoints on the issue.

Why have hearings in tobacco policy been dominated by representatives of private interests when hearings on other issues with a technical component have been used to call large percentages of experts to testify? Unlike the other issues we will be discussing, the technical aspects of the tobacco issue did not pervade every single dimension of the tobacco issue. For instance, the agricultural committees, which held the majority of the hearings on tobacco policy especially in its early stages, largely ignored the health and safety aspects of the issue because such matters were not important to policy they would be making. Instead, they focused on issues related to growing tobacco crops. In such dimensions of issues, expert testimony is relatively less important since farmers can speak for themselves as to what is most beneficial for them. As such, agricultural hearings, for the most part, were used as a forum for tobacco farmers to express their support for/opposition to particular policies being proposed by

the federal government. This type of use of the hearing process is likely how the process operates in many issues where the public and politicians generally understand what is at stake in the issue (i.e. welfare policy, abortion policy, tax policy, etc.). However, as we will see in the more technical issues of climate change and biotechnology policy, experts are routinely called to testify at congressional hearings to provide credibility for certain arguments and/or to provide information to policymakers to help them better understand what to do on a policy issue. Although this happened to a lesser extent in tobacco hearings than it did in other hearings, experts were also called at tobacco hearings (particularly when the health and safety aspects of the issue were addressed) in order to provide credibility for one side of the debate over another and to potentially give congressional policymakers an idea on how to address the issue in future policy.

[Table 4.5 Here]

Nonetheless, with the trends in the broad categories of witnesses called to testify on tobacco policy laid out, I can now turn to an analysis of whether committees with certain characteristics tend to ignore or focus on certain types of witnesses to determine the types of subjects certain committees focus on during their hearings. Table 4.5 presents the results of the pooled OLS regression model testing the determinants of the percentage of testimony given by health and safety advocates and experts. Overall, the model performs well, as it explains around 45% of the variation in the dependent variable and the F-statistic of 23.89 is significant at all standard levels of statistical

significance. In terms of the control variables in my analysis, first of all, there are no significant differences between the different chambers of Congress in terms of the percentage of health and safety experts and advocates called to testify in congressional hearings. Furthermore, while hearings in the 2000's contained a significantly greater percentage of those concerned with the health and safety aspects of the tobacco issue when compared to the 1970's, no other decades stood out as being significantly different from the 1970's in this respect.

Once again, the individual characteristics of committee leaders had no statistically significant effect on the types of witnesses presenting testimony in front of congressional committees on the subject of tobacco policy. Committee hearings lead by members hailing from tobacco states were not significantly different from those led by members from non-tobacco states in the percentage of testimony given by those concerned about the health and safety aspects of the tobacco issue. Additionally, the percentage of tobacco state legislators within a particular committee had no sizable impact on the percentage of health and safety advocates and experts called to testify. Ideology of committee leaders also did not have a significant effect on the percentage of health and safety experts called to testify on the tobacco issue.

Once again, the key determinant of the types of individuals called to testify at hearings appears to be the type of committee venue in which a hearing takes place. As expected, agricultural committees call an expected 23% less health and safety advocates and experts than typical run of the mill committees, a result which is significant at all standard levels of statistical significance. Thus, it appears that agricultural venues also serve as hospitable venues for tobacco interests by taking focus off the health and safety

aspects of the issue, to which tobacco proponents would not like to draw attention, and putting more focus on the economic aspects of the issue. Interestingly, judiciary committees call around an expected 22% less health and safety advocates and experts than the baseline case of miscellaneous committees. However, this result should not be taken to mean that judiciary committees are necessarily a hospitable venue for tobacco interests. As the results in the last section demonstrated, judiciary committees were no different than miscellaneous committees in the tone of testimony presented in congressional hearings. The result in this analysis likely demonstrates the degree to which judiciary committees concentrated on litigation toward the tobacco industry (an only marginally more positive topic than the health and safety aspects of the issue).

As stated earlier, representatives of the tobacco industry can be split into two different categories: farmers and manufacturers/sellers. Due to their comparatively less fortunate economic circumstances and the fact that they are seen as blue-color hardworking individuals, tobacco farmers are generally looked upon in a sympathetic fashion by the public. On the other hand, tobacco sellers and manufacturers like Phillip Morris USA, Inc. are looked upon much less favorably in large part due to the large amounts of money they have made through selling and marketing a harmful product to the general public (Worsham 2006; Givel 2006). With the vastly different ways that society views tobacco farmers and manufacturers/sellers, it leads one to wonder: do committees with different characteristics call one type of tobacco representative over another in order to portray the tobacco industry in a particular light?

[Table 4.6 Here]

Table 4.6 presents the results of the pooled OLS regression model testing the determinants of the percentage of testimony given by tobacco farmers. Overall, the model performs well, as it explains around 68% of the variation in the dependent variable and the F-statistic of 110.62 is significant at all standard levels of statistical significance. In terms of the control variables in my analysis, first of all, there are no significant differences between the different chambers of Congress in terms of the percentage of tobacco farmers called to testify in congressional hearings. Furthermore, no decades stood out as being significantly different from the 1970's in terms of the percentages of tobacco farmers called to testify at hearings on the topic of tobacco policy.

In terms of the key variables in my analysis, the individual characteristics of committee leaders once again had no statistically significant effect on the percentage of tobacco farmers presenting testimony in front of congressional committees on the subject of tobacco policy. Committee hearings lead by members hailing from tobacco states were not significantly different from those led by members from non-tobacco states in the percentage of testimony given by tobacco farmers. Additionally, the percentage of tobacco state legislators within a particular committee had no sizable impact on the percentage of tobacco farmers called to testify. Ideology of committee leaders also did not have a significant effect on the percentage of tobacco farmers called to testify on the tobacco issue.

However, while the individual characteristics of committee leaders had no substantial effect on the percentage of testimony given by tobacco farmers in front of

particular committees, one committee venue in particular was significantly more likely to call tobacco farmers than any other type of committee venue. As expected, agricultural committees tended to call greater percentages of tobacco farmers to testify at hearings on the topic of tobacco policy than any other type of committee venue in Congress. More specifically, agricultural committees call an expected 44% greater percentage of tobacco farmers to testify at hearings on the subject of tobacco policy than typical run of the mill committees, a result which is significant at all standard levels of statistical significance. By contrast, no other committee venue produced significant differences in the percentage of tobacco farmers called to testify at tobacco hearings when compared with the baseline case of a miscellaneous group of committees and subcommittees. This result is hardly surprising due to the subject matter jurisdiction addressed by agricultural committees and the fact that farmers are routinely allowed to testify at agricultural committee hearings dealing with a wide variety of agricultural products. Furthermore, as I have already addressed, agricultural committees also have the reputation of being a kinder venue toward tobacco interests than the rest of the types of venues in Congress. However, while the agricultural committees certainly give tobacco farmers a forum to express their viewpoints to congressional policymakers and the public, is this same forum provided to the manufacturers/sellers of the tobacco industry.

[Table 4.7 Here]

Table 4.7 presents the results of the pooled OLS regression model testing the determinants of the percentage of testimony given by tobacco manufacturers and sellers. Overall, the model only performs modestly well, as it explains around 14% of the variation in the dependent variable and the F-statistic of 2.23 is significant at the 0.05 level of statistical significance. In terms of the control variables in the analysis, first of all, there are no significant differences between the different chambers of Congress in terms of the percentage of tobacco manufacturers and sellers called to testify in congressional hearings. Furthermore, no decades stood out as being significantly different from the 1970's in terms of the percentages of tobacco manufacturers and sellers called to testify at hearings on the topic of tobacco policy.

Individual characteristics of committee leaders once again had no statistically significant effect on the percentage of tobacco farmers presenting testimony in front of congressional committees on the subject of tobacco policy. Of most importance, committee hearings lead by members hailing from tobacco states were not significantly different from those led by members from non-tobacco states in the percentage of testimony given by tobacco manufacturers/sellers. The personal belief systems of committee leaders also do not have a significant effect on the percentage of tobacco manufacturers/sellers called to testify on the tobacco issue.

As Table 4.7 further demonstrates, only the type of committee venue holding hearings on the topic of tobacco policy has any significant effect on the percentage of testimony given by tobacco manufacturers and sellers. Interestingly, despite their bias toward calling larger percentages of tobacco farmers to testify than a typical committee, agricultural committees actually call significantly smaller percentages of tobacco

manufacturers/sellers than a typical run of the mill committee. More specifically, in agricultural committees, tobacco manufacturers/sellers make up 11% less of the total witnesses testifying at hearings on the subject of tobacco policy than they do in typical run of the mill committees, a result which is significant at the 0.05 level of statistical significance.

This result likely demonstrates a few characteristics of the dynamics of witness selection in the issue of tobacco policy. First of all, agricultural committees have called significantly fewer tobacco manufacturers/sellers to testify in front of them, because the information they would provide would not be as important to the legislation within their jurisdiction as it would be to other types of committees in Congress. Furthermore, while the agricultural committees have gained the reputation for protecting the tobacco industry as a whole, the fact is that agricultural committees really only want to protect one aspect of the industry: tobacco farmers. Thus, agricultural committees have no desire to give a public platform to a part of the industry that sometimes is at odds with the viewpoints of the farmers they are trying to protect. Finally, and possibly most importantly, one of the most important goals of congressional hearings is to conduct oversight of other actors in society (both governmental and nongovernmental). Other committees likely called a greater amount of tobacco manufacturers/sellers to testify not because they wanted to provide a public forum for tobacco companies to express their viewpoints (although in some cases this may have been the case). Rather, these committees sought to call these actors to publicly question them, discredit the idea that tobacco is a safe product for consumption by the public, and discredit the business practices of tobacco companies. Non-agricultural committees (with the exception of

judiciary committees) do not focus their oversight scrutiny on farmers, because society looks more sympathetically on blue-color tobacco farmers than they do on the companies who actually manufacture and sell tobacco and make the most money out of the sale of the product.

Interestingly, judiciary committees call around an expected 17% less representatives of tobacco manufacturers and sellers than the baseline case of miscellaneous committees, a result that is significant at the 0.05 level of statistical significance. As stated earlier, this result should not be taken to mean that the judiciary committees are biased one way or another with respect to who they call to testify at hearings concerning the topic of tobacco policy. More than likely, the result in this analysis demonstrates that judiciary committees concentrated on litigation toward the tobacco industry and thus called more attorneys and legal experts to testify rather than having representatives of the tobacco industry testify.

Conclusion

As this chapter has demonstrated, in tobacco policy, information collection and display decisions appear to be influenced more by the venue in which hearings takes place than by the characteristics of who controls the hearing. In particular, the agricultural venue contained individuals that were more supportive of tobacco interests in their stated reasons for participating in hearings, selected witnesses that gave testimony that was more pro-tobacco in tone than typical committees, and tended to focus less on the health and safety aspects of issues that tobacco interests are likely to

want to ignore and more on the sympathetic components of the tobacco industry: tobacco farmers. For tobacco interests, the most important factor in determining how positive a hearing would be toward their interests was whether the hearing took place in agricultural venues or not.

On the other hand, the individual characteristics of committee members only had an impact on individual participation decisions while having no significant impact on information collection activities. This result ultimately raises the following question: why do the individual characteristics of committee chairmen, particularly whether they come from a tobacco state or not, have no significant impact on information collection and display decisions? After all, the committee chairman is likely the most important actor in hearing collection and display decisions and should be able exert influence over the process, as he or she pleases (Sachs 2003, 11). First of all, in venues outside of the agricultural committee, tobacco state chairmen must deal with a more hostile environment. According to committee rules, committee chairmen are required to allow the minority ranking member (who is more than likely not going to be from a tobacco state) to call at least one witness to testify at a hearing (Sachs 2003, 11; Staff Interviews 2010). In agricultural committees, this will not matter, because the minority side is very unlikely to put up a witness antagonistic to tobacco interests due to the consensual environment that operates there. On the other hand, in other committees, the minority side will more than likely seek to put up witnesses that are antagonistic toward the tobacco industry, because these committee members have no economic interests tied to tobacco or agricultural products in general. Furthermore, because of the prevailing wisdom about the harmful health consequences of tobacco use, even stacking testimony

in the tobacco industry's favor is a risky endeavor, as the public would likely dismiss the hearing as purely political and the result would be damaging to the chairman's reputation.

In any event, tobacco state chairmen also knew that they did not need to stack testimony in more contentious venues like labor and commerce committees. They could depend on the agricultural venue to be steadfast defenders of tobacco policy in terms of the information put out in congressional hearings. In turn, tobacco state legislators could turn their efforts to steadfastly defending tobacco interests on a more individual level through their participation within more contentious venues rather than trying to control the flow of information.

However, as we will see in the next chapter, dependable venues for certain points of view do not always form. Tobacco is a unique issue in some respects. Although there was a conflictual component to the issue that developed over time, the issue started as mainly a distributive issue in which the main concern was protection of a particular group in society: tobacco farmers. Even as the issue became more conflictual and information concerning the health consequences of tobacco mounted over time, tobacco farmers still remained as a group that would be disadvantaged by tobacco regulations and members of the agricultural committee had the duty of protecting agricultural interests no matter whether these farmers came from their districts or not. After all, members from tobacco states had generally supported farmers of other commodities. Nonetheless, venues like agricultural venues in which politics are generally consensual are not present in all venues, nor will they always be driven to act in a consensual fashion in all issues. In the next chapter, I will demonstrate how when

issues become more partisan and conflictual over time, individual belief systems will trump perceived venue biases in determining the content of information presented in congressional hearings.

Table 4.1. – Distribution of Committee Chairmen's Constituencies by Type of Committee

	Constituency of Chair			
Type of Committee	**Non-Tobacco State**	**Split**	**Tobacco State**	**Total**
Other	66 (90.41%)	0 (0.00%)	7 (9.59%)	73 (100.00%)
Agricultural Committee	7 (23.33%)	1 (3.33%)	22 (73.33%)	30 (100.00%)
Total	73 (70.81%)	1 (0.97%)	29 (28.6%)	103 (100.00%)

Row Percentages in Parentheses
Pearson Chi^2 = 46.6167 p<= 0.0001

Table 4.2. – Distribution of Minority Ranking Members' Constituencies by Type of Committee

	Constituency of Chair			
Type of Committee	**Non-Tobacco State**	**Split**	**Tobacco State**	**Total**
Other	61 (83.56%)	0 (0.00%)	12 (16.44%)	73 (100.00%)
Agricultural Committee	16 (53.33%)	1 (3.33%)	13 (43.33%)	30 (100.00%)
Total	77 (74.76%)	1 (0.97%)	25 (24.27%)	103 (100.00%)

Row Percentages in Parentheses
Pearson Chi^2 = 11.3686 p=0.003

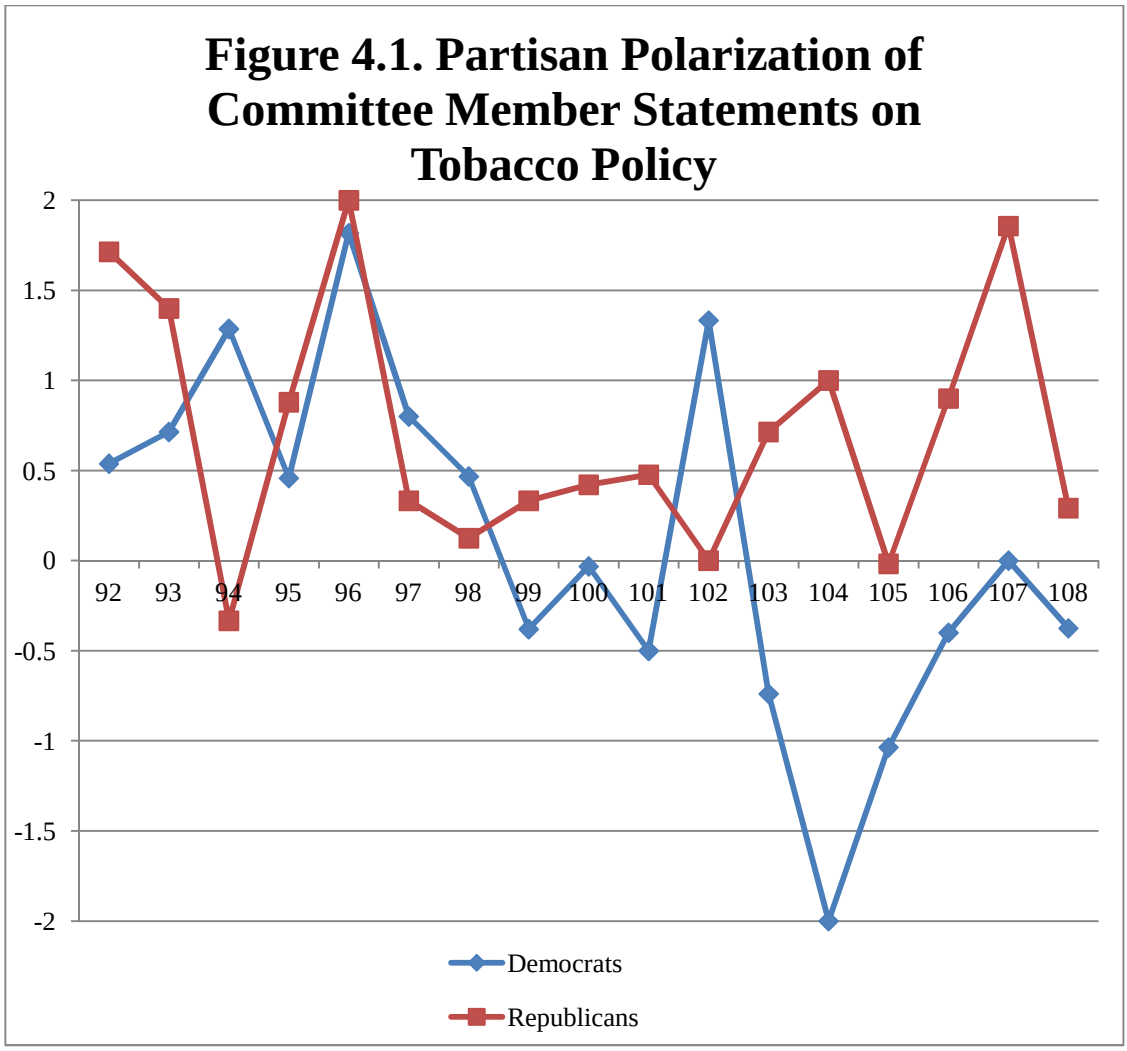


Figure 4.1. Partisan Polarization of Committee Member Statements on Tobacco Policy
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
Democrats
Republicans

Figure 4.2. Tobacco State vs. Non-Tobacco State Polarization of Committee Member Statements

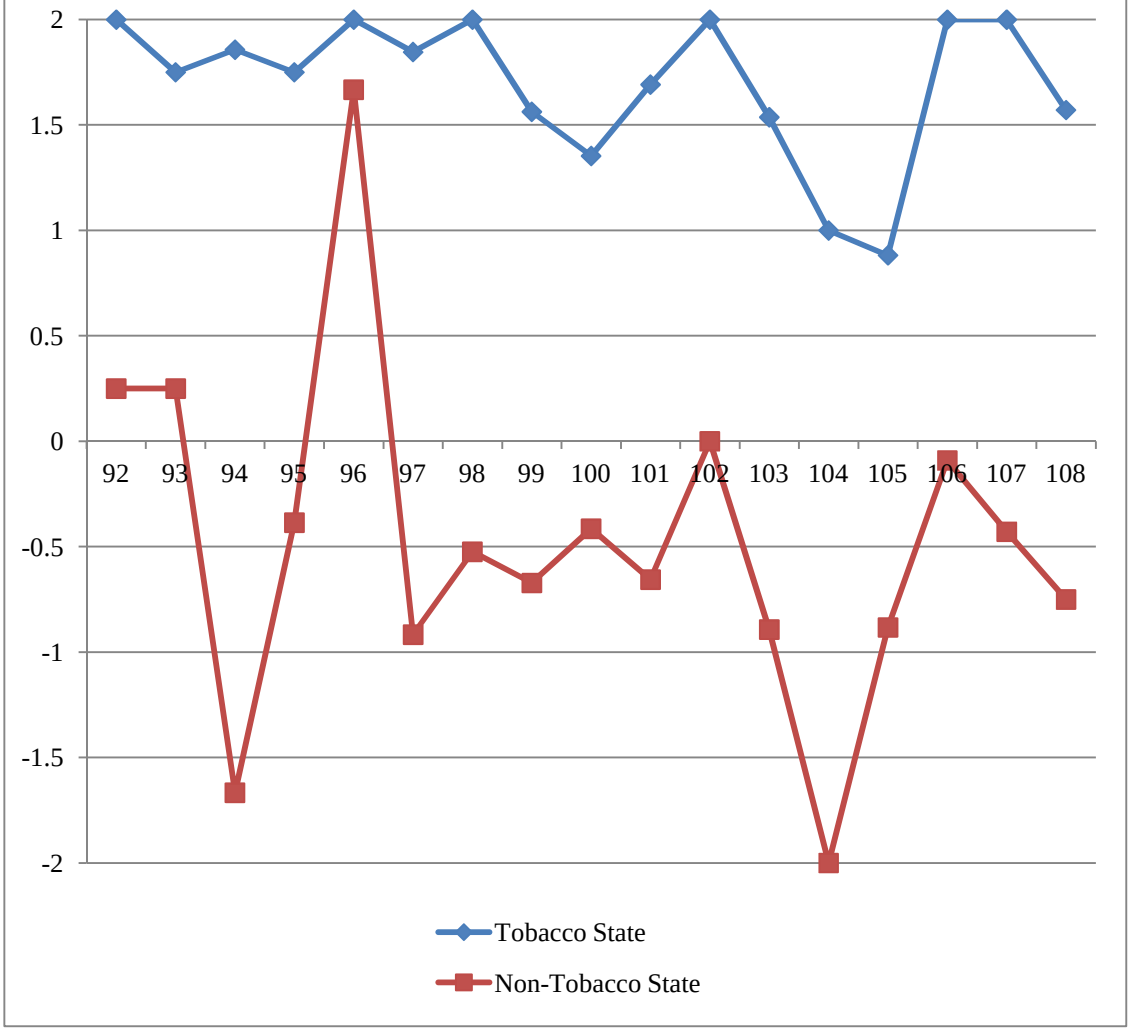


TABLE 4.3. Pooled Ordered Probit Regression Results Testing the Determinants of the Tone of Committee Member Statements in Tobacco Hearings

Independent Variable	Coefficient	Robust Standard Error	z score
Ideology	1.036**	0.194	5.34
Tobacco State	1.358**	0.188	7.21
Agricultural Committee	1.421**	0.199	7.15
Health/Safety Committee	-0.151	0.158	-0.96
Judiciary Committee	-0.113	0.196	-0.58
Chamber	0.411*	0.142	2.88
1980's	-0.378*	0.166	-2.28
1990's	-0.612**	0.147	-4.16
2000's	-0.773**	0.225	-3.43
Cut 1	-0.261	0.191	
Cut 2	0.043	0.190	
Cut 3	0.649	0.198	
Cut 4	0.894	0.200	
N	992		
Adjusted R^2	0.300		
Wald Chi^2	407.9**		

Note: *p =< .05 **p<= .001*(one-tailed).*

Robust Standard Errors in Parentheses

Dependent variable: Tone of statements given by committee members in congressional hearings on the topic of tobacco

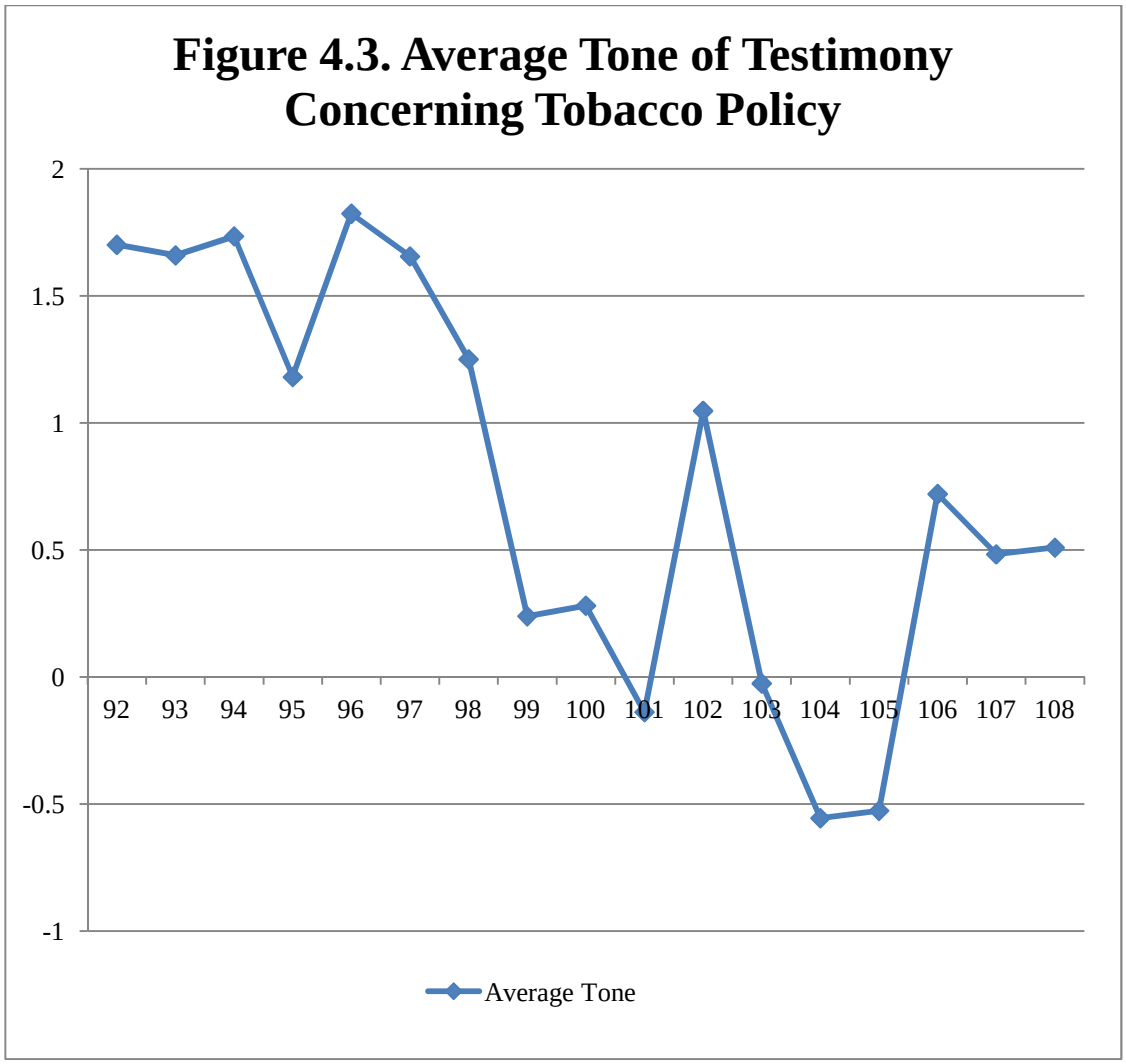


Figure 4.3. Average Tone of Testimony Concerning Tobacco Policy
2
1.5
1
0.5
0
-0.5
-1
92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108
Average Tone

TABLE 4.4. Pooled OLS Regression Results Testing the Determinants of Overall Tone of Testimony in Tobacco Hearings.

Independent Variable	Coefficient	Robust Standard Error	t score
Constant	0.222	0.301	0.74
Chair Ideology	0.216	0.256	0.84
Chair Tobacco State	0.244	0.292	0.83
Percentage Tobacco State	-0.509	0.485	-1.05
Ideological Polarization	0.007	0.348	0.02
Agricultural Committee	1.799**	0.382	4.71
Health/Safety Committee	-0.127	0.319	-0.40
Judiciary Committee	-0.152	0.384	-0.40
Chamber	0.188	0.232	0.81
1980's	-0.452*	0.198	-2.28
1990's	-0.836**	0.212	-3.94
2000's	-1.124*	0.354	-3.18
N	103		
Adjusted R^2	0.582		
F Statistic	33.17**		

Note: *p =< .05 **p<= .001*(one-tailed).*

Robust Standard Errors in Parentheses

Dependent variable: Average tone of testimony within a committee in a particular Congress

Figure 4.4. Types of Group Affiliations of Witnesses Testifying at Congressional Hearings on Tobacco Policy

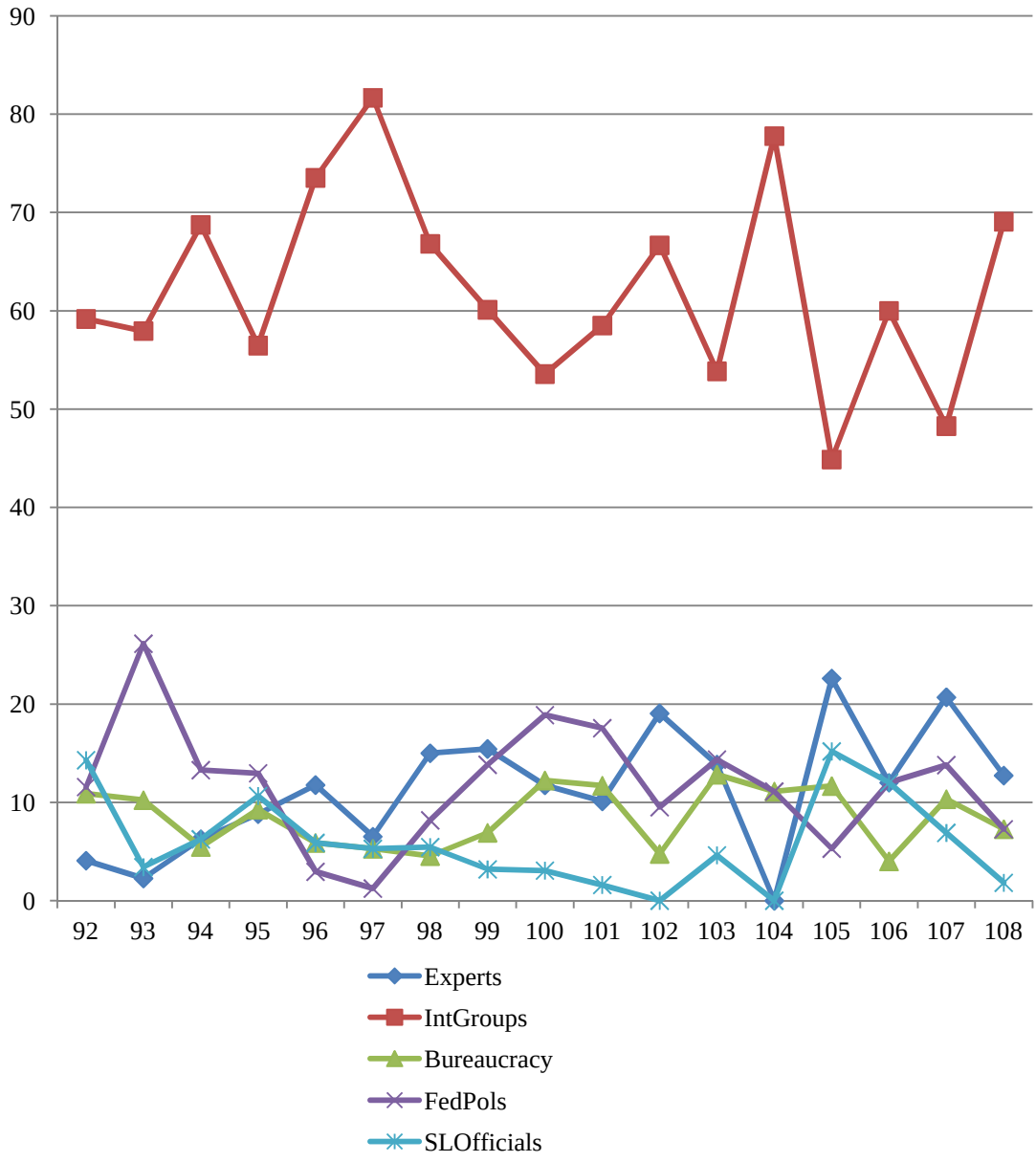


TABLE 4.5. Pooled OLS Regression Results Testing the Determinants of the Percentage of Testimony Given By Health and Safety Advocates and Experts

Independent Variable	Coefficient	Robust Standard Error	t score
Constant	0.218*	0.065	3.34
Chair Ideology	-0.070	0.077	-0.91
Chair Tobacco State	-0.016	0.056	-0.28
Percentage Tobacco State	-0.009	0.116	-0.08
Ideological Polarization	0.037	0.102	0.36
Agricultural Committee	-0.233**	0.064	-3.65
Health/Safety Committee	0.127*	0.067	1.89
Judiciary Committee	-0.220*	0.069	-3.19
Chamber	-0.055	0.046	-1.21
1980's	0.089	0.051	1.73
1990's	0.103	0.065	1.59
2000's	0.281*	0.091	3.10
N	103		
Adjusted R^2	0.447		
F Statistic	23.89**		

Note: *p =< .05 **p<= .001*(one-tailed).*

Robust Standard Errors in Parentheses

Dependent variable: Percentage of Testimony Given by Health and Safety Advocates and Experts

TABLE 4.6. Pooled OLS Regression Results Testing the Determinants of the Percentage of Testimony Given By Tobacco Farmers

Independent Variable	Coefficient	Robust Standard Error	t score
Constant	0.064	0.055	1.18
Chair Ideology	0.005	0.048	0.09
Chair Tobacco State	0.063	0.089	0.71
Percentage Tobacco State	-0.022	0.110	-0.20
Ideological Polarization	-0.087	0.069	-1.26
Agricultural Committee	0.441**	0.095	4.64
Health/Safety Committee	-0.007	0.025	-0.31
Judiciary Committee	0.002	0.029	0.08
Chamber	0.009	0.042	0.21
1980's	0.021	0.041	0.52
1990's	0.021	0.037	0.58
2000's	-0.055	0.039	-1.42
N	103		
Adjusted R^2	0.676		
F Statistic	110.62**		

Note: *p =< .05 **p<= .001*(one-tailed).*

Robust Standard Errors in Parentheses

Dependent variable: Percentage of Testimony Given by Tobacco Agricultural Interests

TABLE 4.7. Pooled OLS Regression Results Testing the Determinants of the Percentage of Testimony Given By Tobacco Manufacturers and Sellers

Independent Variable	Coefficient	Robust Standard Error	t score
Constant	0.156*	0.073	2.13
Chair Ideology	0.079	0.052	1.51
Chair Tobacco State	0.012	0.053	0.22
Percentage Tobacco State	0.012	0.131	0.09
Ideological Polarization	0.113	0.075	1.51
Agricultural Committee	-0.114*	0.056	-2.03
Health/Safety Committee	0.03	0.061	0.50
Judiciary Committee	-0.167*	0.075	-2.23
Chamber	0.039	0.040	0.98
1980's	-0.112	0.070	-1.60
1990's	-0.167	0.073	-2.00
2000's	-0.0901	0.097	-0.93
N	103		
Adjusted R^2	0.139		
F Statistic	2.23*		

Note: *p =< .05 **p<= .001*(one-tailed).*

Robust Standard Errors in Parentheses

Dependent variable: Percentage of Testimony Given by Tobacco Manufacturers and Sellers

Chapter 5. Climate Change Policy – Partisan Issue Contexts, Competitive Subsystems, and Information Collection and Display Decisions

Introduction

In 2005, the Senate Committee on Environment and Public Works held a hearing on the Kyoto Protocol, an international protocol intended to stabilize greenhouse gas emissions in the atmosphere. During this hearing, then-Chairman James Inhofe, a Republican, made the following statement concerning climate change and the Kyoto Protocol:

> "Let me be clear at the outset. I believe the countries that have ratified the Kyoto Protocol are wasting their economic resources, because the science does not justify it. Anthropogenic climate change is, I have characterized, is perhaps the greatest hoax ever perpetuated on the American people. Even if humans were causing global warming – and we are not – but even if we were, Kyoto would do almost nothing to avert it (Hearing Doc. 2008-S321-13)."

By contrast, in the previous Congress, in 2003, at another hearing in front of the Senate Committee on Environment and Public Works again chaired by James Inhofe, the minority ranking member James Jeffords, an Independent caucusing with the Democrats, made the following statement accusing Senator Inhofe of dragging his feet on the climate change issue:

> "Unfortunately we aren't here today to talk about moving forward to find innovative solutions to real world problems. Instead, today's hearing will largely be a mirror or the reverse of the robust and growing consensus in the mainstream community on climate…Unfortunately, there is no new information to be found here today that would dissuade us from acting quickly and responsibly to reduce greenhouse gas and mercury emissions. In today's discussion of a literature survey of climate research, the skeptics are trotting out an argument that is several years old and already discarded by their peers. It is abundantly clear that now is the time to act (Hearing Doc. 2005-S321-5)."

From both sets of statements, it is clear that these two leaders within the same congressional committee disagreed vehemently on how hearings should proceed on the topic of climate change. On the one hand, Senator Inhofe was clearly of the mindset that climate change is a hoax and the information collection and display decisions in congressional hearings should be conducted with the goal of demonstrating the lack of scientific consensus on the issue that he believed was the reality. On the other hand, Senator Jeffords clearly believed that scientific consensus had already been arrived at on climate change and hearings should be conducted to find ways to solve the problem. As this chapter will demonstrate, in the issue of climate change, hearing politics within most venues in Congress are characterized by conflict between two opposing groups. In these situations, unlike what was found in tobacco policy, information collection and display decisions will be driven more by the characteristics of individual committee

members and leaders than by the perceived institutional biases of those conducting the hearings.

Climate Change Issue Context

Unlike tobacco policy, the dynamics of congressional hearing politics in the issue of climate change have been relatively untilled in political science literature, to date. Nonetheless, the issue presents an interesting case study of informational collection and display decisions, as there are logical reasons to suspect that these decisions may operate along a number of lines. First of all, it is a highly technical policy area that involves significant risks and problems for the general public where early action may be key to solving the problem, but also involves significant perceived economic costs to carry out the necessary policies to solving the problem. Thus, if in any policy area, legislators would be concerned in getting the best information in order to make the most informed decision possibly on the issue, it would be in issues similar to climate change policy. As stated earlier, informational theorists argue that the outcomes of particular policies are uncertain, which poses a difficulty for legislators who prefer to choose policies where the outcome is certain, so that they can take credit for policies that they know will succeed and avoid embarrassment in voting for policies with harmful outcomes for their constituencies (Gilligan and Krehbiel 1987, 1989, 1990; Krehbiel 1991). As such, when policy outcomes are particularly uncertain, committee members will attempt to collect the best information possible. On newer and more technical policy issues, policymakers do not have the expertise to be confident their conclusions on an issue are correct, if they have developed any beliefs at all. Thus, policymakers typically must genuinely collect quality information so that they can

develop expertise on the issue, which will inform their conclusions as to what effects particular policies will have (Ainsworth 2002; McQuide 2007). When policymakers are uncertain, the only cue they have to determine the validity of information is the perceived expertise of the individual giving the information. As such, if the informational perspective of informational collection is correct, the following hypotheses should be confirmed:

Informational Perspective Member Statement Tone Hypothesis: Member statements will be relatively neutral concerning climate change, particularly at early stages of the issue when uncertainty concerning the issue is relatively great. Furthermore, subsystem and personal belief biases will not be an important determinant of member statements on the issue.

Informational Perspective Testimony Tone Hypothesis: The tone of testimony concerning climate change will be relatively unbiased and representative of a variety of different perspectives, particularly at early stages of the issue when uncertainty concerning the issue is relatively great. Furthermore, subsystem and personal belief biases will not be an important determinant of the tone of witness testimony concerning the issue.

Informational Perspective Expert Testimony Hypothesis: Legislative hearings will be constructed so that expert information on a topic is gathered and that the testimony of technical and policy experts on a particular issue should be valued. Expert testimony

(i.e. scientific experts) rather than interest group testimony will be the most predominant type of testimony presented in hearings particularly at early stages of the issue when uncertainty concerning the issue is relatively great.

Nonetheless, as anyone following the issue can surely attest, wildly divergent opinions have developed amongst actors involved with the issue. On the one hand, there are members of the environmental coalition who argue that climate change is a significant problem and that current economic practices will only lead to future environmental problems that could threaten the world's survival (Liftin 2000, 249). On the other hand, there are members of the economic coalition who argue that climate change is not a significant problem, evidence is not clear enough to warrant policy action on the issue, and attempting to solve the problem will only harm the economy (Liftin 2000, 249).

Some may argue that the lines of debate fit neatly into the demarcations that separate the jurisdictions of venues within the climate change policy area. According to this perspective, differences in the collection of policy information will be influenced by the biases involved with the subsystem that a particular committee or subcommittee operates within due to the consensual nature of politics that operate within that subsystem (Baumgartner and Jones 1991, 1993; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Jones and Baumgartner 2005; Workman, Jones, and Jochim 2009). Indeed, the issue of climate change includes many competing subsystems and concomitant institutional venues within Congress that could potentially fight over how the issue of climate change is defined. Much like agricultural

committees were more hospitable to tobacco interests, some argue that those venues that routinely deal with the interests of those who would be harmed by the actions necessary to ameliorate climate change (i.e. energy committees) would be likely to be more sympathetic to economic interests. On the other hand, institutional venues that routine deal with the interests of those concerned with environmental protection (i.e. environmental committees) would be likely to gather information that is sympathetic to environmental interests.

Of the types of institutional venues examining the biotechnology industry, the venue type that is most likely to act as a unified subsystem on the issue of climate change is the science subsystem, which includes both of the science committees in the House and Senate. Many members of the science committees have expressed that their desire to serve on the science committees is derived from their desire to serve their constituents (Smith and Deering 1990; Deering and Smith 1997; Frisch and Kelly 2006). Since politics amongst members of constituency-oriented committees tends to be more consensual than other types of committees (Fenno 1973; Smith and Deering 1990; Deering and Smith 1997), we may expect that members of the scientific committees that make up the science subsystem will be more united in their support of scientific research, as these committees were created in part to support scientific research. Due to the large portion of the scientific community's insistence that climate change is a problem, venues like the science committees that are more likely to promote the scientific community may also be more sympathetic to the potential dangers of climate change. As such, if subsystems are unified in the issue of climate change, I expect the following hypotheses to be confirmed:

Unified Subsystem Member Statement Tone Hypothesis: Members from congressional committees that are expected to be sympathetic to interests that downplay the significance of the climate change problem (i.e. energy and agricultural committees) will present statements that are more pro-economic toward the issue of climate change. Members from congressional committees that are expected to highlight the importance of tackling the climate change issue (i.e. environmental and science committees) will present statements that are more pro-environmental toward the issue of climate change.

Unified Subsystem Testimony Tone Hypothesis: Congressional committees that are expected to be sympathetic to interests that downplay the significance of the climate change problem (i.e. energy, economic, and agricultural committees) will preside over hearings that produce more pro-economic testimony toward the issue of climate change. Congressional committees that are expected to highlight the importance of tackling the climate change issue (i.e. environmental and science committees) will preside over hearings that produce more pro-environmental testimony toward the issue of climate change.

Conversely, with the economic costs of solving the problem on the one hand and the increased visibility of the problem as the result of the advocacy of such public figures as Al Gore on the other hand, climate change is a visible and controversial enough issue that could potentially provide an issue political parties can align themselves around. Indeed, significant evidence has been found that political parties

have aligned themselves into distinct camps on environmental issues in general. More specifically, based on League of Conservation Voters voting scores, Republicans and Democrats have become increasingly divided over the issue of environmental policy since the 1970's (Shipan and Lowry 2001; 245). Therefore, if political parties have diverged from each other on all environmental policy issues, there is good reason to expect that parties have aligned themselves around the issue of climate change in particular.

If political parties have aligned themselves into different camps on the issue of climate change, this is a significant development that will likely influence how information collection and display decisions play out. As political parties become more polarized on the issue of climate change, it becomes more likely that each committee venue will be split into competitive coalitions by virtue of the control party leaders have over the committee appointment process and the fact that most committees' memberships break down along partisan lines (Cox and McCubbins 1993; 2005). Therefore, as parties become more polarized on an issue, the likelihood that any naturally sympathetic venues to one side or another will be present decreases, as there will likely be two political parties at odds with each other on the issue within each committee venue. In these cases, we should expect that the personal views of those running the hearing should have more of an impact on the information collection and display process than the type of committee venue in which the hearing takes place.

As I will demonstrate later on, the two political parties have become more polarized on the issue of climate change over time. Anecdotal evidence suggests that, in general, the congressional hearing process acts in a very partisan manner when issues

are more controversial and operate along partisan lines (Staff Interviews 2010). Committee staff members tend to select witnesses to testify with an eye toward supporting whatever viewpoint their chair is seeking to get across in a particular hearing (Staff Interviews 2010). While minority staff members are given the chance to select at least one witness to testify at a hearing, the majority of witnesses are selected by the staff members of the majority party (Staff Interviews 2010). Furthermore, although this rarely occurs, minority staff members have complained that majority staff members have scheduled hearings on days when they knew a minority witness would not be available likely to avoid having that witness testify at a hearing (Staff Interviews 2010). Thus, if climate change has increasingly become a more controversial and more partisan issue, over time, it would not all be surprising to observe these same types of partisan dynamics in the conduct of congressional hearings in controversial issue areas also occurring in climate change hearings, as well.

However, it should be noted that the climate change issue becoming more partisan does not necessarily mean that party identifications of key actors will trump belief systems in determining information collection and display decisions in congressional hearings. The polarization of parties into separate camps in the climate change debate may or may not be due to political parties exerting influence over their members to act in a certain way on the issues at hand, even when these actions may conflict with their own belief systems. Nonetheless, even if political parties are not influencing their members to separate into different camps on the issue, the fact that they are divergent on the issue at hand creates a situation where two coalitions diametrically opposed to one another on the issue will be present in committee after

committee due to the partisan nature of committee member selection. Thus, no venues will be homogenous in their viewpoints on the issue, and the characteristics of who controls the committee will be far more important determinant of information collection and display decisions.

The polarization of committees into different camps on the issue of climate change also becomes important due to the potential effect that changes in the belief systems of key committee actors can play in information collection. Policy actors, including those that sit on congressional committees and subcommittees, tend to hold the following types of beliefs on policy issues (Sabatier and Weible 2007, 194-196):

- **Deep core beliefs –** very general normative assumptions about human nature and the role of government in providing for the public good that span across all policy issues
- **Policy core beliefs –** more specific normative assumptions concerning an entire policy issue
- **Secondary beliefs –** very specific assumptions about single policy issues that are not considered to encapsulate an entire policy issue

If these belief systems guide how committees and subcommittees process information, it seems logical to expect that these belief systems will also have a powerful influence on what types of information these institutional entities collect during the congressional hearing process. In the specific case of climate change, more conservative individuals would likely be more supportive of economic interests in the climate change debate, as the increased regulation of particular industries that would be required to reduce greenhouse gas emissions is antithetical to conservative belief

systems. By contrast, more liberal individuals tend to believe in a more active role for the government in protecting individuals from environmental harm. If belief systems guide how congressional committees make information collection and display decision in congressional hearings, we should expect the following hypotheses to be confirmed:

Belief System Member Statement Tone Hypothesis: Individuals with more liberal/pro-environmental beliefs will give statements that are more pro-environmental toward the climate change issue. Individuals with more conservative/pro-economic beliefs will give statements that are more pro-economic toward the climate change issue.

Belief System Testimony Tone Hypothesis: Committees with chairs that have more conservative/pro-economic beliefs will produce testimony that is more pro-economic toward the issue of climate change. Committees with chairs that have more liberal/pro-environmental beliefs will produce testimony that is more pro-environmental toward the issue of climate change.

In the next section, I will detail the ways in which these expectations will be tested using empirical data collected from congressional hearing transcripts.

Data and Methods

Case Selection. Cases of congressional hearings concerning climate change policy were selected using a two pronged approach. First, hearings were selected by searching through hearings from the "Congressional Hearings Data Set" of the *Policy Agendas* project (http://www.policyagendas.org) in the following subtopic areas: "Air Pollution,

Global Warming, and Noise Pollution," "Weather Forecasting and Related Issues, " and "International Resources Exploitation and Resources Agreement." I then selected those hearings whose descriptions noted that the whole hearing or a substantial part of the hearing dealt with climate change policy. In order to ensure all cases were selected, I then conducted searches using on *Lexis-Nexis Congressional Universe* (http://www.lexisnexis.com) for hearings using the following search terms: climate change, global warming, and greenhouse gas. Through this method, I obtained 142 individual cases of hearing documents published that at least substantially concerned the topic of climate change policy. Data from these hearings were then aggregated at the committee and subcommittee level for each individual Congress, which condensed the number of cases to 95 cases.

Dependent Variable – Tone of Committee Member Statements. The tone of committee member statements in the specific case of climate change was determined as follows. Particular arguments made over the course of a statement were coded as either supportive of the economic coalition in the climate change debate, moderate, or supportive of the environmental coalition in the climate change debate. More specific information on how each statement was assigned can be found in Appendix D. Using PDF XChange Viewer's free PDF editing software[15], notations were made to denote the

[15] PDF XChange Viewer allows users to highlight and mark up PDF documents obtained by other sources. This software can prove invaluable to individuals seeking to content analyze documents on a limited budget. This software can be found at the following website: http://www.tracker-software.com/product/pdf-xchange-viewer

positive, moderate, and negative suppositions made over the course of a statement. Then, the overall statement was coded using the following five-point scale:

- Very pro-economic (-2): Statements made up of mostly or all pro-economic arguments and very little to no pro-environmental or neutral arguments
- Pro-economic (-1): Statements with mostly pro-economic arguments and a substantial, but not equal portion of pro-environmental arguments, or statements with a fairly equal balance of pro-economic and neutral arguments
- Neutral (0): Statements made up of nearly all neutral arguments on the climate change issue or statements with a fairly equal balance of pro-environmental and pro-economic arguments
- Pro-environmental (1): Statements with mostly pro-environmental arguments and a substantial, but not equal portion of pro-economic arguments, or statements with a fairly equal balance of pro-environmental and neutral arguments
- Very pro-environmental (2): Statements made up of mostly or all pro-environmental arguments and very little to no pro-economic or neutral arguments

Dependent Variable – Tone of Testimony. I analyze the tone of information presented in congressional hearings on the topic of climate change policy by analyzing the actual content of hearing testimony itself. Using the same general approach that I used for opening statements, I assign each individual piece of testimony a score on a five point scale from -2 (very pre-economic on the climate change issue) to 2 (very pro-

environmental on the climate change issue) to denote the basic tone of each individual piece of testimony. I then take the average of the scores for each piece of testimony given before a particular committee in a particular Congress to measure the overall tone of testimony in that committee for that Congress.

Dependent Variable – Percentage of Scientific Testimony. In climate change hearings, one of the most prevalent and interesting group of individuals giving testimony are scientific experts. Due to the fact that scientific experts have established a general consensus that climate change is occurring (Oreskes 2004), they are generally seen as promoting the pro-environmental side in the debate on climate change. Thus, naturally, we may expect that scientific experts may be excluded from hearings when those controlling the hearing espouse a more pro-economic belief system. On the other hand, many committee members often seek a certain balance in the types of witnesses they call in order to demonstrate that witnesses from all walks of life support the position they are seeking to espouse (Staff Interviews 2010). Thus, we may not expect any significant differences in scientific witness testimony.

In order to study the factors that influence the decisions to select scientific witnesses to testify at climate change hearings, I measured the information gathered from scientific experts in congressional hearings as follows. First, I coded the number of those testifying at hearings that qualified as an independent scientific expert. Scientific experts include those representing non-partisan think-tanks, universities, or governmental research institutions. Those scientific experts representing partisan interest groups were not included, because they could be seen more as representing a

particular interest than as trying to provide unbiased expert information. I then took the percentage of scientific experts that testified in front of a particular committee in a given Congress.

Independent Variable – Personal Beliefs. In the case of climate change policy, deep core beliefs should affect information collection and display decisions as follows. More conservative individuals would likely be more supportive of economic interests in the climate change debate, as the increased regulation of particular industries that would be required to reduce greenhouse gas emissions is antithetical to conservative belief systems. By contrast, more liberal individuals tend to believe in a more active role for the government in protecting individuals from environmental harm. In order to measure the ideological preferences of committee and subcommittee members that characterize deep core beliefs, I use Poole and Rosenthal's first-dimension DW-Nominate scores, which are based off of roll call votes taken by the committee members (http://voteview.org). This variable is measured on a continuous scale from -1 to 1 with higher scores indicating a more conservative member ideology.

In climate change policy, policy core beliefs comprise more specific beliefs about the role of government specifically in protecting the environment. These beliefs may slightly differ from the ideological beliefs that characterize deep core belief systems. For instance, although some individuals may have conservative beliefs about the role of government in general, these same individuals may believe that protection of the environment is a special instance, in which aggressive governmental policies are necessary. In order to measure the more specific policy core beliefs that span

environmental policies in general, I use the League of Conservation Voters voting scores (http://www.lcv.org/scorecard/), which are based off of roll call votes taken by the committee members on bills with an environmental dimension. This variable is measured on a continuous scale from 0 to 100 with higher scored indicating a more pro-environmental belief system.

Independent Variable – Ideological Polarization. In the context of the overall tone of climate change testimony, it is very likely that ideological polarization between the parties may have another effect aside from making venues more competitive. According to committee rules, committee chairmen are required to allow the minority ranking member to call at least one witness to testify at a hearing (Sachs 2003, 11; Staff Interviews 2010). Minority ranking members will likely be relatively more likely to exercise this privilege when the ranking member's views are far apart from the chairman's and the ranking member does not believe his or her views will be represented at the hearing otherwise. As I will demonstrate later, climate change was a relatively non-contentious issue at its start with both parties in agreement about the potential seriousness of the problem. Thus, minority ranking members (mostly Republicans) likely did not exercise their privilege at the issue's start as they agreed with the decisions made by committee chairmen. However, as time has worn on and the two parties have become more and more divided on the issue of climate change, the impetus for the minority ranking member to exert the privilege to call at least one witness to testify on behalf of their position on the issue has become much stronger. Due to the fact that the two parties started from a pro-environmental position toward the

climate change issue and the fact that Democrats have stayed relatively pro-environmental over time while Republicans have become significantly more pro-economic in their views, it is likely that this polarization has had the effect of causing testimony to become more pro-economic rather than more pro-environmental over time. Democrats were relatively equally motivated throughout time to ensure the pro-environmental position would be presented at these hearings, while Republicans have become more motivated to ensure that the pro-economic position is represented as they have strayed away from the pro-environmental position on the issue. In order to measure this effect, I create two variables taking the absolute values of the differences between both the DW-Nominate scores and the League of Conservation Voter Scores.

Independent Variable – Policy Subsystem Bias. In the specific case of climate change, if there are subsystem biases in the collection of information, congressional committees that are expected to be sympathetic to interests that downplay the significance of the climate change problem (i.e. energy committees) will preside over hearings that produce more pro-economic testimony toward the issue of climate change. Congressional committees that are expected to highlight the importance of tackling the climate change issue (i.e. environmental and science committees) will preside over hearings that produce more pro-environmental testimony toward the issue of climate change. In order to test the validity of this expectation, I created categories and dummy variables for each of the types of subsystems represented by particular committees in Congress that held hearings on the issue of climate change policy relatively often. These categories include the following: environmental, energy, science, and foreign policy.

Independent Variable – Kyoto Protocol Dimension. One of the most controversial debates that took place with respect to the climate change issue was the debate over the Kyoto Protocol. Regardless of partisan affiliation, the vast majority of legislators regardless of their core beliefs tended to disagree with ratification of the protocol due to the significant responsibilities in decreasing emissions that it would put on the United States. Disagreement amongst all congressional policymakers with the Kyoto Protocol was so great that with a 97-0 vote, the Senate passed the Bird-Hagel Resolution which stated that the United States should be signatory to the Kyoto Protocol (105 S. Res. 98). Thus, due to the extreme disagreement with the Kyoto Protocol amongst congressional policymakers, we should expect more negative information to be presented and more negative statements to be given in Kyoto Protocol hearings simply by virtue of the vast disagreement with the Protocol amongst representatives. I control for this effect by including a dummy variable coded 1 when a committee or subcommittee held at least one hearing dealing with the Kyoto Protocol during a particular Congress.

Control Variable – Time. It is expected that some elements of information collection and display in climate change policy simply cannot be accounted for by elements of changes in different key characteristics between different committees across different time periods. To control for the effects of time on informational collection, I include dummy variables for each decade that congressional hearings took place: (1980-1990;

1991-2000; 2001-2006).[16] The 1980's (1980-1990) serve as the reference decade for variables in the model.

Control Variable – Chamber. Of the two chambers of Congress, the House represents smaller constituencies, and thus, may operate in a more parochial manner than the Senate. As such, due to their broader constituency bases, the Senate may show more of a concern toward broader policy issues like environmental protection. In order to control for this effect, I created a dummy variable for each of the models, which equal 0 if the hearing takes place in the Senate and 1 if the hearing takes place in the House.

Statistical Model – Pooled OLS. In order to test the expectations laid out above, I conducted a series of pooled OLS regression analyses that grouped data based on the committee or sub-committee a particular hearing was held in for the committee level models and grouped data based on the member presenting statements in the statement model. A pooled OLS regression assumes that any two unit years can be compared

[16] Although including dummy variables for each of the Congresses can be argued to be more appropriate, doing so uses up a large number of degrees of freedom. With the small number of cases in the committee level models, the loss of degrees of freedom made it impossible for the statistical package to estimate the F statistic, which is necessary to show the significance of the overall model. Furthermore, it is likely that certain characteristics of the chairmen will be nearly perfectly collinear with the particular Congress being controlled for. For instance, since the House and Senate are typically controlled by the same party, it is likely that there are relatively few instances where differences in party control will be observed within Congresses. Additionally, ideological differences within Congresses and between chairs are also likely to be muted due to the high correlation between ideological preferences and party identifications. As Beck, Katz, and Tucker (1998) note, one of the drawbacks of their suggested method of using time dummies for each time period studied is that it cannot account for the effects of variables where there is little to no variation within the time period. As such I use the decade variable approach, as it allows time effects to be captured without using up too many degrees of freedom and allows certain important variables to vary so their effects can be more helpfully studied.

whether across committees or across times and its estimator is a weighted average of collapsing groups down to a single, mean time point and differencing each observation within each group from its group mean. I now turn to a discussion of the results of my analyses.

Committee Member Statements – Results

[Figure 5.1 Here]

Committee member statements provide important insights into why particular committee members participate in congressional hearings. Before reporting the results of what determines the tone of these statements, it is important to first analyze how the tone of these statements have changed over time between the two political parties. As stated earlier, if differences emerge between the two parties on the issue of climate change, individual venues are likely to be more conflictual and personal beliefs of key committee members are likely to matter more in information collection and display decisions. Figure 5.1 presents a graph of the differences between the average tone of statements made by Democrats and Republicans in climate change hearings across time. Remember that more positive values represent more pro-environmental positions toward climate change while more negative values represent more pro-economic positions toward climate change. As this graph depicts, at the start of the issue, Democrats and Republicans were relatively undivided in their statements toward climate change. To be sure, as expected, the Democrats were the more pro-

environmental of the two political parties in the early stages of the issue's development. Nonetheless, differences between the two parties' members on the climate change issue were relatively muted during the early stages of information collection and display on the topic.

However, as time has worn on, wider gaps in the viewpoints of those participating in hearings on the topic of climate change have become more apparent. Starting in the 102nd Congress, Republicans participating in congressional hearings have become decidedly pro-economic in their reasons for participating in climate change hearings. By contrast, Democrats have stayed relatively pro-environmental in their reasons for participating in hearings on the subject of climate change. Thus, while climate change has not always been a partisan issue throughout its history in terms of the reasons that committee members give for participating in hearings, the issue has become more and more of an issue where members have arranged themselves along party lines. I expect that this increased partisanship should have a decided effect in making political dynamics within venues holding hearings on climate change more conflictual.

[Table 5.1 Here]

Turning now to a more systematic analysis of opening statements across time, Table 5.1 presents the results of the pooled OLS regression model testing the determinants of the tone of opening statements. Overall, the model performs very well, as the pseudo R-squared of 0.337 is fairly robust by pseudo R-squared standards and the

Wald Chi^2 of 498.09 is significant at all levels of statistical significance. Each of the control variables are significant and in their expected directions. As expected, time has a significant impact on the tone of member statements with both the 1990's and 2000's producing statements significantly more pro-economic in tone concerning the climate change issue than the reference point of the 1980's. Also, as expected, House members are significantly more likely to give statements that are more pro-economic in tone concerning climate change than members of the Senate, likely due to the parochial politics that operate within the House.

In terms of venue biases, the results demonstrate that none of the types of venues operating on the issue of climate change contains legislators with significant biases in their reasons for participating in congressional hearings when compared with a miscellaneous set of committees. Despite the fact that members of the scientific committee could be hypothesized to have more faith in following scientific advice than other congressmen due to the fact that congressmen to some degree self-select onto the committee they belong (Adler and Lipinski 1997; Cox and McCubbins 1993, 2005; Frisch and Kelly 2005), not even scientific committee members gave statements that were significantly different in tone from a miscellaneous set of committees. Due to the partisan nature of the issue, it is not surprising that different committees have not been unified in their viewpoints in the issue in the same way that agricultural committees were unified in support of tobacco farmers.

On the other hand, individual characteristics of members giving statements have a clear and significant effect on the tone of statements detailing their reasons for participating in climate change hearings. Both deep core and policy core belief systems

are significant determinants of the reasons that committee members give for participating in climate change hearings. With respect to deep core beliefs, more conservative members tend to participate with the intention of bolstering the pro-economic viewpoint at hearings. More specifically, committee members with more conservative DW-Nominate scores were significantly more likely to give statements that were more pro-economic toward the climate change issue than their more liberal counterparts. Unsurprisingly, more pro-environmental policy core beliefs were also related to members giving more pro-environmental reasons for participating in climate change hearings. More explicitly, committee members with more pro-environmental League of Conservation Voters' voting scores were significantly more likely to give statements that were more pro-environmental on the climate change issue than members with less pro-environmental LCV scores.

Finally, as Table 5.1 further demonstrates, member statements tend to be significantly different when dealing with certain aspects of the climate change issue. In particular, when the Kyoto Protocol was addressed by a committee or subcommittee during a particular congressional session, member statements tended to be more pro-economic toward the climate change issue than those given in committees during sessions when the Kyoto Protocol was never addressed. Due to the fact that the Kyoto Protocol was defeated unanimously by both Democrats and Republicans when it was considered by the U.S. Senate, it stands to reason that committee members with many different types of belief systems had reasons to disagree with the provisions of the protocol.

Nonetheless, in terms of participation by committee members, it is apparent that most venues are made up of a variety of pro-economic and pro-environmental legislators that will have very different takes on the climate change issue. Therefore, regardless of whether certain types of information are overrepresented at climate change hearings due to the biases of the committee venue or those controlling the committee, they are likely to also be subject to harsh lines of questioning regardless of the committee venue in which the hearing takes place. I now turn to an analysis of the determinants of the overall tone of congressional hearing testimony to determine whether the same dynamics that drive the tone of member statements also drive the tone of overall testimony presented in congressional hearings.

Overall Tone of Testimony – Results

[Figure 5.2 Here]

Before discussing the results of the model testing the determinants of the overall tone of testimony concerning climate change in congressional hearings, it is important to first analyze how the tone of testimony has ebbed and flowed throughout time. Figure 5.2 presents a graph depicting the average tone of testimony per congressional session on the topic of climate change. As the figure depicts, although the tone of testimony has experienced relatively wide jumps and falls from time period to time period, the tone has generally trended in a pro-economic direction. This result generally comports with my expectation that belief systems and polarization have had a decided effect on the

tone of climate change testimony. For instance, as those likely to support the pro-economic position (i.e. Republican Party members) began to control institutional venues with power over congressional hearings after the 104th Congress, congressional hearing testimony began to take a considerably more pro-economic bent. The tone of testimony took on a particularly pro-economic bent during the 105th Congress when, for the first time, the overall tone of testimony was slightly pro-economic in tone. After the 105th Congress, although testimony does become somewhat pro-environmental in tone at times (particularly in the 107th Congress when Democrats held control of the Senate), the tone of testimony never reaches the levels of pro-environmentalism that characterized the era in which pro-environmentalists controlled all committee venues responsible for informational collection and display decisions.

It should be noted that even after those with pro-economic/anti-environmental positions began to control information and collection decisions, the tone of testimony does not take on an overwhelmingly pro-economic bent. In fact, the overall tone of testimony was pro-economic in tone only in two time periods (in the 105th and 108th Congresses). This result is suggestive of two possibilities. First of all, pro-environmentalists were still likely in leadership positions in committees making information collection and display decisions, even if only in a minority capacity. Due to rules that allow the minority ranking member to call at least one witness to testify at a hearing (Sachs 2003, 11; Staff Interviews 2010), the pro-environmental position likely still received representation in congressional hearings on climate change.

Secondly, those with pro-economic positions were attempting to overcome information within institutional venues that for years had noted the potential problems

involved with anthropogenic climate changes. Trying to stack information in a completely different tone from the way it had been presented for years likely would have been met with calls that information was being unfairly stacked and call into question the informational validity of the hearing itself. This type of mindset can be seen in the opening statement of then-Chairman Dana Rohrabacher in a hearing on climate change in front of the House Committee on Science's Subcommittee on Energy and Environment in 1995, shortly after Republicans took control of both chambers of Congress. In his opening statement, Representative Rohrabacher noted the following:

> [I]t is my goal, as Chairman of this subcommittee, to see that every time we have a hearing, that unlike – and I was very disappointed my first six years in Congress - was there would never really be a dialogue…You would have the experts here and you would have all the experts who agreed with the Subcommittee chairman testify in the first panel, and this is when all the members of the news media were here. And then you would have anybody, anybody who might get on as a witness who disagreed with the Subcommittee chairman's predilections, were put on the last panel in the late afternoon, and nobody was there to hear them…Well, as long as I am Subcommittee chairman, we are going to try our best to have both sides of every issue presented, and side by side, and promote dialogue between the expert witnesses.

As this quote demonstrates, the goal of pro-economic chairmen was not to totally dismiss the pro-environmental side in the climate change debate, but rather to promote more dialogue in the debate. It is likely that not presenting the pro-environmental side would have exposed them to charges of favoritism, more so than pro-environmentalists who could promote the supposition that their stacking of testimony represented the positions of scientific experts, at large.

[Table 5.2 Here]

Turning now to a more systematic analysis of the testimony of witnesses on the subject of climate change across time, Table 5.2 presents the results of pooled OLS regression models testing the determinants of the tone of testimony. Due to the fact that deep core beliefs and policy core beliefs are likely to be correlated with one another as political parties tend to become more homogenous in their belief systems, there was a good chance that many of the independent variables in the model could exhibit multicollinearity with each other. Thus, tests were conducted to determine the degree of multicollinearity within the model. With these tests, it was determined that deep core belief systems were high collinear with environmental belief systems. Thus, two different models were created placing environmental belief systems into one model and ideological belief systems into another model.

As Table 5.2 demonstrates, both models perform reasonably well, as they can explain between 29-35% of the variance in the tone of testimony heard in a particular hearing. In terms of the control variables in the analysis, it appears that the institutional

chamber holding the hearings had negligible effects on the tone of hearing testimony. The House and Senate did not produce significantly different testimony in tone in either of the models. Furthermore, the decade in which the hearing took place only has significant effects on the tone of hearing testimony in Model II. In Model II, only the 1990's produced significantly more pro-economic testimony than the 1980's.

More importantly for this project, contrary to the expectation of punctuated equilibrium theorists, the perceived institutional bias of a committee does not seem to have a large impact over whether information is gathered that recognizes or refuses to recognize that the climate change problem exists. Only foreign policy committees exhibit significant differences than the baseline case of miscellaneous committees, a result that is only significant in Model II and is oddly inconsistent with expectations. Due to the fact that a large portion of the foreign policy hearings dealt with the Kyoto Protocol, which was overwhelmingly rejected by both parties, we should expect that members of this committee would be more likely to present pro-economic information. Yet, holding all other variable equal, foreign policy committees actually presented testimony that was around 0.554 units more pro-environmental than the baseline case of miscellaneous committees.

On the other hand, the belief systems of committee and subcommittee chairmen with the responsibility of making informational collection and display decisions have a significant impact on the tone of hearing testimony. Unsurprisingly, chairmen with more pro-environmental policy core beliefs presided over hearings that contained testimony with a more pro-environmental tone on the subject of climate change. A one-unit increase in the pro-environmentalism of committee and subcommittee chairmen's

League of Conservation voter scores leads to an expected increase of 0.007 units in the tone of supportiveness of the member's statement toward the pro-environmental viewpoint in the more specific climate change debate. Put in a more substantive fashion, a change from an extremely anti-environmental chairman to one that is more moderate in his or her environmental beliefs (an increase from 0 to 50) leads to an expected increase of 0.35 units in the tone of testimony presented in front of a committee or subcommittee on the climate change debate. A change from an extremely anti-environmental chairman to an extremely pro-environmental chairman (an increase from 0 to 100) leads to an expected increase of 0.7 units in the tone of testimony presented in front of a committee or subcommittee on the climate change debate. However, only policy core belief systems are significant determinants of the overall tone of testimony in climate change hearings. With respect to deep core beliefs, increases in the conservatism of the DW-Nominate scores of committee and subcommittee chairmen had no impact on the tone of testimony on the issue of climate change.

Ideological polarization between committee leaders' policy core belief systems also has a significant impact on the tone of testimony presented on the subject of climate change. More specifically, committees and subcommittees with greater absolute differences between chairmen and minority ranking members' League of Conservation Voters scores produced testimony that was significantly more pro-economic in tone than committees with smaller differences between committee leaders in these belief systems. These differences emerging is likely a result of members with a more pro-economic bent taking leadership positions in committees, and if in the minority,

demanding that testimony with a pro-economic bent be represented in hearings on climate change.

Additionally, when committees and subcommittees addressed the issue of the Kyoto Protocol, the tone of testimony tended to be more pro-economic in tone than in committees and subcommittees that did not address the issue. Since Republicans controlled all committees that addressed the Kyoto Protocol issue, this result likely demonstrates that the Democratic minority was less inclined to ensure that pro-environmental viewpoints would be represented during hearings on an issue that they were less in line with the pro-environmental position than they were on other parts of the issue. On the other hand, ideological polarization in deep core beliefs appears to not be a significant factor in influencing the tone of testimony presented on climate change hearings.

The results from Table 5.2 clearly demonstrate that individual belief systems have a much larger role in determining the tone of witness testimony at a hearing than committee venues, a result which is the exact opposite of what was found in the issue of tobacco policy. Nonetheless, some of the results in the preceding section are either anomalous or are not as strong as one would expect. For instance, why do foreign policy committees produce more pro-environmental testimony when one would logically expect the opposite? Furthermore, why are the DW-Nominate scores that measure a committee chair's deep core beliefs not a significant determinant of the tone of testimony when these same scores were such a powerful determinant of individual committee members' positions on the issue?

The answers to these questions likely can be uncovered by excluding members of the federal bureaucracy as part of the witnesses that make up the calculation of the tone of testimony in front of a particular committee. One of the most important purposes for which congressional hearings are conducted is to oversee other actors in society, particularly members of the federal executive branch. During interviews with staff members, many interviewees noted that witness selection done for the purposes of overseeing another actor operates in a very different fashion than witness selection in typical run-of-the-mill hearings (Staff Interviews 2010). Unlike in many parliamentary democracies, legislative actors do not often have a specified time period to directly question the executive branch on the decisions that they make. However, through the congressional hearing process, congressional committee and subcommittee members do have the opportunity to call executive officials to testify before them and directly attempt to discredit the information they provide (Staff Interviews 2010). As a result, at times, interestingly, congressional hearings may be organized to over-represent viewpoints that are inconsistent with the positions of those sitting on the committee (Staff Interviews 2010).

In the case of climate change policy, this issue becomes particularly pertinent because climate change policy is very partisan and is likely to generate intense scrutiny of the executive branch particularly when the president is from the opposite party of the leaders of the committee conducting the hearing. If a substantial number of witnesses were chosen in order for committee chairs to discredit their policy choices/opinions, it may lead to some of the anomalous and weaker than expected results found in the previous analysis because the measurement used mixes the tone of witnesses prepared

for a wide variety of purposes. If witness selection for oversight purposes is as different from witness selection in normal hearings as staff members suggest, these two groups of witnesses should be separated. Of course, it is very difficult to determine whether a witness is being called to oversee their activities or not because committee leaders do not always express their intentions for calling particular witnesses to testify. However, since oversight of the executive branch is a key function of congressional committees and subcommittees, the most likely persons to be called for oversight purposes are members of the federal executive bureaucracy.

[Table 5.3 Here]

In order to demonstrate the effects that inclusion of witnesses called for oversight purposes can have over the results, I have recalculated the tone of testimony presented in front of particular committees and subcommittees in particular Congresses by eliminating the tone of statements made by members of the federal bureaucracy in my calculations. Table 5.3 presents the results of pooled OLS regression models testing the determinants of the tone of testimony excluding members of the federal bureaucracy. Once again, the analysis is separated into two models to avoid multicollinearity problems between the deep core and policy core belief variables. As Table 5.3 demonstrates, the models excluding federal bureaucrats performs considerably stronger than the original models, as these models can now explain around 58-60% of the variation in the dependent variable. In terms of the control variables in the analysis, the results do not change much between these models and the original set

of models. Once again, the tone of testimony presented in front of House committees is not significantly different from the testimony presented in front of Senate committees and only the 1990's exhibit significantly different tone of testimony from the 1980's, with the 1990's being significantly more pro-economic in tone than the 1980's.

The perceived institutional bias of a committee once again does not seem to have a large impact over the tone of information in the issue area of climate change. Furthermore, when the testimony of federal bureaucrats is removed from the analysis, the tone of testimony given in front of foreign policy committees is not significantly different from the baseline case of miscellaneous committees. The difference in results concerning foreign policy committees can likely be attributed to the key oversight role the foreign policy committees played during the negotiation of key climate change treaties, particularly the Kyoto Protocol. During hearings concerning climate change, foreign policy committees routinely called members of the federal bureaucracy to defend the provisions of the treaty. In the case of the Kyoto Protocol, the chairs of foreign policy committees did not call federal bureaucrats, who by and large supported the Protocol, to testify because they agreed with the provisions of the Protocol themselves. Rather, they called bureaucrats to testify in order to question the wisdom of signing onto a Protocol that they thought contained serious flaws. This difference in results demonstrates how witness selection for oversight purposes can be very different from witness selection for general information collection and display purposes.

With respect to the effects of belief systems of key committee actors on the tone of testimony during hearings on the subject of climate change, as expected, policy core beliefs of committee chairs continue to have an important effect on the tone of hearing

testimony and without including federal bureaucrats in the analysis the effect becomes considerably stronger. Chairmen with more pro-environmental policy core beliefs presided over hearings that contained testimony with a more pro-environmental tone on the subject of climate change. A one-unit increase in the pro-environmentalism of committee and subcommittee chairmen's League of Conservation voter scores leads to an expected increase of 0.009 units in the tone of supportiveness of the member's statement toward the pro-environmental viewpoint in the more specific climate change debate. Put in a more substantive fashion, a change from an extremely anti-environmental chairman to one that is more moderate in his or her environmental beliefs (an increase from 0 to 50) leads to an expected increase of 0.45 units in the tone of testimony presented in front of a committee or subcommittee on the climate change debate. A change from an extremely anti-environmental chairman to an extremely pro-environmental chairman (an increase from 0 to 100) leads to an expected increase of 0.9 units in the tone of testimony presented in front of a committee or subcommittee on the climate change debate.

Interestingly, when federal bureaucrats are excluded from the analysis of the tone of testimony, the deep core beliefs of committee chairmen also becomes an important determinant of the tone of testimony in climate change hearings. More specifically, more conservative chairmen tend to oversee hearings with a more pro-economic bent in tone. A one-unit increase in the conservatism of committee and subcommittee chairmen leads to an expected increase of 0.873 units in the pro-economic tone of hearing testimony. Once again, the difference in results can likely be attributed to the fact that the criteria for witness selection for oversight purposes are

much different than the selection criteria for a normal run-of-the-mill hearing. When chairmen call witnesses from the federal bureaucracy to testify, they are likely doing so in order to directly question the wisdom of whatever policies they are pursuing rather than to bolster arguments made by one side or to genuinely collect information. This possibility is even more likely when dealing with a partisan issue like climate change where the two sides are constantly trying to discredit each other's arguments in the debate.

Unsurprisingly, ideological polarization between committee leaders' policy core belief systems once again had a significant impact on the tone of testimony presented on the subject of climate change, even after removing the testimony of federal bureaucratic officials from the analysis. Committees and subcommittees with greater absolute differences between chairmen and minority ranking members' League of Conservation Voters scores produced testimony that was significantly more pro-economic in tone than committees with smaller differences between committee leaders in these belief systems. Additionally, when committees and subcommittees addressed the issue of the Kyoto Protocol, the tone of testimony tended to be more pro-economic in tone than in committees and subcommittees that did not address the issue. On the other hand, ideological polarization in deep core beliefs is still not a significant factor in influencing the tone of testimony presented on climate change hearings, even when removing the testimony of federal bureaucratic officials from the analysis.

Nonetheless, the results in this section demonstrate that belief systems of committee leaders have a far greater impact on the tone of hearing testimony than the perceived biases of committee venues. As stated earlier, more conflictual/partisan issue

contexts, like climate change has become, are likely to produce more conflictual venues in which a natural venue bias (like agricultural committees in the case of tobacco policy) is not likely to be present. I now turn to an analysis of the determinants of the prevalence of scientific experts at congressional hearings on climate change policy to determine whether chairmen with certain belief systems tend to censor certain types of information or whether all types of information are welcomed in these environments.

Types of Witnesses - Results

[Figure 5.3 Here]

Figure 5.3 contains a graph depicting the evolution in the broad categories of witnesses that have testified during hearings concerning climate change. As Figure 5.3 demonstrates, congressional committees and subcommittees have called mostly experts, representatives of private interests, and members of federal bureaucratic agencies to testify before them at congressional hearings. In contrast to tobacco hearings, experts make up a sizable percentage of witnesses in congressional hearings on climate change policy. The percentage of experts testifying at hearings on the subject of climate change only once fell below 20% of the individuals testifying at hearing (the 105th Congress) and even reached as high as 67% of the witnesses during the 97th Congress. In such a technical issue like climate change, it is logical to expect that committee members will want to collect information from experts to try to come to an informed decision on the issue or to simply add credibility to their own predisposed policy positions.

As Figure 5.3 further depicts, from the early stages of the climate change issue until around its midpoint (the 96th-103rd Congresses), experts made up the largest category of witnesses during all congressional sessions where the issue was addressed. However, after the 103rd Congress, the categories of federal bureaucratic officials and representatives of private interests began to make up sizable percentages of the total witnesses called to testify at climate change hearings while the percentage of experts testifying at climate change hearings began to decline. The percentage of experts testifying has shown steady increases since the 105th Congress and has made up the largest category of witnesses from the 106th-109th Congresses.

Nonetheless, representatives of private interests have also begun to make up an increasingly sizable percentage of the total witnesses testifying at climate change hearings. More specifically, representatives of private interests have gone from making up none of the witnesses testifying in climate change hearings during the start of the issue to now making up around 40% of the witnesses testifying during the most recent Congress studied (the 109th Congress). As such, it seems that hearings are more and more becoming a forum for private interests to express their viewpoints than it has been in the past. Such results are consistent with the expectation that hearings are most likely to be used for genuine information collection at their earliest stages. Experts were such a preponderant group in the early stages of the issue, because politicians genuinely did not know how to handle the issue or even if the problem was truly happening. However, as time has gone on and the beliefs of committee members concerning climate change have become more concrete and divergent, committee members have relied on experts less and more on representatives of private interests to present testimony in front of

them at congressional hearings. Nonetheless, as stated earlier, experts still make up a significant percentage of witnesses at hearings on climate change policy. This result suggests that hearings have still served as a platform for expert information to be disseminated to congressional policymakers and the public, likely in order to justify the viewpoints of committee leaders that select witnesses to testify at hearings.

Before moving on to a more robust analysis of one of the most important types of experts that testify at climate change hearings (scientific experts), another significant result displayed in Figure 5.3 is worth mentioning. As Figure 5.3 demonstrates, federal bureaucratic officials make up a fairly large portion of the officials testifying on the issue of climate change. In one Congress (the 104th), federal bureaucratic officials even make up the largest percentage of witnesses (around 50% of the witnesses) testifying on the topic of climate change. This result is noteworthy because in no other issue have federal bureaucrats made up such a sizable portion of the witnesses testifying on an issue in a particular Congress. This result provides further support for the proposition stated in the previous section that in partisan issues like climate change, congressional committees more closely scrutinize members of the executive branch and potentially use hearings as a forum for oversight more than in other issues.

[Table 5.4 Here]

As stated earlier, scientific experts make up one of the most interesting groups to analyze in congressional hearings due to the fact that many in the scientific community

have argued that climate change is a serious problem that should be addressed by the government. However, do conservative, pro-economic individuals still avoid calling scientific experts to testify despite the fact that most in the scientific community espouse a pro-environmental stance on the issue? Table 5.4 displays the results of the model determining the percentage of scientific testimony presented in congressional committees in a particular Congress. As was the case for the overall tone of testimony, concerns about multicollinearity lead to the creation of two different models, placing environmental belief systems into one model and ideological belief systems into another model. Overall, both models perform respectably, as both can explain about 27% of the variance in the dependent variable and both models' F-statistics are significant at all standard levels of statistical significance. In terms of the control variables in the analysis, once again, it appears that both time and the institutional chamber holding the hearings had negligible effects on the percentage of scientific experts called to testify at congressional hearings on climate change. Only the 1990's were significantly different from the baseline 1980's decade in hearing testimony with the 1990's producing significantly smaller percentages of scientific testimony. The House and Senate did not produce significantly different percentages of scientific testimony in either of the models.

Interestingly, venue characteristics and issue dimension characteristics are a much more significant determinant of percentage of scientific testimony than the characteristics of committee leaders, a result that is the exact antithesis of the results found in the last section. As expected, due to their key role in examining scientific issues in Congress, science committees produced an expected increase of about 24-27%

in the percentage of scientific experts when compared with the baseline case of miscellaneous committees. Furthermore, committees that held at least one hearing on the Kyoto Protocol also produced an expected decrease of around 25-26% in the percentage of scientific experts testifying when compared with committees that did not hold hearings on the Kyoto Protocol. This result is not particularly surprising since committees that held hearings on the Kyoto Protocol concentrated on the development of treaties on the issue, and as such, are more likely to concern themselves with how treaties were negotiated and what impacts the treaty will have rather than focusing on the scientific aspects of the issue.

While committee venue and issue dimension characteristics are significant indicators of the degree to which scientific experts will be called to testify at congressional hearings, the belief systems of committee and subcommittee chairmen with the responsibility of making informational collection and display decisions have no significant impact on the percentage of scientific experts called to testify at congressional hearings. This comports well with evidence from committee staff interviews that committee chairmen often seek a certain balance in the types of witnesses they call in order to demonstrate that witnesses from all walks of life support the position they are seeking to espouse (Staff Interviews 2010). In this case, even pro-economic members sought out scientific experts to testify at congressional hearings in order to provide the pro-economic side credibility when presenting information concerning climate change. Pro-economic members wanted to demonstrate that there was more debate within the scientific community on the issue of climate change than

what had been presented in previous congressional hearings and media reports about the issue.

Conclusion

This chapter provides some important information that can go a long way toward explaining why information collected within congressional institutions has appeared to trend in a direction that discounts the importance of solving the climate change problem while scientific evidence has evidently become more solid on the issue over time. From 1995-2006, policymaking institutions within Congress were, the vast majority of the time, controlled by policymakers who believed that climate change is not a significant problem. Thus, in order to support this belief, they gather more information that is consistent with their beliefs even while expert information continues to mount in opposition to these beliefs. In the end, much like how the public tends to choose the news source that supports their opinions on matters, policymakers gather information that is consistent with their beliefs on the issues.

With this said, those with a pro-economic viewpoint on the climate change issue did not ignore the scientific aspects of the issue even though scientific experts at large did not necessarily support their position in the debate. Pro-economic committee chairmen were sure to show balance in the types of individuals called to testify in hearings in order to demonstrate that a balance of individuals supported their position in the debate. In this case, pro-economic chairmen attempted to demonstrate that there was more debate on the hypothesis that climate change was caused by anthropogenic sources than the media and past congressional hearings had demonstrated. It is likely

that pro-environmental chairmen also called economic experts to their own hearings in order to demonstrate that environmental regulation would not significantly harm the economy.

Nonetheless, it is also clear from the results in this chapter that institutional biases are not evident in information collection and display decisions. It is clear that no venues chose information with the intention of leaving out particular viewpoints. No types of committees even exhibited traits amongst the participation of its members that would suggest they are biased venues. Likely the reason that individual characteristics of committee leaders and members were more important in the case of climate change when compared to tobacco policies is due to the more partisan nature of the issue. Although this chapter remains agnostic on whether party identification of members was an important factor in information collection and display decisions, it is clear that the positions of members on the climate change issue did separate along party lines as the issue matured. As this occurred, the likelihood that two groups antagonistic toward each other would be represented on committee after committee became more likely. In the next chapter, I will analyze the issue of biotechnology to demonstrate how information collection and display dynamics can change drastically depending on the dimension of the issue being analyzed in a hearing and the relative maturity of the issue.

Figure 5.1. Polarization of Committee Member Statements on Climate Change Policy

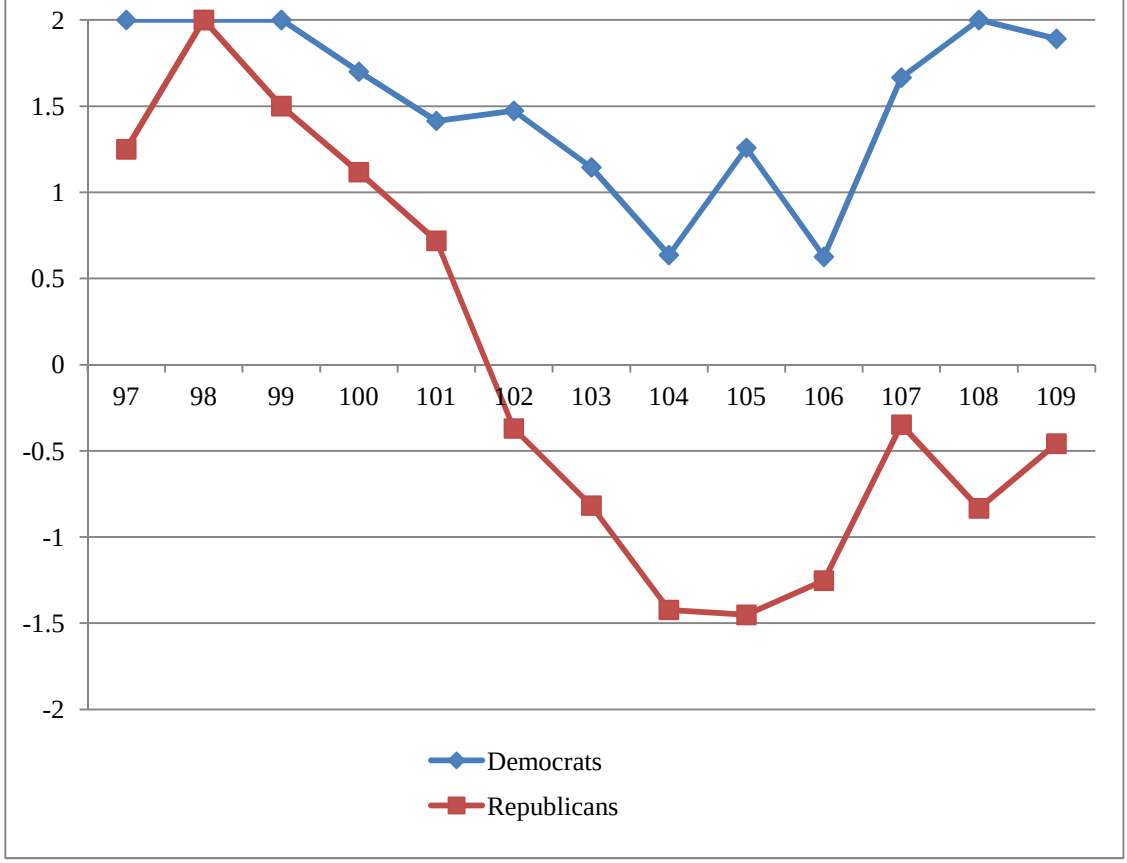


TABLE 5.1. Pooled Ordered Probit Regression Results Testing the Determinants of Tone of Committee Member Statements on Climate Change Issue

Independent Variable	Coefficient	Robust Standard Error	z score
Ideology	-1.572**	0.225	-6.99
LCV Score	0.020**	0.003	7.47
Environmental Committee	-0.342	0.219	-1.56
Energy Committee	-0.030	0.198	-0.15
Science Committee	0.209	0.202	1.03
Foreign Policy Committee	-0.115	0.216	-0.53
Agricultural Committee	0.418	0.303	1.38
Resources Committee	-0.226	0.217	-1.04
Kyoto	-0.540**	0.125	-4.33
Chamber	-0.385*	0.151	-2.54
1990's	-1.016**	0.167	-6.10
2000's	-0.422*	0.187	-2.26
Cut 1	-1.624	0.284	
Cut 2	-1.026	0.286	
Cut 3	-0.209	0.281	
Cut 4	0.362	0.270	
N	807		
Pseudo R^2	0.337		
Wald Chi^2	498.09**		

Note: *p =< .05 **p<= .001*(one-tailed).*

Robust Standard Errors in Parentheses

Dependent variable: Tone of statements given by committee members in congressional hearings on the topic of climate change

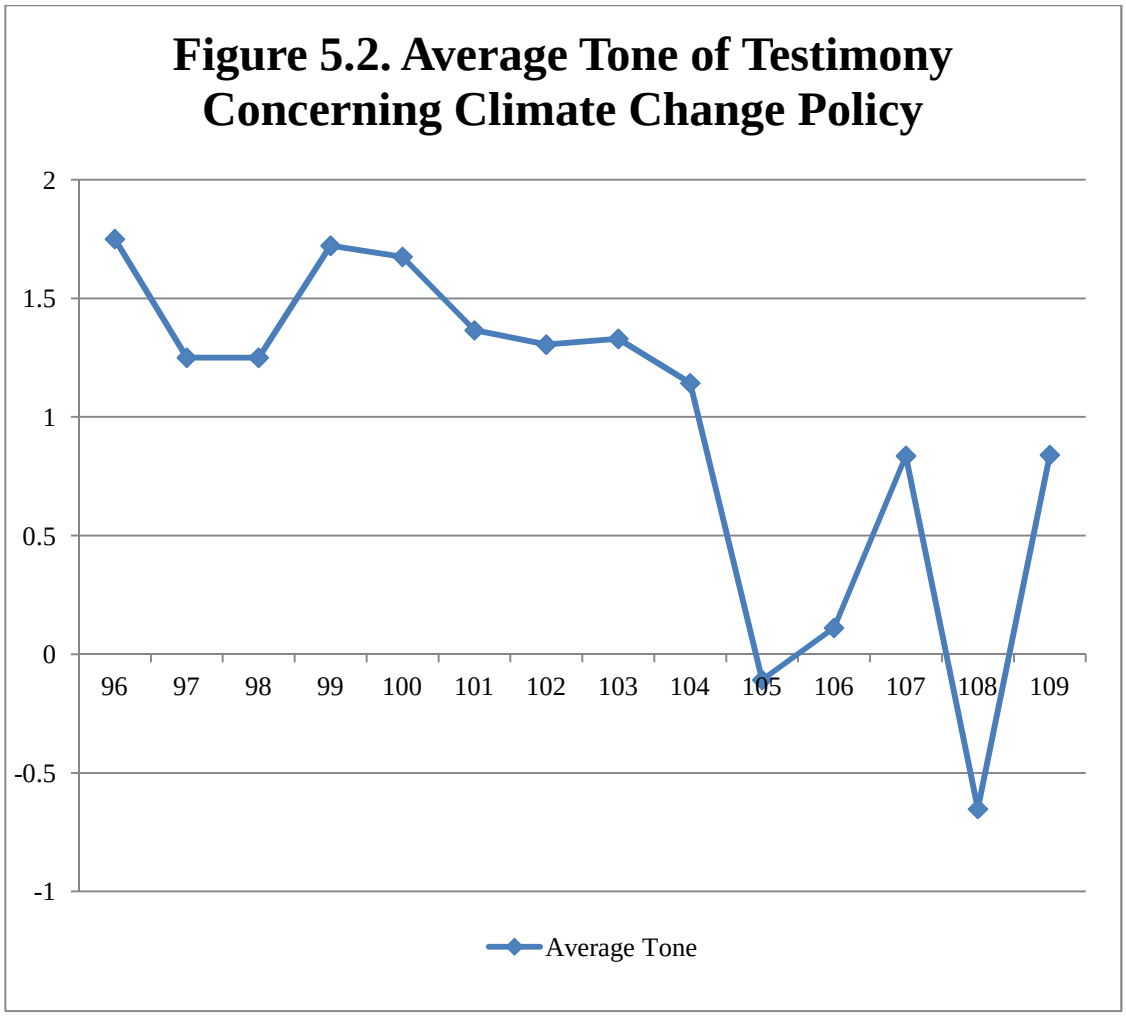


Figure 5.2. Average Tone of Testimony Concerning Climate Change Policy
2
1.5
1
0.5
0
-0.5
-1
96
97
98
99
100
101
102
103
104
105
106
107
108
109
Average Tone

TABLE 5.2. Pooled OLS Regression Results Testing the Determinants of Overall Tone of Testimony in Climate Change Hearings

Independent Variable	Model I	Model II
Constant	1.169*	1.467**
	(0.383)	(0.349)
Chair LCV Score	0.007*	
	(0.003)	
Chair Ideology	---	-0.408
		(0.248)
Environmental Polarization	-0.006*	
	(0.003)	
Ideological Polarization	---	-0.421
		(0.285)
Environmental Committee	-0.142	-0.023
	(0.309)	(0.305)
Energy Committee	0.215	0.233
	(0.275)	(0.283)
Science Committee	0.090	0.211
	(0.303)	(0.308)
Foreign Policy Committee	0.530	0.554*
	(0.318)	(0.309)
Agricultural Committee	0.430	0.402
	(0.282)	(0.317)
Resources Committee	0.039	-0.065
	(0.320)	(0.340)
Kyoto	-0.603*	-0.582*
	(0.287)	(0.318)
Chamber	-0.162	-0.085
	(0.149)	(0.157)
1990's	-0.134	-0.248*
	(0.158)	(0.124)
2000's	-0.320	-0.398
	(0.214)	(0.240)
N	95	95
Adjusted R^2	0.348	0.293
F Statistic	6.39**	4.96**

Note: *p =< .05 **p<= .001*(one-tailed).*

Standard Errors in Parentheses

Dependent variable: Average tone of testimony within a committee in a particular Congress

TABLE 5.3. Pooled OLS Regression Results Testing the Determinants of Overall Tone of Testimony Excluding Bureaucratic Administration Officials in Climate Change Hearings

Independent Variable	Model I	Model II
Constant	1.168*	1.527**
	(0.390)	(0.357)
Chair LCV Score	0.009**	---
	(0.002)	
Chair Ideology	---	-0.873**
		(0.185)
Environmental Polarization	-0.006*	---
	(0.003)	
Ideological Polarization	---	-0.291
		(0.277)
Environmental Committee	-0.271	-0.174
	(0.287)	(0.283)
Energy Committee	-0.063	-0.071
	(0.222)	(0.227)
Science Committee	-0.024	0.056
	(0.280)	(0.291)
Foreign Policy Committee	0.009	-0.012
	(0.334)	(0.291)
Agricultural Committee	0.361	0.271
	(0.323)	(0.335)
Resources Committee	0.159	-0.037
	(0.248)	(0.261)
Kyoto	-1.457**	-1.335**
	(0.325)	(0.354)
Chamber	-0.129	-0.028
	(0.147)	(0.144)
1990's	-0.340*	-0.414*
	(0.196)	(0.154)
2000's	-0.070	-0.023
	(0.185)	(0.214)
N	90	90
Adjusted R^2	0.600	0.578
F Statistic	24.88**	28.02**

Note: *p =< .05 **p<= .001*(one-tailed).*

Standard Errors in Parentheses

Dependent variable: Average tone of testimony within a committee in a particular Congress

Figure 5.3. Types of Group Affiliations of Witnesses Testifying at Congressional Hearings on Climate Change Policy

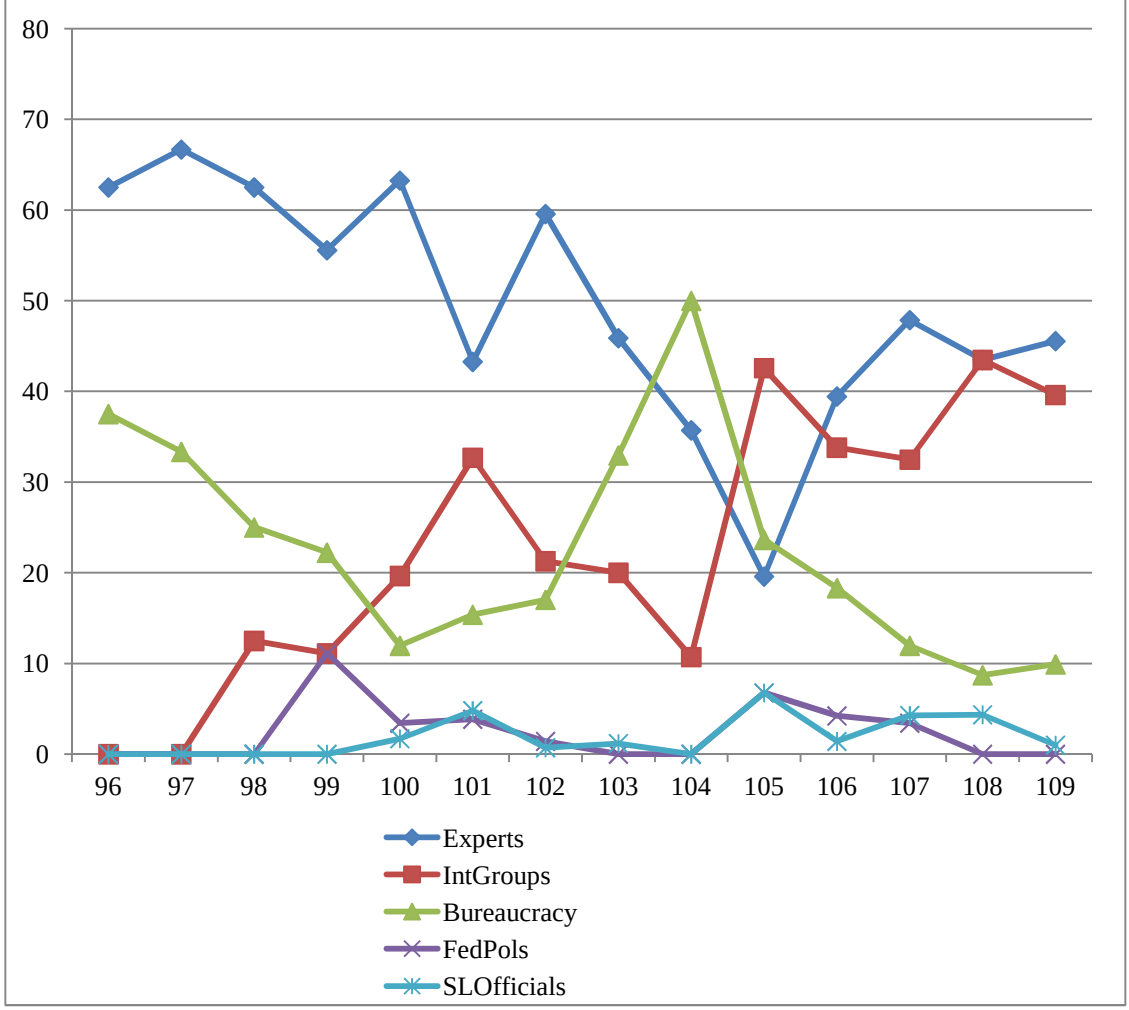


TABLE 5.4. Pooled OLS Regression Results Testing the Determinants of the Level of Testimony Given By Scientific Experts in Climate Change Hearings

Independent Variable	Model I	Model II
Constant	0.479*	0.387*
	(0.153)	(0.146)
Chair LCV Score	-0.001	---
	(0.001)	
Chair Ideology	---	0.070
		(0.111)
Environmental Polarization	-0.001	---
	(0.001)	
Ideological Polarization	---	0.057
		(0.097)
Environmental Committee	0.102	0.112
	(0.134)	(0.134)
Energy Committee	-0.048	-0.029
	(0.111)	(0.110)
Science Committee	0.240*	0.265*
	(0.101)	(0.092)
Foreign Policy Committee	-0.128	-0.134
	(0.098)	(0.097)
Agriculture Committee	0.121	0.118
	(0.166)	(0.172)
Resources Committee	0.103	0.112
	(0.096)	(0.099)
Kyoto	-0.253**	-0.271**
	(0.076)	(0.082)
Chamber	0.025	0.012
	(0.069)	(0.068)
1990's	-0.162*	-0.185*
	(0.077)	(0.068)
2000's	-0.075	-0.114
	(0.114)	(0.105)
N	95	95
Adjusted R^2	0.272	0.272
F Statistic	16.19**	18.19**

Note: * p =< .05 **p<= .001*(one-tailed).*
Standard Errors in Parentheses
Dependent variable: Percentage of scientific expert testimony within a committee in a particular Congress

Chapter 6. Biotechnology Policy –Multidimensional Issue Areas and Information Collection and Display Decisions

Introduction

In 2001, the House Committee on Government Reform's Subcommittee on Criminal Justice, Drug Policy, and Human Resources held a hearing to analyze some of the issues involved with using biotechnology tools to collect embryonic stem cells to be used in the quest to cure different diseases. During this hearing, then-Chairman Mark Souder, a conservative Republican from Indiana made the following statement concerning the use of biotechnology for the purpose of harvesting embryonic stem cells:

> "We all desperately want to find cures for the diseases that affect our friends, our families, and our neighbors. Yet, in our quest to find these cures, we must not ignore or rationalize the tremendous questions posed by destroying living human embryos. Neither should we overlook all the ethical alternatives that exist that do not require the taking of one's life in order to improve the life of another (2002-H401-37)."

By contrast, at the same hearing, the then minority ranking member of the committee, Elijah Cummings, made the following statement in direct opposition to the viewpoints expressed by Rep. Souder in the previous statement:

> "We know that top scientists believe that embryonic stem cells may lead to breakthrough treatments for devastating disorders affect countless American families….Embryonic stem cell research conducted according to Federal guidelines would in no practical sense result in the deprivation of life. It holds a very real

> promise, however, of saving, extending and improving the quality of tens of millions of lives affected by some of the most debilitating and dangerous human diseases and disabilities (2002-H401-37)."

From the previous statements, it would seem that the issue of biotechnology, and thus congressional hearing politics concerning the issue, operates in much the same fashion as the partisan issue of climate change. Nonetheless, the issue of biotechnology is much more multi-dimensional than the previous statements portray. On some other facets of the issue, hearing politics operate in a different fashion than how biotechnology politics are portrayed above. For instance, during a pair of hearings in the 108th congressional session conducted by the House Agricultural Committee's Subcommittee on Conservation, Credit, Rural Development, and Research on the use of biotechnology for agricultural purposes, then-Chairman Frank Lucas, a Republican from Oklahoma, made the following statement trumpeting the positive uses of biotechnology in the agricultural community:

> I can think of few technologies that provide as much hope for the future as biotechnology. The fact that we are able to create healthier, friendlier, and higher yielding crops as a result of modern biotechnology should not be taken lightly…We can cower in fear of science every morning when we wake up, or we can get out of bed, turn on the electric lights, [and] eat our breakfast foods that are able to be stored longer and kept fresher than ever (2003-H161-13).

During the same set of hearings, Tim Holden, the minority ranking member of the committee at the time, also expressed approval of the use of biotechnology for agricultural purposes:

> Over the past few years, the biotechnology sector has made great strides in addressing a wide variety of problems experienced throughout the world….The role of the biotechnology sector in ensuring the economic viability of both farmers and non-farmers can also not be overstated. They have provided farmers with a whole new set of products to assist in increasing crop yields, giving them another means by which to keep their farms running (2004-H161-17)

The preceding statements seem to portray an issue area where hearing politics operate in a consensual manner similar to how hearing politics operated within the agricultural committees on tobacco policy. From these two sets of statements, it is clear that biotechnology is an issue area where hearing politics will in large part be dictated by the dimension of the issue that is being examined at a hearing. As this chapter will demonstrate, during the early development of the issue, information collection and display decisions operated in a fashion consistent with how decisions would be made by committee members genuinely seeking information on an issue. However, as time moved on and committee members gained a better understanding of the issue, hearings began to be used to fit the institutional biases of committees or the belief systems of committee members, depending on the dimension of the issue being analyzed by the hearing.

Biotechnology Issue Context

According to the United Nations Convention on Biological Diversity, the term biotechnology refers to "any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use (UN Convention on Biological Diversity)." As this definition suggests, the term biotechnology can refer to a number of different activities that make up the use of living organisms to modify materials for a specific purpose. The activities include, but are not limited to, the following:

- Environmental biotechnology – the use of organic material to maintain biodiversity and to more quickly degrade harmful contaminants in an environment
- Biotechnology in pharmaceutical manufacturing – the use of organic material to manufacture medical drugs, vaccines, and antibiotics
- Gene therapy - the use of genes "to treat or prevent disease" through replacing abnormal genes and/or repairing or altering dysfunctional genes(U.S. National Library of Medicine)
- Genetic testing – the use of biotechnology to test individuals for potential diseases and to attempt to treat individuals based on the results of these tests
- Agricultural biotechnology – the manipulation of genetic material within crops and plants to increase agricultural productivity, ward off pests without the use of pesticides, and improve the taste and appearance of food among other

advantages. May also refer to the genetic alteration of animals for the purpose of improving food production.

- Industrial biotechnology – the use of biotechnology to increase efficiency in manufacturing industries (i.e. textiles, chemicals, food processing, etc.)
- Cloning – the use of biotechnology to make genetically identical living items (i.e. humans, animals, cells, tissues, etc.)
- Stem cell treatment – the introduction of cells with the ability to "renew themselves indefinitely and differentiate into descendent cells that have a specific function" into tissue in order to treat disease (Okarma 2001; Sheingate 2006, 255)
- Marine biotechnology – the use of biotechnology processes in ocean environments to improve the ecological environment in the ocean
- Genetic sequencing – the study of the genetic makeup of different species of animals and plants (i.e. Human Genome Project)

Although each of the preceding purposes for which biotechnology is used makes use of the same tool to accomplish specific purposes, they have not always been treated in the same fashion by U.S. policymakers. For instance, according to past research on the topic, as Sheingate (2006) demonstrates, U.S. policy has generally followed a "bifurcated" path in which the U.S. government has supported the development of agricultural biotechnology techniques while strongly regulating the use of biotechnology for health purposes, in particular for cloning and stem cell therapies. Sheingate (2006) further shows that information presented on the issue has been more positive across time when addressing the agricultural dimension of the issue than it has

been in the health dimension of the issue. The consensus politics that have operated on the issue of agricultural biotechnology is interesting in light of the significant debate on the issue and the fact that the European Union has placed significant regulations on agricultural biotechnology (Sheingate 2006). However, why have divides occurred in the tone of information presented on agricultural biotechnology vis-à-vis health biotechnology? Are the two issues treated differently by all congressional actors regardless of the institutional biases of the committees they serve on or their own belief systems or do informational tones depend on the characteristics of the committee holding the hearing?

As stated in an earlier chapter, multiple dimensions exist in many policy issues and not all of these dimensions will cause a divide amongst different political parties (Riker 1982; Wolbrecht 2000; Talbert and Potoski 2002) or amongst individuals with different belief systems. In Congress, different dimensions of a policy issue can all be considered simultaneously by different policy venues like committees and subcommittees (Simon 1983; Baumgartner and Jones 1993; Jones 2001). As such, the different dynamics on these dimensions may cause subsystems to act very differently depending on the dimension being considered. In such issue contexts, certain dimensions of the issue may exhibit qualities consistent with distributive issue contexts while other dimensions of the issue may exhibit qualities consistent with more partisan issue contexts.

On policy issues that are more complex and multidimensional, multiple existing policy subsystems working on other related issues have a vested interest in policymaking on the issue (Zafonte and Sabatier 1998; Fenger and Klok 2001; Weible

2008; Jones and Jenkins-Smith 2009; Weible, Sabatier, and McQueen 2009). Each subsystem working on the issue may exhibit completely different characteristics depending on what dimension of the issue is being examined. On dimensions of the issue with a distributive component, committees within subsystems whose members have a vested interest in extracting benefits on the issue may exhibit qualities consistent with unified subsystems when collecting and displaying information in hearings. On the other hand, on dimensions of the issue with a partisan component, committees within subsystems may exhibit qualities consistent with competitive subsystems when collecting and displaying information in hearings.

The existence of multidimensionality in certain issues can clearly be seen in the policy domain of biotechnology. First of all, early on in the issue, little was known about biotechnology and the potential effects (both negative and positive) that the tool could have on society. As McQuide (2007) describes, public knowledge of the issue was relatively sparse at the start of the issue's emergence on the U.S. government's agenda. According to polling done in January of 1985 when the topic was beginning to gain more congressional attention in congressional hearings, 54% of the public had not heard of biotechnology or genetic engineering and 35% had no opinion or did not know whether or not it was necessary for the industry to be regulated by the government[17] (McQuide 2007). During congressional hearings on the topic of biotechnology, congressional committee members spoke of the need to balance the benefits and risks of biotechnology and of the need to gather information on the topic to make well-informed

[17] McQuide (2007) takes this information from a Cambridge Reports/Research International Survey from January of 1985.

decisions. For instance, in 1977, during a hearing on biotechnology policy in front of the Committee on Science and Technology's Subcommittee on Science, Research, and Technology, the ranking member for the minority, Harold Hollenbeck, made the following statement concerning the purpose of the hearing:

> [W]e are all looking forward to learning more about this intricate field in the coming months, such that we can make a well-informed contribution to legislative consideration in the future on the future of genetic engineering (78-H701-22).

In 1977, Don Fuqua, the then-chairman of the Science Policy Task Force under the Senate Committee on Science, Technology, and Space spoke of the need to understand how to strike a balance between the risks and benefits of biotechnology research:

> These hearings will attempt to cast some needed light on two questions that have been at the heart of the recombinant DNA controversy: how can we reap the benefits of recombinant DNA research while protecting humanity against unacceptable biological risks; how can we protect researchers, the public at large, and the environment from hazard while respecting the scientist's freedom to conduct research in a responsible manner; and finally, to what degree can this protection be accomplished by self-regulation and to what degree must we rely on public authority?...In these circumstances the time is propitious for a renewed inquiry into this complicated but important issue of science policy (78-S261-21).

Both of the preceding statements suggest that congressional policymakers were not confident of what the consequences of using biotechnology tools would be and wanted to gain a better understanding of the issue at congressional hearings in order to make the best decisions possible on the issue. As I will demonstrate later, the generally neutral tone of both Republican and Democratic committee member statements on the issue during its emergence on the congressional agenda is suggestive of this possibility. If congressional policymakers were genuinely uncertain about the effects of biotechnology policy and wanted to gain the best information possible on the issue, we would expect the following hypotheses to be confirmed:

Informational Perspective Member Statement Tone Hypothesis: Member statements will be relatively neutral concerning biotechnology, particularly at early stages of the issue when uncertainty concerning the issue is relatively great. Furthermore, subsystem and personal belief biases will not be an important determinant of member statements on the issue.

Informational Perspective Testimony Tone Hypothesis: The tone of testimony concerning biotechnology will be relatively unbiased and representative of a variety of different perspectives, particularly at early stages of the issue when uncertainty concerning the issue is relatively great. Furthermore, subsystem and personal belief biases will not be an important determinant of the tone of witness testimony concerning the issue.

Informational Perspective Expert Testimony Hypothesis: Legislative hearings will be constructed so that expert information on a topic is gathered and that the testimony of technical and policy experts on a particular issue should be valued. Expert testimony (i.e. scientific experts) rather than interest group testimony will be the most predominant type of testimony presented in hearings particularly at early stages of the issue when uncertainty concerning the issue is relatively great.

Nonetheless, as time moved on in the issue area, congressional policymakers became more confident in their viewpoints on the issue. However, unlike the other two issue areas I have examined, the beliefs of congressional policymakers and the politics concerning the issue differed based on the dimension of the issue being analyzed. Certain biotechnology issue dimensions were relatively uncontroversial and generally led to agreement between the two parties on the dimension of the issue at hand. For instance, during hearings on the Human Genome Project, committee members from both parties generally spoke very positively about the project and the potential benefits the research could generate while downplaying the risks that could come from engaging in the project[18]. Many other topic areas including marine biotechnology, industrial biotechnology, and environmental biotechnology also followed this same general trend of consensus.

Yet, while politics on many dimensions of the biotechnology issue were marked with consensus, a few dimensions of the issue produced their share of controversy in the

[18] See the following hearing documents for examples of the consensus between the two parties on the Human Genome Project: 90-H701-34, 90-S261-32, 90-S311-58, 2003-H361-36

public at large. In particular, the dimensions of the issue dealing with agricultural biotechnology and the use of biotechnology tools to create and clone human embryos and human embryonic stem cells for health purposes have been the source of some debate in society. In the case of agricultural biotechnology, controversy over the issue has centered on whether or not genetically modified crops are harmful to the environment or to the health of the individuals who consume them. Proponents of the use of biotechnology in agriculture argue that genetically modified crops grow faster and are more resistant to the harmful effects of pests, drought, and other conditions that limit the growth of plants than are traditionally grown crops (Bakshi 2003, 212). Furthermore, these advances in plant productivity can be obtained without the use of fertilizers and insecticides that can be expensive and harmful to the environment (Bakshi 2003, 212). As a result, biotechnology has been held up by its proponents as a method to increase the availability of food in regions where poor growing conditions have led to widespread starvation (Bakshi 2003, 212).

On the other hand, opponents of the use of biotechnology in agriculture have argued that the benefits of genetically modified crops are not worth the significant environmental and health risks that could result from their use. In particular, opponents argue that, among other harmful effects, genetically modified crops may increase allergic reactions to food, increase resistance to antibiotic medicines amongst individuals who consume genetically modified food, unintentionally harm species that were not intended to be affected by genetic modification of crops, and increase the toxicity of food (Bakshi 2003, 213-221). As such, opponents of agricultural

biotechnology are very distrustful of food that has been genetically modified and seek to use food that has only been grown through natural methods.

The lines of debate in the issue of agricultural biotechnology seem to have the opportunity to divide across committee venues as opposed to within these venues. In particular, due to the consensual nature of politics within the agricultural subsystem and the historical role of the committee in promoting all agricultural commodities, members of the agricultural committees in Congress will be significantly more positive toward the use of biotechnology than a typical run of the mill committee. The genetic manipulation of crops provides farmers with a new tool to increase agricultural productivity and ward off pests without the use of pesticides. As such, members of both political parties within the agricultural subsystem are likely to be supportive of biotechnology, due to its importance for farmers in their respective districts, and will likely use congressional hearings on the topic to encourage development of this tool for future use. On the other hand, while other committees may not necessarily be more negative toward the use of biotechnology, due to the lack of consensus in other committees, it is more likely that the safety risks involved with agricultural biotechnology will be addressed in these other committees. As such, if the preceding analysis is correct, we should expect the following hypotheses to be confirmed:

Agricultural Unified Subsystem Member Statement Tone Hypothesis: Agricultural committee members will be more supportive of the biotechnology industry in their opening statements than members of miscellaneous committees.

Agricultural Unified Subsystem Testimony Tone Hypothesis: Since agricultural committees fit the unified subsystem type, agricultural committees will produce significantly more positive testimony toward the biotechnology industry than miscellaneous committees. Since most members of the committee are in agreement on the conception of a policy issue, the personal belief systems of committee chairs will have little to no impact on the information collection process in the agricultural policy dimension of biotechnology.

In addition to the agricultural subsystem, another subsystem type which could have the potential to act as a unified subsystem on the issue of biotechnology is the economic promotion subsystem, which is made up of the two Small Business committees in the House and Senate and the Joint Economic Committee. The economic promotion subsystem possesses certain qualities that could cause it to act as a unified subsystem when dealing with the issue of biotechnology. First of all, many members of the Small Business committees that operate within the economic promotion subsystem have expressed that their desire to serve on the committee is derived from their desire to serve their constituents, particularly small businesses that operate within their individual districts and states (Smith and Deering 1990; Deering and Smith 1997; Frisch and Kelly 2006). Politics within committees whose members are more constituency-oriented tend to be more consensual and less divisive, as congressional policymakers support each other's demands for constituency benefits to ensure legislative support for their own constituency's demands in the future (Fenno 1973; Mayhew 1974; Weingast 1979;

Shepsle and Weingast 1981; Tullock 1981; Weingast and Marshall 1988; Smith and Deering 1990; Deering and Smith 1997; Maltzman 1997).

Additionally, much like the stated goal of the committees within the agricultural subsystem is to promote the agricultural industry, the goal of many of the committees within the economic promotion subsystem is to assist the development of businesses, particularly small businesses. For instance, the House Small Business Committee states that its mission is "to protect and assist small businesses." As such, the committee has the jurisdiction to assist with "small business financial aid, regulatory flexibility, and paperwork reduction." This stated jurisdiction suggests a committee that seeks to decrease barriers to the development of businesses rather than placing more regulations on an industry. As such, we may logically expect that the committee would be biased toward reducing the barriers to development of businesses in all industries, including biotechnology.

In the specific context of biotechnology policy, committees within the economic promotion subsystem have the jurisdiction to conduct hearings on a wide variety of general economic topics including federal government promotion of biotechnology companies, patenting of products produced through the use of biotechnology, and the practical and commercial uses of biotechnology in areas like agriculture. While some of these issues are somewhat controversial, many of these issues have the propensity to unite members of the economic promotion subsystem in support of the biotechnology industry. For instance, in the case of federal promotion and support of the biotechnology industry, members of the economic promotion subsystem are more likely than members of other committees to recognize how beneficial federal promotion and

research and development assistance can be to small businesses within an industry. While not all members of the economic promotion subsystem will have a biotechnology firm in their district or state, they are also likely to realize that support for federal promotion of the biotechnology industry may lead to support from other committee members when an industry in their state or district needs federal promotion and/or assistance. Furthermore, while many opponents of patents for biotechnology products argue that such patents could ultimately lead to the patenting and commercialization of actual living organisms like animals and humans, due to their experience working to promote small businesses of all types, members of the economic promotion subsystem are likely to downplay such criticisms because they recognize the importance of such patents to small burgeoning businesses like many biotechnology firms.

As such, since many biotechnology companies are small businesses and since the development of the biotechnology industry has the potential to positively affect the economy in many different districts and states, members of the economic promotion committees are likely to be supportive of the biotechnology industry. On the other hand, while other committees may not necessarily be more negative toward the use of biotechnology, due to the risks involved with expansion of the biotechnology industry and the lack of consensus concerning these issues in other committees, it is more likely that the risks that could result from expanding the biotechnology industry will be addressed in these other committees. As such, if the preceding analysis is correct, we should expect the following hypotheses to be confirmed:

Economic Promotion Unified Subsystem Member Statement Tone Hypothesis: Small Business and Joint Economic committee members will be more supportive of the biotechnology industry in their opening statements than members of miscellaneous committees.

Economic Promotion Unified Subsystem Testimony Tone Hypothesis: Since Small Business and Joint Economic committees fit within the unified subsystem of economic promotion, Small Business and Joint Economic committees will produce significantly more positive testimony toward the biotechnology industry than miscellaneous committees.

The final subsystem with the potential to act like a unified subsystem in information and collection decisions is the science subsystem, which is made up of the two science committees in the House and Senate. Much like the agricultural and small business committees in the House and Senate, many members of the science committees have expressed that their desire to serve on these committees is derived from their desire to serve their constituents (Smith and Deering 1990; Deering and Smith 1997; Frisch and Kelly 2006). Since politics amongst members of constituency-oriented committees tends to be more consensual than other types of committees (Fenno 1973; Smith and Deering 1990; Deering and Smith 1997), we may expect that members of the scientific committees that make up the science subsystem will be more united in their support of scientific research and development, as these committees were created in part to support scientific research. Since biotechnology is a heavily science-centric

industry that requires a significant amount of scientific research and development to expand and thrive, we may expect that the committees that make up the science subsystem will be more positive toward the biotechnology industry when collecting and displaying information in congressional hearings than other types of committees.

With this said, the scientific committees face certain obstacles that may prevent them from acting like a prototypical unified subsystem when collecting and displaying information in congressional hearings. First of all, unlike the committees that make up the economic promotion and agriculture subsystems, the scientific committees in Congress held a significant amount of hearings on the biotechnology issue during the early stages of the development of the issue in Congress. As stated earlier, during the early stages of the issue, beliefs had not yet developed and members were genuinely uncertain about what actions to take on the issue. Thus, during the early stages of the process, the science committees may have used the congressional hearing process to hear from a variety of different perspectives rather than using the process to express and drum up support for scientific research and development. Furthermore, on several occasions, science committees did have to address the more controversial dimensions of the biotechnology issue (i.e. human cloning and embryonic stem cell research) when conducting hearings. As was the case in the climate change issue, controversial issues have the potential to divide committees, even those that normally act as unified subsystems. Nonetheless, if the science subsystem acts as a unified subsystem in the issue of biotechnology, we should expect the following hypotheses to be confirmed:

Science Unified Subsystem Member Statement Tone Hypothesis: Science committee members will be more supportive of the biotechnology industry in their opening statements than members of miscellaneous committees.

Science Unified Subsystem Testimony Tone Hypothesis: Science committees will produce significantly more positive testimony toward the biotechnology industry than miscellaneous committees.

In contrast to the dimensions of the issue described above, in the case of the use of biotechnology tools to create and clone human embryos and human embryonic stem cells for health purposes, debate over the issue centers around the ethical nature of using material from human embryos to help cure diseases. Proponents of using material from human embryos to help treat diseases argue that the alternatives to using embryonic materials are not as effective, and thus, ethical considerations should not prevent the government from allowing medical researchers to use embryonic material to find cures to diseases. As Nisbet (2004, 132) notes, unlike adult stem cells, embryonic stem cells "have yet to be programmed to be specific" to certain parts of the human body like the brain or the heart. As such, according to proponents of embryonic stem cell treatments, while adult stem cells can only form tissue from the part of the body they originated, embryonic stem cells have the ability to form a wide variety of tissues from many different parts of the body, and thus, are easier to harvest and culture for the purpose of curing diseases like Parkinson's Disease, AIDS, and spinal cord injuries (Nisbet 2004; Raff 2003; Smith et al 2007).

Opponents of embryonic stem cell research counter that the derivation of human embryos to date necessarily involves the destruction of the embryo (Nisbet 2004, 132). As such, since most critics of embryonic stem cell research believe that embryonic matter is where life begins, critics argue that the derivation of embryonic stem cells involves the unnecessary taking of a human life. Furthermore, as the following portion of an opening statement made by Rep. Souder attests, critics of embryonic stem cell research also argue that embryonic stem cell research is unnecessary since adult stem cells has the same potential to cure diseases as embryonic stem cells:

> Contrary to the impressions created by advocates for embryonic stem cell research, the potential of such cells remains entirely speculative, because embryonic stem cells have never been successfully used in clinical applications with human patients. Lost in the debate is the fact that all of the clinically successful human applications of stem cells to date have been conducted with adult stem cells (2002-H401-37).

Controversy also surrounds the issue of cloning of embryos for much of the same reasons that disagreements occurred in the issue of stem cell research. While virtually all participants in the cloning debate are opposed to the use of cloning for reproductive purposes, a great deal of disagreement exists over whether cloning of human embryos should be utilized for therapeutic purposes. As Kfoury (2007, 112) describes somatic cell nuclear transfer, more commonly referred to as therapeutic cloning, involves “the transfer of nuclear material isolated from a somatic cell into an enucleated oocyte in the goal of deriving embryonic cell lines in the same genome as

the nuclear donor." In the following opening statement during a hearing on therapeutic cloning, Henry Waxman, a representative from California, describes some of the reasons why proponents of somatic cell nuclear transfer research are supportive of the use of somatic cell nuclear transfer/therapeutic cloning techniques:

> Somatic cell nuclear transfer has two benefits compared to stem cell research on embryos from a fertility clinic. First, the possible outcome of this research is the production of tissues that are genetic match to the patient, reducing the risk of rejection such as that we have often seen with organ recipients. Second, the technique holds great potential for studying genetic and other diseases because scientists could potentially develop cells using nuclei from people who have the disease. This would not generally be possible using embryos donated from fertility clinics because researchers cannot select the genes for such cells (2007-H401-14).

Critics of somatic cell nuclear transfer techniques counter that due to the fact that the first step in human reproductive cloning is somatic cell nuclear transfer (Rhind et al 2003), this technique could ultimately lead to the reproductive cloning of human beings. Furthermore, since critics generally subscribe to the belief that human life begins at the creation of an embryo and somatic cell nuclear transfer involves the creation of a human embryo, critics argue that the technique is unethical because it requires the creation of human life only for it to be destroyed. In the following opening statement on the subject of somatic cell nuclear transfer techniques, Mark Souder, a

former representative from Indiana, sums up the opposition to somatic cell nuclear transfer techniques:

> The research necessarily requires the destruction of living human embryos, and in the case of cloning, the special creation of embryos to be destroyed for their stem cells. The research necessarily requires a large number of eggs, likely leading to the exploitation of women in order to obtain their eggs for research (2007-H401-14).

As the previous information suggests, clear controversy exists on the issue of the cloning and use of human embryos for health purposes. Furthermore, unlike the case of agricultural biotechnology, the lines of debate have the potential to divide individuals from the two different political parties. More specifically, conservative individuals tend to believe that life begins when an egg is fertilized. As such, conservatives are more likely to have ethical misgivings with embryonic matter being utilized for health purposes. On the other hand, since liberals tend to not believe that life begins when an egg is fertilized, they are less likely to have ethical issues with the use of embryonic matter being utilized for health purposes. Since the process of ideological polarization (i.e. the separation of the two parties into two distinct ideological camps) has increased the likelihood that conservatives will primarily be found in the Republican Party and liberals will be found in the Democratic Party (see Theriault 2008 for an example), it is more likely that conservatives and liberals will be found on committee after committee dealing with the issue of the use of human embryos for health purposes. As such, it is

expected that divisions between two different groups on this controversial dimension of the issue will be present on committee after committee.

As stated earlier, when the two political parties become more polarized on an issue, the likelihood that any naturally sympathetic venues to one side or another will be present decreases, as there will likely be two political parties at odds with each other on the issue within each committee venue. In these cases, we should expect that the personal views of those running the hearing should have more of an impact on the information collection and display process than the type of committee venue in which the hearing takes place. Furthermore, since committee chairmen are required to allow the minority ranking member to call at least one witness to testify at a hearing (Sachs 2003, 11; Staff Interviews 2010), even when the committee chairs are liberal, hearings on these issue dimensions will be relatively more negative toward biotechnology than a typical biotechnology hearing because the conservative minority ranking members will be more likely to exercise their privilege to call witnesses that are critical of the use of biotechnology to create and clone human embryos and embryonic stem cells. As such, if the preceding analysis is correct, we should expect the following hypotheses to be confirmed:

Controversial Dimension Member Statement Tone Hypothesis: On the controversial health aspects of the biotechnology issue, individuals with more liberal beliefs will give statements that are more positive toward the biotechnology industry. Individuals with more conservative beliefs will give statements that are more negative toward the biotechnology industry.

Committee Chair Belief Testimony Tone Hypothesis: Committees with chairs that have more conservative beliefs will produce testimony that is more negative toward the biotechnology industry. Committees with chairs that have more liberal beliefs will produce testimony that is more supportive of the biotechnology industry.

Controversial Dimension Testimony Tone Hypothesis: In general, hearings dealing with the controversial health aspects of the biotechnology industry will have a more negative tone toward the biotechnology industry than other aspects of the issue.

As this section has demonstrated, the biotechnology issue area operates very differently depending on the dimension of the issue being analyzed. In the next section, I will detail the ways in which different expectations regarding how congressional hearings politics will be conducted in biotechnology will be tested using empirical data collected from congressional hearing transcripts.

Data and Methods

Case Selection. Cases of congressional hearings concerning biotechnology policy were selected using a two pronged approach. First, hearings were selected by searching through hearings from the "Congressional Hearings Data Set" of the *Policy Agendas* project (http://www.policyagendas.org) in the following subtopic areas: "Agriculture: Research and Development," "Health: Research and Development, " "Science, Space, Technology, and Communications: Research and Development," and "Environment:

Research and Development." I then selected those hearings whose descriptions noted that the whole hearing or a substantial part of the hearing dealt with biotechnology policy. In order to ensure all cases were selected, I then conducted searches using on *Lexis-Nexis Congressional Universe* (http://www.lexisnexis.com) for hearings using the following search terms: biotechnology, genetically enhanced, genetically altered, genetically engineered, genetically modified, genetic engineering, genetic test, cloning, embryonic transfer, genome, gene therapy, recombinant, somatic cell, stem cell, transgenic, biodegradation, bioremediation, and growth hormone. Through this method, I obtained 158 individual cases of hearing documents published that at least substantially concerned the topic of biotechnology policy. Data from these hearings were then aggregated at the committee and subcommittee level for each individual Congress, which condensed the number of cases to 118 cases.

Dependent Variable – Tone of Committee Member Statements. The tone of committee member statements in the specific case of biotechnology was determined as follows. Particular arguments made over the course of a statement were coded as supportive of the biotechnology industry, moderate, or opposed to the biotechnology industry. More specific information on how each statement was assigned can be found in Appendix E. Using PDF XChange Viewer's free PDF editing software[19], notations were made to denote the positive, moderate, and negative suppositions made over the

[19] PDF XChange Viewer allows users to highlight and mark up PDF documents obtained by other sources. This software can prove invaluable to individuals seeking to content analyze documents on a limited budget. This software can be found at the following website: http://www.tracker-software.com/product/pdf-xchange-viewer

course of a statement. Then, the overall statement was coded using the following five-point scale:

- Very negative (-2): Statements made up of mostly or all negative arguments toward the biotechnology industry and very little to no positive or neutral arguments
- Negative (-1): Statements with mostly negative arguments toward the biotechnology industry and a substantial, but not equal portion of positive arguments and statements with a fairly equal balance of negative and neutral arguments
- Neutral (0): Statements made up of nearly all neutral arguments toward the biotechnology industry or statements with a fairly equal balance of negative and positive statements made toward the biotechnology industry
- Positive (1): Statements with mostly positive arguments toward the biotechnology industry and a substantial, but not equal portion of negative arguments and statements with a fairly equal balance of positive and neutral arguments
- Very positive (2): Statements made up of mostly or all positive arguments toward the biotechnology industry and very little to no negative or neutral arguments

Dependent Variable – Tone of Testimony. I analyze the tone of information presented in congressional hearings on the topic of biotechnology policy by analyzing the actual content of hearing testimony itself. Using the same general approach that I used for

opening statements, I assign each individual piece of testimony a score on a five point scale from -2 (very negative toward biotechnology) to 2 (very positive toward biotechnology) to denote the basic tone of each individual piece of testimony. I then take the average of the scores for each piece of testimony given before a particular committee in a particular Congress to measure the overall tone of testimony in that committee for that Congress.

Dependent Variable – Percentage of Testimony Given by Ethical and Safety Experts. In biotechnology hearings, individuals with a wide range of group affiliations and backgrounds are called to testify. In particular, as we will see later, individuals recognized as experts in their respective fields have a made up a large portion of the witnesses called to testify at biotechnology hearings. Of these experts, ethical and safety experts constitute a group that is particularly interesting to analyze. On the one hand, some of the arguments against the use of biotechnology that have gained the most traction amongst the public question the safety and ethical ramifications that could come from using biotechnology in particular contexts. As such, committee members supportive of biotechnology may shy away from calling ethical and safety experts to testify at congressional hearings on the subject of biotechnology in order to avoid calling attention to the potential safety and ethical problems that could result from the utilization of biotechnology tools.

On the other hand, as stated earlier, committee members often seek a certain balance in the types of witnesses they call in order to demonstrate that witnesses from all walks of life support the position they are seeking to espouse (Staff Interviews

2010). As such, much like pro-economic committee chairs still called substantial numbers of climate scientists to testify at hearings on climate change, pro-biotechnology chairs may still decide to call nearly as many ethical and safety experts as anti-biotechnology chairs. Thus, we may not expect any significant differences in the percentage of ethical and safety expert witness testimony between chairs with different beliefs on the biotechnology issue.

In order to study the factors that influence the decisions to select ethical and safety expert witnesses to testify at biotechnology hearings, I measured the information gathered from ethical and safety experts in congressional hearings as follows. First, I coded the number of those testifying at hearings that qualified as an independent ethical or safety expert. Ethical and safety experts include recognized experts in safety or ethical issues representing non-partisan think-tanks, universities, or governmental research institutions, and religious leaders (i.e. priests, rabbis, pastors) who were called to testify for their religious expertise. Those experts clearly representing interest groups espousing a particular cause were not included, because they could be seen more as representing a particular interest than as trying to provide unbiased expert information. I then took the percentage of these experts that testified in front of a particular committee in a given Congress.

Independent Variable – Personal Beliefs. As I will discuss in the next section, I expect that personal beliefs will only have a sizable impact on the witness selection stage of the hearing process on dimensions of the issue where there are clear differences in viewpoints between members of the two parties on the dimension. More specifically,

on dimensions of the issue concerning the use of human embryos and stem cells for health purposes, more conservative individuals should be less likely to be supportive of biotechnology while more liberal individuals will be more supportive of the use of biotechnology in this particular fashion. As such, on this dimension of the issue, as chairs become more conservative and less liberal, the tone of testimony concerning the issue should be less supportive of biotechnology.

On other dimensions of the issue, more conservative individuals may actually be more inclined to support biotechnology due to their reputation for supporting and promoting the use of tools to help grow of the economy while more liberal individuals may be less supportive of biotechnology due to their reputation of being cautious about technologies that have the potential to harm the environment. As such, differences between conservative and liberal committee members in their statements for participating in the hearing may develop. Nonetheless, since these differences are not likely to be strong enough to motivate committee chairs to overcome the barriers that exist to stacking a hearing with a certain type of testimony, it is unlikely that differences in the beliefs of committee chairs will translate into differences in the tone of testimony. In order to measure the ideological preferences of committee and subcommittee members that characterize deep core beliefs, I use Poole and Rosenthal's first-dimension DW-Nominate scores, which are based off of roll call votes taken by the committee members (http://voteview.org). This variable is measured on a continuous scale from -1 to 1 with higher scores indicating a more conservative member ideology.

Independent Variable - Dimensions of Issue. As stated earlier, in the biotechnology issue area, it is expected that dimensions of the issue dealing with the creation and cloning of human embryos and human embryonic stem cells for health purposes will encourage more conflict between the political parties than other dimensions of the issue. When committees and subcommittees deal with this issue dimension, it should have two distinct effects on the tone of information. First of all, in this dimension of the issue, we should expect that differences in the belief systems of committee chairs will be an important determinant of the tone of hearing testimony while on other dimensions of the issue the belief systems of committee chairs will be relatively unimportant. Secondly, since committee chairmen are required to allow the minority ranking member to call at least one witness to testify at a hearing (Sachs 2003, 11; Staff Interviews 2010), even when the committee chairs are liberal, hearings on these issue dimensions will be relatively more negative toward biotechnology than a typical biotechnology hearing because the conservative minority ranking members will be more likely to exercise their privilege to call witnesses that are critical of the use of biotechnology to create and clone human embryos and embryonic stem cells.

I expect that on other dimensions of the issue that the ideology of key committee actors will not be a significant factor in information collection and display decisions in congressional hearings. In addition to the controversial health aspect of the issue that was already mentioned, the remaining hearings on the issue of biotechnology took place in the following three additional categories: other health uses, agricultural uses, and miscellaneous topics. This hearing topic breakdown is slightly modified from the hearing breakdown used in Sheingate's (2006) research on biotechnology hearings.

Instead of keeping health hearings in one category, I have separated the health hearings out into hearings I think will divide the two political parties and hearings where party differences will be relatively muted. The breakdown of hearing topics into categories of hearings is as follows:

- Controversial health: Human cloning, somatic cell nuclear transfer, embryonic tissue research, and stem cell research
- Other health: Transgenic humans, Human Genome research, gene therapy, genetic testing, insurance issues, genetic privacy, and pharmaceuticals
- Agricultural: Micro-organisms, genetically modified plants, genetically modified livestock, genetically modified organism release, and genetically modified food
- Miscellaneous: Industrial biotechnology, marine biotechnology, patenting, economic prospects for biotechnology companies, environmental biotechnology, unspecific biotechnology research, university-biotechnology industry relations, legal and voluntary regulation of general biotechnology

In order to consider the effects detailed above, I create a variable that equals 1 if the committee or subcommittee held at least one hearing dealing with any of the first three topics stated in the previous list. Each of these variables was then interacted with the ideology of the committee chairs/committee members. The category of miscellaneous hearings serves as the baseline for comparison.

Ideological Polarization. As we saw in the last chapter, as time has worn on and Democrats and Republicans became more and more divided on the issue of climate

change, the impetus for the minority ranking member to exert the privilege to call at least one witness to testify on behalf of their position on the issue has become much stronger. Ultimately, this increasing polarization had the effect of causing testimony to become more pro-economic over time. In the case of biotechnology, since the two parties have seen little polarization on most aspects of the issue and since the two parties have remained relatively equally divided throughout time on the contentious aspect of the issue, it is unlikely that polarization will play as key of a role in affecting the tone of testimony in hearings on the policy issue. Nonetheless, since the effect has been found in other issue areas, it is worth including in a model of the biotechnology issue area as well. In order to measure the possibility of this effect, I create a variable taking the absolute value of the difference between the DW-Nominate scores of the two key actors in the witness selection process: the chair and the minority ranking member.

Policy Subsystem Bias. In the case of biotechnology policy, due to the consensual nature of politics within the agricultural subsystem and the historical role of the committee in promoting all agricultural commodities, it is expected that hearings held by agricultural committees in Congress will be significantly more positive toward the use of biotechnology than a typical run of the mill committee. The genetic manipulation of crops provides farmers with a new tool to increase agricultural productivity and ward off pests without the use of pesticides. As such, members of both political parties within the agricultural subsystem are likely to be supportive of biotechnology, due to its importance for farmers in their respective districts, and will likely use congressional hearings on the topic to encourage development of this tool for future use. Additionally,

due to the stated role of the small business committees in Congress in attempting to reduce barriers to small business development in the U.S., I also suspect that committees within the economic promotion subsystem will be more positive toward biotechnology than a typical committee. In order to test the validity of these expectations, I created categories and dummy variables for each of the types of subsystems represented by particular committees in Congress that held hearings on the issue of biotechnology policy relatively often. These categories include the following: agriculture, economic promotion, science, health, judiciary, and environment.

Control Variable – Time. It is expected that some elements of information collection and display in biotechnology policy simply cannot be accounted for by elements of changes in different key characteristics between different committees across different time periods. For instance, as time goes on and congressional committee members learn more about the consequences of using biotechnology as a tool and fears about biotechnology are either allayed or confirmed, we should expect that viewpoints will begin to crystallize regarding the acceptability of biotechnology amongst policymakers who were initially uncertain about the issue. This crystallization of viewpoints will also be expected to affect decisions at all stages of the congressional hearing process. To control for the effects of time on informational collection, I include dummy variables for each decade that congressional hearings took place: (1975-1980; 1981-1990; 1991-

2000; 2001-2006).[20] The 1970's (1975-1980) serve as the reference decade for variables in the model.

Control Variable – Chamber. Of the two chambers of Congress, the House represents smaller constituencies, and thus, may operate in a more parochial manner than the Senate. As such, the House may be a more receptive venue for tools like biotechnology that can be used to assist agricultural interests than the Senate. Furthermore, due to their broader constituency bases, the Senate may show more of a concern toward broader concerns like the potential environmental, health, safety, and ethical effects of biotechnology. In order to control for this potential effect, I created a dummy variable for each of the models, which equal 0 if the hearing takes place in the Senate and 1 if the hearing takes place in the House.

Statistical Model – Pooled OLS. In order to test the expectations laid out above, I conducted a series of pooled OLS regression analyses that grouped data based on the

[20] Although including dummy variables for each of the Congresses can be argued to be more appropriate, doing so uses up a large number of degrees of freedom. With the small number of cases in the committee level models, the loss of degrees of freedom made it impossible for the statistical package to estimate the F statistic, which is necessary to show the significance of the overall model. Furthermore, it is likely that certain characteristics of the chairmen will be nearly perfectly collinear with the particular Congress being controlled for. For instance, since the House and Senate are typically controlled by the same party, it is likely that there are relatively few instances where differences in party control will be observed within Congresses. Additionally, ideological differences within Congresses and between chairs are also likely to be muted due to the high correlation between ideological preferences and party identifications. As Beck, Katz, and Tucker (1998) note, one of the drawbacks of their suggested method of using time dummies for each time period studied is that it cannot account for the effects of variables where there is little to no variation within the time period. As such I use the decade variable approach, as it allows time effects to be captured without using up too many degrees of freedom and allows certain important variables to vary so their effects can be more helpfully studied.

committee or sub-committee a particular hearing was held in for the committee level models and grouped data based on the member presenting statements in the statement model. A pooled OLS regression assumes that any two unit years can be compared whether across committees or across times and its estimator is a weighted average of collapsing groups down to a single, mean time point and differencing each observation within each group from its group mean. I now turn to a discussion of the results of my analyses.

Committee Member Statements – Results

[Figure 6.1 Here]

Committee member statements provide important insights into why particular committee members participate in congressional hearings. Before reporting the results of what determines the tone of these statements, it is important to first analyze how the tone of these statements have changed over time between the two political parties. Figure 6.1 presents a graph of the differences between the average tone of statements made by Democrats and Republicans in biotechnology hearings across time. More positive values indicate higher support of biotechnology tools. As this graph details, at the start of the issue, uncertainty amongst committee members appeared to reign on the issue. From the 94^{th}-98^{th} Congresses, the average tone of hearing statements made by committee members on the issue of biotechnology hovered fairly closely around the

neutral tone area with the average tone of the members of both party's opening statements never rising above 0.5 or below -0.5.

This result is consistent with my expectation that on new and complicated issue areas with no concrete linkages to past issues, committee members may express sincere uncertainty on how to make policy in the issue area. Unlike climate change policy where committee members could use their beliefs about other environmental issues to guide how they would collect and display information on hearings on climate change policy, biotechnology represented a much more multi-faceted issue where committee members did not have a readily apparent belief system to fall back on immediately. As such, members did not appear to have a concrete agenda in participating in biotechnology hearings at the issue's start.

As Figure 6.1 further depicts, after the 99th congressional session, statements made by committee members of both parties began to take on a fairly consistently supportive tone toward the use of biotechnology. This result suggests that committee members became more confident of the safety of biotechnology as they learned more and more about the issue area. Furthermore, throughout most of the history of the issue, Democrats and Republicans were relatively undivided on the issue of biotechnology policy. While Republican committee members were slightly more supportive of biotechnology in their stated reasons for participating in hearings on the policy area through most of the issue's history, the differences between Republican and Democratic committee members were relatively small. Furthermore, during the 102nd, 105th, and 107th-109th Congresses, Democratic committee members were actually more supportive of biotechnology interests than their Republican counterparts.

Interestingly, the only significant division in statements of Democratic and Republican committee members on the issue of biotechnology occurred during the 107th Congress when Democratic committee members were fairly solidly supportive in the tone of their statements toward biotechnology while Republican members were actually slightly negative in the tone of their statements. Although not depicted on the chart, the 107th Congress also represents a congressional session when attention was focused on the controversial dimensions of the issue. During the 107th Congress, 67% of the hearings on the subject of biotechnology dealt with the issue of the creation or cloning of human embryos or embryonic stem cells. By contrast, during the preceding 106th Congress, only 8% of the hearings dealt with this controversial dimension of the issue. As such, this lends credence to the argument that the controversial dimension of the issue represents a dimension where a gulf between Republican and Democratic committee members in their positions is apparent. As such, we should expect that hearing politics in this dimension of the issue should operate in much the same way that politics operated in the issue of climate change where viewpoints between the two parties were also divisive. On the other aspects of the issue, however, there is no evidence to suggest that hearing politics will operate in a fashion consistent with other partisan issues.

[Table 6.1 Here]

Turning now to a more systematic analysis of opening statements across time, Table 6.1 presents the results of the pooled ordinal probit model testing the

determinants of the tone of opening statements. Model I presents analysis without the interactive effect between topic areas and the ideology of committee chairs while Model II presents analysis with the effect. The models are separated to demonstrate the effect of ideology on the overall issue of biotechnology and its effect when separating out the controversial and non-controversial issue dimensions. As the models demonstrate, the model with the interactive effect performs much better than the model without the effect. While the model without the interactive effect has a Wald Chi^2 of 55.62 that is significant at all levels of statistical significance, the pseudo R-squared of 0.0377 is very low even by pseudo R-squared standards. On the other hand, the model with the interactive effects perform moderately well, as the pseudo R-squared of 0.1161 is moderate in terms of pseudo R-squared standards and the Wald Chi^2 of 165.39 is significant at all levels of statistical significance.

Using Model II, in terms of the control variables in the analysis, the statements from members of the House were significantly different in tone from statements made by members of the Senate. However, interestingly and contrary to expectations, senators were more likely to give statements that were favorable toward the biotechnology industry than they were to give statements that were less favorable toward the biotechnology industry. The decade in which the hearing took place also has significant effects on the tone of committee member statements on the issue of biotechnology. Statements made during the 1980's, 1990's, and 2000's were all more likely to be more positive toward biotechnology than statements given during the beginnings of the issue in the 1970's. This result is likely suggestive of the fact that the biotechnology was very new and policymakers were not certain how to deal with the issue. Thus, committee

members came to hearings during the 1970's with a more neutral stance toward the issue than in future decades when policymakers became more comfortable with the safety of biotechnology.

As expected, the type of committee venue in which the hearing took place had a statistically significant effect on the tone of committee member statements at hearings in two different types of venues. Members of both the agricultural committees and the economic promotion committees in Congress were more likely to give statements that were more positive toward the biotechnology industry than members of the baseline case of miscellaneous committees. This result is expected since both agricultural committee members and members of economic promotion committees have a reputation for being united in their positions on issues like biotechnology that directly impact the farming community and the business communities respectively.

With respect to the effect of belief systems of committee members on the tone of their statements in congressional hearings concerning biotechnology, as Model I demonstrates, the ideology of committee members does not have any significant effect on the tone of statements on the biotechnology issue as a whole. However, as Model II depicts, after separating the issue into the four dimensions described earlier, the ideology of members becomes a significant indicator of the tone of member statements in two out of the four dimensions of the issue. First of all, as expected, when committees deal with dimensions of the issue concerning the creation or cloning of embryos and embryonic stem cells, the ideologies of committee members become a significant determinant of the tone of their statements. More specifically, when the subject matter of the hearing dealt with the creation or cloning of embryos and

embryonic stem cells, more conservative committee members were significantly more likely to give statements that were less favorable toward the biotechnology industry than their more liberal counterparts. This result is not surprising in light of the similarities between this dimension of the issue and the very partisan issue of abortion where individuals' positions and governmental policymakers' actions are also heavily influenced by their personal belief systems.

Perhaps more surprisingly, the personal ideologies of committee members were also a significant determinant of the tone of their statements on biotechnology policy when the hearing dealt with the miscellaneous category of biotechnology issues. More specifically, when the subject matter of a hearing dealt with the miscellaneous category of biotechnology issues, more conservative members were significantly more likely to give statements that were more positive toward the biotechnology industry than their more liberal counterparts. Although this result was not necessarily expected, it is an intuitive result in light of the fact that this category of hearings dealt in large part with economic development and regulatory issues. Since more conservative individuals are seen as more supportive of the business community than their liberal counterparts and since conservatives would not have the ethical reservations with supporting biotechnology in this dimension of the issue that they may have in the more controversial aspects of the issue, it makes sense that more conservative committee members would be more supportive of the biotechnology industry during hearings on the miscellaneous dimension of the issue. However, as we saw in the case of tobacco policy, conservative members' tendencies to oppose regulation of industries when individually participating in congressional hearings were not strong enough to translate

into biased information collection strategies at the witness selection stage of the hearing process. It will be interesting to see if the same process holds true in the case of biotechnology hearings. Nonetheless, it is clear from these results that the ideology of committee members is not a significant determinant of the tone of hearing testimony in the other dimensions of the biotechnology issue that did not have a sizable partisan component.

In terms of the independent effect of the dimension studied by a particular hearing on the tone of member statements concerning biotechnology policy, statements made in all other dimensions of the issue tended to be significantly more negative toward the biotechnology industry than statements made during hearings on the miscellaneous aspects of the issue. This result is not surprising in the case of the health dimensions of the issue, as Sheingate (2006) discovered that U.S. policy has been more restrictive of the biotechnology industry when dealing with the health aspects of the issue. However, despite the U.S. federal government's history of promoting the agricultural biotechnology industry, committee members' statements during hearings on agricultural biotechnology policy tended to be significantly more negative in tone toward the biotechnology industry than statements made during hearings on the miscellaneous dimension of the issue.

When interpreted another way, these results also mean that committee member statements made in hearings dealing with the miscellaneous dimension of the issue were significantly more positive in tone toward the biotechnology industry than statements made in all other hearings on the topic of biotechnology. Since the miscellaneous category of hearings includes a wide variety of subjects where the economic benefits of

biotechnology are likely to be emphasized and the remaining topic areas contain a series of risks that could be brought up in hearings, these results actually make more intuitive sense than one would first anticipate. I now turn to an analysis of the determinants of the overall tone of congressional hearing testimony to determine whether the same dynamics that drive the tone of member statements also drive the tone of overall testimony presented in congressional hearings.

Overall Tone of Testimony – Results

[Figure 6.2 Here]

Figure 6.2 presents a graph depicting the evolution of the tone of testimony on biotechnology over time. As the figure demonstrates, at the start of the issue's development information concerning biotechnology was relatively balanced between those opposed to biotechnology and those supportive of biotechnology. This result is interesting in that it is suggestive of the possibility that congressional policymakers were genuinely confused on what to do on the issue. During the 94th and 95th Congresses, the issue was very new and policymakers had not formed any opinions on the safety of this new technology. As such, it appears that they called a wide variety of witnesses with a wide range of perspectives on the biotechnology issue.

As the issue progressed and congressional policymakers likely became more assured of the safety of biotechnology, regardless of which political party controlled Congress, information presented in congressional hearings on the issue of

biotechnology became generally supportive of the use of biotechnology. Interestingly, the 107th Congress represents a significant break in the generally supportive tone of testimony toward biotechnology. As stated earlier, although not depicted on the chart, the 107th Congress also represents a congressional session when attention was focused on the controversial dimensions of the issue. As such, it is not surprising that this Congress produced testimony that was comparatively negative in bent.

[Table 6.2 Here]

Turning now to a more systematic analysis of the testimony of witnesses on the subject of biotechnology across time, Table 6.2 presents the results of pooled OLS regression models testing the determinants of the tone of testimony. Model I presents analysis without the interactive effect between controversial topic areas and the ideology of committee chairs while Model II presents analysis with the effect. The models are separated to demonstrate the effect of ideology on the overall issue of biotechnology and its effect when separating out the controversial and non-controversial issue dimensions. As the models demonstrate, the model with the interactive effect performs much better than the model without the effect, as the model with the interactive effect explains around 44% of the variation in the dependent variable while the model without the effect only explains around 26% of the variation.

Using Model II, in terms of the control variables in the analysis, it appears that the institutional chamber holding the hearings had negligible effects on the tone of hearing testimony. The House and Senate did not produce significantly different

testimony in tone in either of the models. However, the decade in which the hearing took place does have significant effects on the tone of hearing testimony. The 1980's, 1990's, and 2000's produced significantly more positive testimony toward biotechnology than the 1970's. As stated earlier, this result is likely suggestive of the fact that the biotechnology was very new and policymakers were not certain how to deal with the issue. Thus, the testimony was more balanced and more negative than in future decades when policymakers became more comfortable with the safety of biotechnology.

More importantly for this paper, as expected, even when controlling for the fact that the agricultural dimension of the issue may inspire more positivity toward biotechnology than other aspects of the issue, the agricultural committees collect and display information that is significantly more positive in tone toward biotechnology than a typical run of the mill venue. More specifically, the tone of testimony presented in front of agricultural committees was an expected 0.909 units more positive toward biotechnology than testimony presented in front of the baseline category of miscellaneous committees. When considered in combination with the results of tobacco policy, it is clear that agricultural committees choose information with a mind toward demonstrating that policies supportive of farming interests are justified.

Economic promotion committees also collect information that is more positive in tone toward the biotechnology industry than a typical run of the mill committee. The tone of testimony presented in front of economic promotion committees was an expected 0.860 units more positive toward biotechnology than testimony presented in front of the baseline category of miscellaneous committees. This result is intuitive in light of the fact that the economic promotion subsystem contains committees that are

very supportive of the small business community and that many biotechnology companies are small businesses.

Interestingly, despite their role as promoters of scientific research, the science committees in Congress do not select witnesses that give testimony that is significantly more positive toward the biotechnology industry than a typical run of the mill committee. This result can likely be attributed to the fact that, unlike the agricultural and economic promotion committees, the scientific committees held a significant portion of hearings during the early stages of the issue when beliefs had not yet developed concerning the appropriate policy positions to take. As stated earlier, during the early stages of the issue, testimony presented in congressional hearings concerning biotechnology was relatively balanced between those opposed to biotechnology and those supportive of biotechnology, which suggests that congressional committees like the science committees used the hearing process to genuinely collect information to help inform their policy decisions. As such, conducting hearings during the early stages of the issue may have prevented the science committees from acting like a unified subsystem on the biotechnology issue. Furthermore, unlike the agricultural and economic promotion committees, science committees did have to address the more controversial dimensions of the biotechnology issue (i.e. human cloning and embryonic stem cell research) on several occasions when conducting hearings on the topic. As will be discussed later, due to the more divisive and controversial nature of politics concerning human cloning and embryonic stem cell research, hearings concerning these issues tended to take on a more negative tone than other hearings on the topic of biotechnology. As such, the fact that scientific committees had to deal with these

controversial dimensions of the issue may also account for the less positive tone of testimony in front of the committees when compared to agricultural and economic promotion committees.

With respect to the effect of belief systems of key policymakers on the tone of information in congressional hearings, as Model I demonstrates, the ideology of committee members does not have any significant effect on the tone of information on biotechnology. However, as Model II depicts, when committees deal with dimensions of the issue concerning the creation or cloning of embryos and embryonic stem cells, the ideologies of committee chairs become a significant determinant of the tone of hearing testimony. More specifically, when committees deal with the more controversial dimension of the biotechnology issue, a one unit increase in the conservatism of committee chairs is related to an expected decrease of 1.295 units in the tone of support for biotechnology interests in hearing testimony. On the other hand, the ideology of committee chairmen in all other dimensions of the biotechnology issue is not a significant determinant of the tone of hearing testimony. Thus, it is clear that in multi-dimensional issue areas like biotechnology, it is important to consider what dimension of the issue is being examined by a committee, as it appears to be a key determinant as to whether committee chairmen will use the hearing process to collect and display information consistent with their belief systems or not.

In addition to strengthening the importance of belief systems of committee chairs on the tone of testimony, the controversial issue dimension in biotechnology policy also has an independent effect in increasing the negativity of the tone of hearing testimony toward biotechnology. More specifically, testimony in front of committees

that dealt with the more controversial dimension of the biotechnology issue was an expected 0.889 units more negative toward biotechnology than the baseline case of miscellaneous biotechnology hearings. As stated earlier, this result is likely suggestive of the fact that , committee chairmen are required to allow the minority ranking member to call at least one witness to testify at a hearing (Sachs 2003, 11; Staff Interviews 2010). Thus, even when the committee chairs are liberal, hearings on the more controversial issue dimension of biotechnology will be relatively more negative toward biotechnology than a typical biotechnology hearing because the conservative minority ranking member will be more likely to exercise their privilege to call witnesses that are critical of the use of biotechnology to create and clone human embryos and embryonic stem cells. Hearings concerning all other dimensions of the issue produced testimony that was not significantly different from the baseline case of hearings concerning miscellaneous biotechnology topics.

Types of Witnesses - Results

[Figure 6.3 Here]

Figure 6.3 contains a graph depicting the evolution in the broad categories of witnesses that have testified during hearings concerning biotechnology. As Figure 6.3 demonstrates, congressional committees and subcommittees have called mostly experts, representatives of private interests, and members of federal bureaucratic agencies to testify before them at congressional hearings. In contrast to tobacco hearings but similar to hearings on climate change policy, experts make up a sizable percentage of witnesses

in congressional hearings on biotechnology policy. The percentage of experts testifying at hearings on biotechnology policy never fell below 25% of the individuals testifying at hearing and even reached as high as 62% of the witnesses during the 95th Congress. This result is not surprising considering the technical nature of the issue of biotechnology policy. In such a technical issue, committee members will want to collect information from experts to try to come to an informed decision on the issue or to simply add credibility to their own predisposed policy positions.

As Figure 6.3 further depicts, in the early stages of the biotechnology issue area (the 94th-98th Congresses), experts made up the largest category of witnesses during the vast majority of congressional sessions. In the early stages of the issue, experts only did not make up the largest category of witnesses during the 96th Congress. However, after the 98th Congress, experts were only the largest category of witnesses during the 105th Congress. Nonetheless, even in the 105th Congress, the percentage of experts present at hearings on the topic of biotechnology never again reached their heights at the early stages of the issue. After the 98th Congress, witnesses representing private interests (i.e. interest groups, companies, private citizens, etc.) routinely made up the largest category of witnesses at hearing on biotechnology policy.

Once again, these results are consistent with the expectation that hearings are most likely to be used for genuine information collection at their earliest stages. Remember that in the same time period where experts made up the predominant witness category, committee member statements and witness testimony tended to be more neutral in tone than at later stages of the issue. Congressional committee and subcommittee chairs likely came into hearings at the early stages of the issue with an

open mind as to whether biotechnology could have a positive or harmful effect on society. As such, they decided to call witnesses with strong credentials because they felt the information provided by these witnesses would be very credible and could be used to make rational policy decisions on a highly technical policy issue like biotechnology. Once members' perceptions of biotechnology became more concrete and the biotechnology industry began to take hold in the U.S., representatives of private interests began to be the predominant category of witnesses testifying on the topic of biotechnology at congressional hearings. The preponderance of representatives of private interests in biotechnology hearings is consistent with the conception that hearings are at least partially utilized to give private interests a public platform to express their viewpoints. Nonetheless, as stated earlier, interestingly, experts still made up a significant percentage of witnesses at hearings on biotechnology policy. This result suggests that hearings in biotechnology policy, even in the later stages of the issue, were not solely utilized as a platform for private interests to express their views on the issue. Rather, hearings also served as a platform for expert information to be disseminated to congressional policymakers and the public, likely in order to justify the viewpoints of committee leaders that select witnesses to testify at hearings.

[Table 6.3 Here]

As stated earlier, of the expert groups that testified during hearings concerning biotechnology policy, ethical and safety experts constitute a group that is particularly interesting to analyze, due to the likelihood of these experts to bring up the risks

involved with the use of biotechnology. Do more conservative individuals, who we already know are more likely to call witnesses that give testimony that is more negative in tone during hearings on the controversial aspects of the biotechnology issue, also call disproportionate amounts of witnesses that are likely to bring up the risks involved with the use of biotechnology as well? Table 6.3 presents the results of the pooled OLS regression model testing the determinants of the percentage of testimony given by ethical and safety experts.

Overall, the model performs respectably as it can explain about 22% of the variance in the dependent variable and the F-statistic is significant at all standard levels of statistical significance. In terms of the control variables in that analysis, first of all, there are no significant differences between the different chambers of Congress in terms of the percentage of ethical and safety experts called to testify in congressional hearings on the topic of biotechnology policy. Furthermore, while hearings in the 1990's and 2000's contained a significantly smaller percentage of ethical and safety experts when compared to the 1970's, the 2000's were not significantly different from the 1970's in this respect.

Turning now to the key variables of importance in the analysis, as expected, the dimension of the biotechnology issue being addressed by a particular hearing has a distinct effect on the types of groups that testify at a hearing. In the particular case of ethical and safety experts, committees and subcommittees that dealt with the health dimensions of the biotechnology issue (both controversial and uncontroversial) called significantly more ethical and safety experts to testify than the baseline case of committees dealing with miscellaneous dimensions of the issue. The effect is more

pronounced in the case of controversial hearings. More specifically, committees dealing with the more controversial dimension of the issue concerning the creation or cloning of embryos and embryonic stem cells call around a predicted 12% greater percentage of ethical and safety experts at hearings than the baseline case of committees dealing with miscellaneous dimensions of the issue. By contrast, committees and subcommittees that deal with the less controversial health dimensions of the issue call around a predicted 6% greater percentage of ethical and safety experts at hearings than the baseline case of committees dealing with miscellaneous dimensions of the issue. These results are logical in light of the fact that much of the ethical and safety concerns regarding the issue are likely to come up more when dealing with health issues than with other dimensions of the issue. In particular, the most controversial dimension of the issue concerning the creation or cloning of embryos and embryonic stem cells is likely to attract ethical and safety experts due to the significant ethical controversies that are clearly apparent in that particular dimension of the issue.

Nonetheless, while the dimension of the issue being addressed by a hearing has a definitive effect on the types of witnesses testifying at a congressional hearing, the belief systems of the most important actors in witness selection activities, committee and subcommittee chairs, have no significant impact on the percentage of testimony given by ethical and safety experts at hearings on the topic of biotechnology policy. Even when the biotechnology issue is split into the several different dimensions that make up the issue, the belief systems of committee and subcommittee chairs have no significant impact on the percentage of testimony given by ethical and safety experts in any of the dimensions of the issue. This comports well with evidence from committee

staff interviews that committee chairmen often seek a certain balance in the types of witnesses they call in order to demonstrate that witnesses from all walks of life support the position they are seeking to espouse (Staff Interviews 2010). Even though ethical and safety experts are likely to discuss the risks involved with biotechnology techniques, pro-biotechnology chairs still call these experts to testify just as much as anti-biotechnology chairs in order to give the entire hearing process and the information presented in the hearing more credibility.

Finally, unlike what was the case for the tone of member statements and the tone of witness testimony on the issue of biotechnology, venue characteristics are not a significant indicator of differences in the percentage of testimony given by ethical and safety experts at hearings on the topic of biotechnology policy. None of the committee types included in the model produced significantly different percentages of testimony given by ethical and safety experts than a typical run of the mill committee. I now turn to the conclusion to discuss the significance of the results.

Conclusion

The issue of biotechnology was chosen, because it encapsulates all of the different ways that hearing politics can operate in a single issue. On the one hand, during the early stages of the issue, committee members clearly did not know exactly what types of policies should be passed concerning the use of biotechnology. As such, committee members apparently used the hearing process to call large amounts of experts and did not clearly stack the hearings to display information that was stacked in one way or another. However, as the issue matured and committee members began to

understand both the risks and rewards of biotechnology tools, different dimensions of the issue began to develop that operated in very different ways.

With respect to the agricultural dimension of the issue, the agricultural committee, in particular, clearly selects witnesses with the purpose of advancing the interests of farmers. Agricultural committee members consistently called witnesses who thought biotechnology could lead to greater crop productivity. The result, as Sheingate (2006) has uncovered, has been that agricultural biotechnology has been largely accepted by the public and has remained relatively deregulated by the government. When considered in tandem with the results found in tobacco policy, it becomes clear that agricultural committees are particularly likely to hear from individuals who are supportive of agricultural programs. The agricultural committees clearly represent the archetypal example of the truly unified subsystem in politics. Whether polarization has made within subsystem politics more conflictual or whether the increasing breakdown of jurisdictional clarity in congressional institutions has prevented particular committees from becoming attached to certain conceptions of policy issues (Baumgartner, Jones, and MacLeod 2000), very few committee venues exhibit the informational collection and display biases across different issues that the agricultural venues in Congress do.

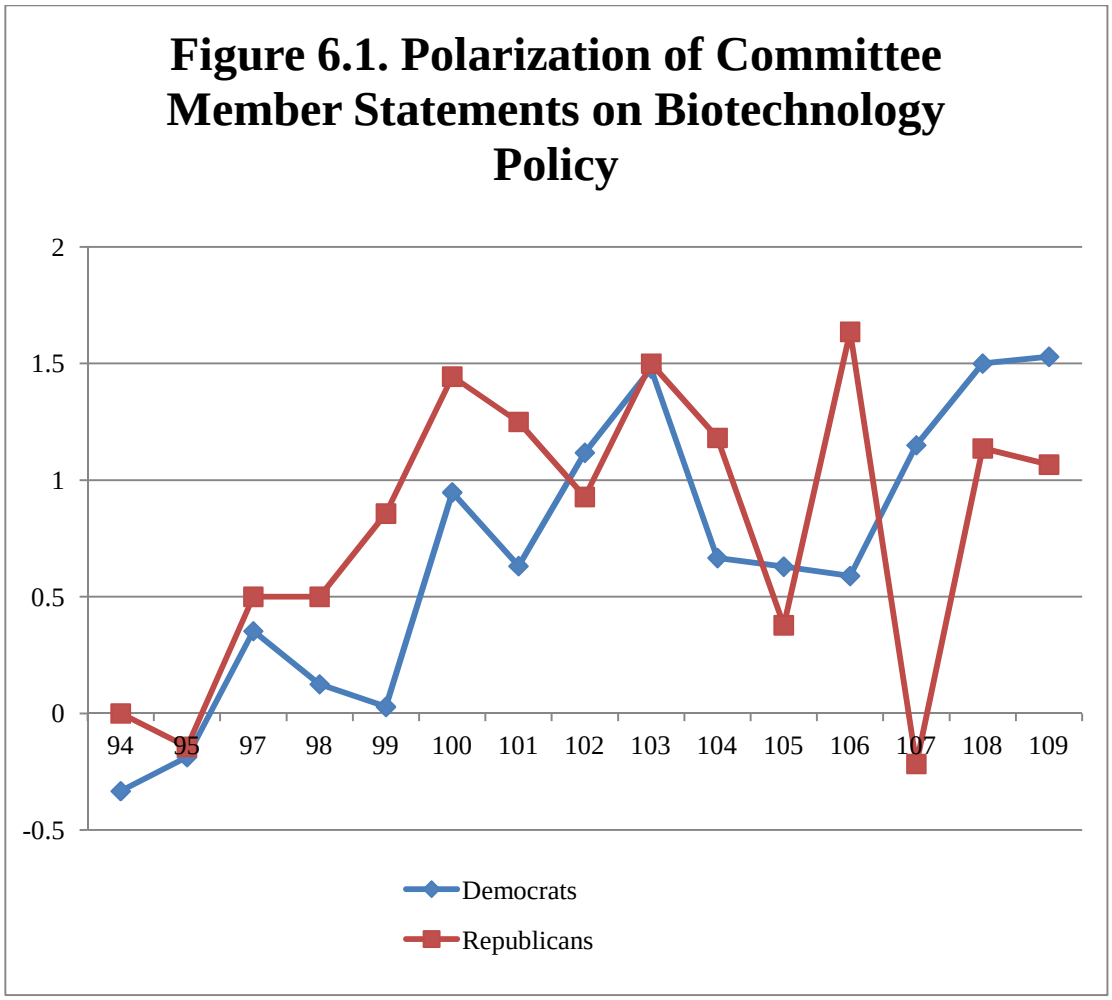
With respect to the dimension of the issue dealing with the economic/business elements of biotechnology (i.e. patents, federal promotion of the industry, etc.), committees within the economic promotion subsystem also showed the propensity to act like a unified subsystem on the issue of biotechnology. Members of the two small business committees in the House and Senate and the Joint Economic Committee were significantly more positive toward the biotechnology industry in their statements during

hearings on the issue. Furthermore, and perhaps more importantly, committees within the economic promotion subsystem also called witnesses that presented testimony that was more positive in tone than a typical run of the mill committee. These results demonstrate that economic promotion committees, particularly the Small Business committees, have the propensity to act in protection of small businesses like many biotechnology firms. As such, the economic promotion subsystem may be a burgeoning unified subsystem; particularly on issues like the economic dimensions of the biotechnology issue that are likely to unite members of the committees that make up the subsystem.

In contrast to the agricultural and economic dimensions of the issue, the more conflictual dimension of the issue dealing with the creation or cloning of embryos and embryonic stem cells for health purposes has lead to differences of opinions and testimony tone depending on who was controlling the committee. More conservative individuals have generally wanted more government regulation of biotechnology in this issue while more liberal individuals have wanted the government to provide more resources to those attempting to engage in creating or cloning embryos or embryonic stem cells for health purposes. This result in large part stems from the fact that the underpinnings of this dimension of the issue are rooted in the very partisan issue of abortion. In many ways, this dimension of the issue is even more partisan and ideologically driven than climate change policy. As such, the likelihood that two groups antagonistic toward each other would be represented on committee after committee became more likely. Thus, no naturally hospitable venue to any conception of policy issues have been present in this dimension of the issue and the real changes in

informational tone have occurred when changes in the belief systems of those with control over congressional committees take place.

The biotechnology issue demonstrates that not only must researchers consider the characteristics of the issue being addressed when analyzing how hearing politics will operate, they must also understand that different dimensions of the same issue may operate very differently as well. Furthermore, hearing politics in one issue may even operate very differently depending on how mature the issue is, and thus, how confident committee members are in their beliefs and policy positions concerning the issue. In the next chapter, I will conclude this project by discussing some of the general lessons about hearing politics that can be taken from the preceding analyses.



Note: There is a gap in this chart between the 95th and 97th Congresses, because there was no data available for Republicans in the 96th Congress.

TABLE 6.1. Pooled Ordered Probit Regression Results Testing the Determinants of Tone of Committee Member Statements on Biotechnology Issue.

Independent Variable	Model I		Model II	
	Coefficient	Robust Standard Error	Coefficient	Robust Standard Error
Ideology	-0.148	0.160	1.013**	0.295
Controversial Health Topic	---	---	-0.702**	0.188
Ideology*Controversial	---	---	-2.895**	0.401
Agricultural Topic	---	---	-0.330*	0.179
Ideology*Ag Topic	---	---	0.068	0.387
Other Health Topic	---	---	-0.441**	0.140
Ideology*Other Health	---	---	-0.361	0.334
Agricultural Committee	0.604*	0.249	0.527*	0.264
Science Committee	0.314	0.227	0.218	0.200
Health Committee	0.020	0.215	0.056	0.208
Judiciary Committee	0.159	0.256	0.068	0.223
Environmental Committee	-0.097	0.219	0.136	0.234
Economic Committee	1.837**	0.567	1.710**	0.544
Chamber	-0.249	0.162	-0.274*	0.159
1980's	0.499*	0.212	0.693*	0.233
1990's	0.821**	0.197	1.135**	0.233
2000's	0.738*	0.253	1.150**	0.271
Cut 1	-0.606	0.279	-0.947	0.278
Cut 2	-0.194	0.282	-0.467	0.275
Cut 3	0.424	0.277	0.238	0.273
Cut 4	0.840	0.280	0.713	0.276
N	649		649	
Pseudo R^2	0.0377		0.1161	
Wald Chi^2	55.62**		165.39**	

Note: *p =< .05 **p<= .001*(one-tailed).*

Robust Standard Errors in Parentheses

Dependent variable: Tone of statements given by committee members in congressional hearings on the topic of biotechnology

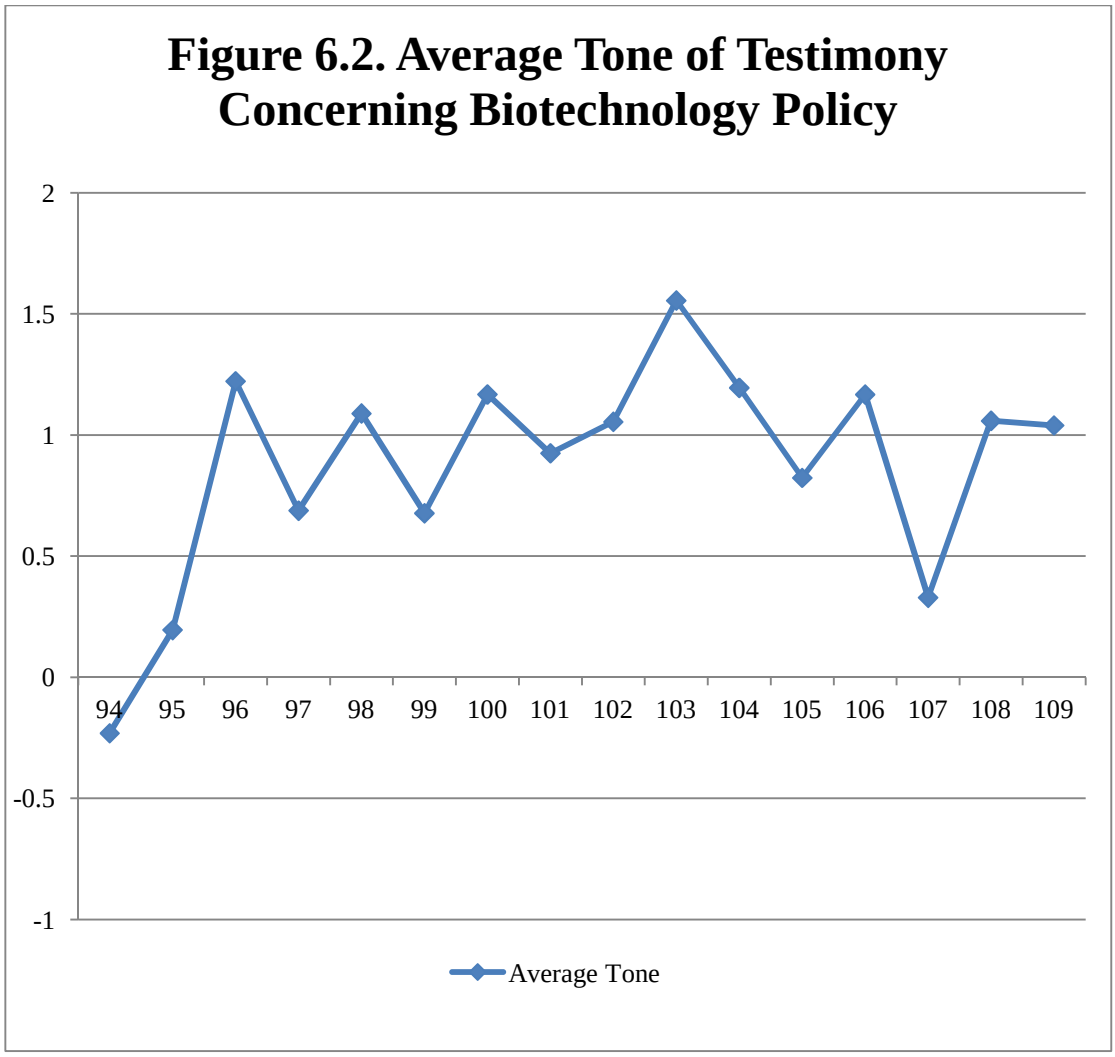


Figure 6.2. Average Tone of Testimony Concerning Biotechnology Policy
2
1.5
1
0.5
0
-0.5
-1
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
Average Tone

TABLE 6.2. Pooled OLS Regression Results Testing the Determinants of the Overall Tone of Testimony in Biotechnology Hearings.

Independent Variable	**Model I**		**Model II**	
	Coefficient	Robust Standard Error	Coefficient	Robust Standard Error
Constant	-0.066	0.292	0.019	0.329
Chair Ideology	0.021	0.273	0.223	0.370
Controversial Health Topic	---	---	-0.889**	0.248
Ideology*Controversial	---	---	-1.295**	0.354
Agricultural Topic	---	---	-0.270	0.222
Ideology*Ag Topic	---	---	0.277	0.448
Other Health Topic	---	---	-0.246	0.181
Ideology*Other Health	---	---	-0.097	0.457
Ideological Polarization	0.089	0.383	-0.122	0.297
Agricultural Committee	0.958*	0.330	0.909**	0.266
Science Committee	0.410	0.368	0.353	0.261
Health Committee	0.091	0.316	0.298	0.287
Judiciary Committee	-0.208	0.372	-0.172	0.257
Environmental Committee	0.120	0.172	0.160	0.227
Economic Committee	1.106*	0.352	0.860*	0.288
Chamber	-0.029	0.149	-0.077	0.122
1980's	0.681*	0.235	1.057**	0.306
1990's	0.932**	0.186	1.293**	0.263
2000's	0.497*	0.296	1.196**	0.346
N	118		118	
Adjusted R^2	0.260		0.439	
F Statistic	31.98**		25.58**	

Note: *p =< .05 **p<= .001*(one-tailed).*

Robust Standard Errors in Parentheses

Dependent variable: Average tone of testimony within a committee in a particular Congress

Figure 6.3. Types of Group Affiliations of Witnesses Testifying at Congressional Hearings on Biotechnology Policy

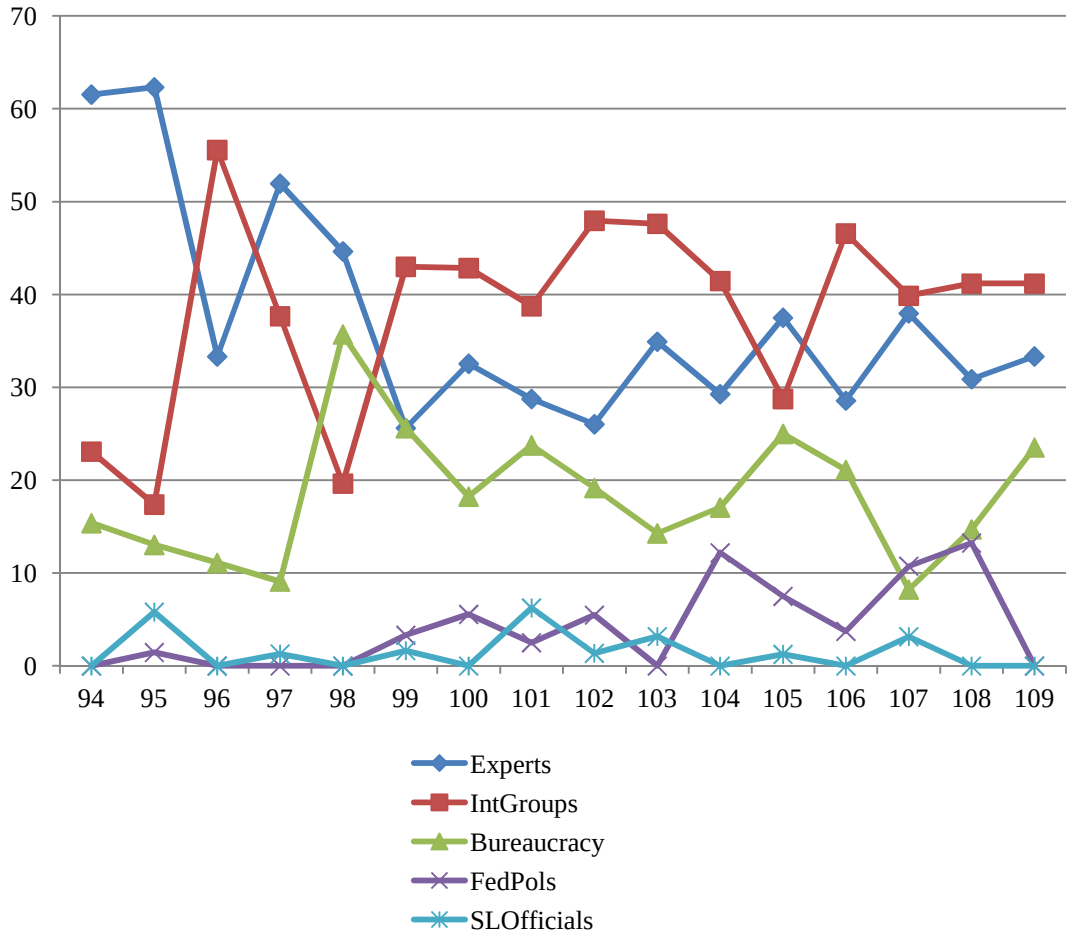


TABLE 6.3. Pooled OLS Regression Results Testing the Determinants of the Percentage of Testimony Given By Ethical and Safety Experts

Independent Variable	Coefficient	Robust Standard Error	t score
Constant	0.090*	0.046	1.93
Chair Ideology	-0.010	0.038	-0.25
Controversial Health Topic	0.117*	0.040	2.91
Ideology*Controversial	0.082	0.074	1.12
Agricultural Topic	-0.012	0.023	-0.54
Ideology*Ag Topic	0.007	0.040	0.16
Other Health Topic	0.058*	0.032	1.78
Ideology*Other Health	0.082	0.089	0.92
Ideological Polarization	0.051	0.041	1.25
Agricultural Committee	-0.036	0.025	-1.44
Science Committee	-0.020	0.035	-0.57
Health Committee	-0.022	0.050	-0.43
Judiciary Committee	0.055	0.050	1.10
Environmental Committee	-0.017	0.028	-0.62
Economic Committee	0.002	0.034	0.07
Chamber	0.016	0.019	0.87
1980's	-0.082*	0.043	-1.91
1990's	-0.106*	0.049	-2.14
2000's	-0.096	0.058	-1.64
N	118		
Adjusted R^2	0.220		
F Statistic	18.29**		

Note: *p =< .05 **p<= .001*(one-tailed).*

Robust Standard Errors in Parentheses

Dependent variable: Percentage of Testimony Given by Ethical and Safety Experts

Chapter 7. Conclusion: Lessons about the Politics of Information Collection and Display in Congressional Hearings

Introduction

As past research has demonstrated, policy information clearly plays a very important role in the policymaking process. Quality policy information has the ability to inform policymakers on the potential effects of policy proposals, so that they can make the best possible decisions on what policy proposals to pursue (Fenno 1974; Krehbiel 1991). As such, the quest for such quality policy information has been argued to guide the organization of Congress into congressional committees, so that policy experts can inform the floor about the potential effects of policy proposals (Krehbiel 1991; Jones 1994, 151). Past research suggests that policy information can also have an important impact on policy decisions. For instance, changes in the tone of policy information presented in congressional hearings can produce policy changes in the form of changes in law and changes in federal appropriations for programs when the preponderance of the information presented about an issue shifts in valence in the opposite direction from the direction of information presented in the past (i.e. from negative to positive) (Baumgartner and Jones 1991, 1993; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Jones and Baumgartner 2005; Workman, Jones, and Jochim 2009). Furthermore, under certain circumstances, policymakers can change their beliefs when presented with a piece of information that conflicts with their views on an issue (Sabatier and Jenkins-Smith 1993; Sabatier and Weible 2007).

With all of the clear impacts that policy information can have on substantive policy decisions, having control over the way information is collected and displayed to other policymakers and the public can be a very important power to possess. Within

Congress, the primary power to collect and display information belongs to the congressional committees and subcommittees that conduct congressional hearings on policy issues. Through congressional hearings, congressional committees and subcommittees can call almost anyone they choose to testify before them and extract information out of these witnesses that is relevant to the policymaking process. Furthermore, since most congressional hearings are open affairs that can be viewed by the public and other policymakers via C-SPAN cable outlets (Palmer 2007; Hallowell 2008) and since congressional hearings make up a large portion of the media coverage of Congress (Gandy 1982), information presented in congressional hearings has the potential to be displayed to a wide variety of interested individuals.

However, while congressional hearings clearly have the potential to serve as an important tool for congressional policymakers to collect and display information, a degree of controversy exists amongst scholars concerning how the process is utilized in practice by congressional committees. While some scholars argue that congressional committees and subcommittees will use the congressional hearing process to collect expert information and/or provide a balance of perspectives in order to ensure that the best possible information to make policy decisions is available to congressional lawmakers (Gilligan and Krehbiel 1987, 1989, 1990; Krehbiel 1991; Diermeier and Feddersen 2000), others argue that congressional committees instead use the hearing process to stack hearing testimony to over-represent witnesses that share the viewpoints of important committee members (Truman 1951; Berry 1984; Davidson and Oleszek 1985). Furthermore, even amongst the community of scholars that argue that congressional committees are biased in the way they collect and display information in

congressional hearings, scholars are divided on what factors and biases drive how committees select information to collect and display in congressional hearings. On the one hand, some scholars argue that certain types of subsystem venues (i.e. congressional committees and subcommittees) will be biased in the way that their members collect and display information in congressional hearings due to the consensual politics and united understanding of an issue that operates amongst members of these subsystems (Baumgartner and Jones 1991, 1993; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Jones and Baumgartner 2005; Workman, Jones, and Jochim 2009). On the other hand, other scholars argue that those who control the witness selection process in congressional hearings (i.e. committee chairs) will be biased by their own beliefs and other personal characteristics when deciding how policy information will be collected and displayed in congressional hearings (Sabatier and Jenkins-Smith 1993, 1999; Sabatier and Weible 2007).

As with most debates over trying to explain activities that occur in the political realm, the findings in this project have demonstrated that each of the preceding arguments concerning hearing politics have a degree of validity. Rather than attempting to understand which of the theoretical explanations of the congressional hearing process has the "most" explanatory value, the key to truly understanding what factors drive information collection and display decisions in congressional hearings is to determine the conditions under which different explanations have more explanatory value vis-à-vis other theoretical perspectives. As the findings in the previous chapters demonstrate, hearing politics operate very differently depending on the characteristics of the issue dimension being examined, the stage in the development of the issue, and the type of

subsystem in which the hearing takes place. In this chapter, I will describe the key findings of this project with respect to how congressional hearing politics operate under different policy and subsystem contexts.

Key Findings about Information Collection and Display in Congressional Hearings

Stacking of Congressional Hearing Testimony. According to proponents of the conventional wisdom concerning congressional hearing politics, hearings serve no greater purpose than a "window-dressing" event or "propaganda channel" through which congressional committees and subcommittees can display carefully selected information to actors outside the committee (i.e. members on the floor, interest groups, the general public, etc.) in order to drum up support for positions espoused by committee members and/or "claim credit" for providing policy benefits to constituents (Truman 1951; Berry 1984; Davidson and Oleszek 1985). As was discussed in Chapter 1, the idea that congressional hearings are no more than "propaganda channels" or "dog-and-pony shows" is flawed due to the time, energy, and resources devoted to conducting congressional hearings in Congress. However, the idea derived from the conventional wisdom that committees and subcommittees stack witness testimony to fit a particular perspective is a valid argument for which I find clear and persuasive support in the issue areas examined in this project.

Even in technical policy areas like climate change and biotechnology policy that may be difficult for a layperson to understand, selection of witnesses that will present testimony espousing committee leaders' preferred positions in policy debates clearly occurs. In each of the issue areas examined, in most dimensions of the issues, the

overall tone of testimony fit the perceived biases of the committee venue and/or the chair of the committee or subcommittee conducting the hearing. First of all, in the issue area of tobacco policy, the tobacco industry, particularly farmers, received far more positive treatment during hearings in front of the agricultural committee than the industry did during hearings in front of other types of committees. When the agricultural committees conducted hearings on the topic of tobacco policy, representatives of the interests of tobacco farmers were more likely to be invited to testify than they were in front of other committees, health and safety advocates and experts that were the most likely to discuss the health and safety aspects of the tobacco issue were less likely to be invited to testify than they were in front of other types of committees, and the overall tone of testimony presented on the issue was significantly more positive toward the tobacco industry than the tone of testimony presented in front of other types of committees.

In the issue of climate change, while no types of venues emerged as being biased in the tone of witness testimony concerning the issue, committee staff fairly clearly chose a large portion of their witnesses based on whether or not they were likely to present testimony that fit the chair's viewpoints on the issue. During hearings on the climate change issue, changes in the tone of witness testimony across different committees across time were significantly related to changes in the belief systems of the chair of the committee holding the hearing. More specifically, conservative chairs and chairs with pro-economic beliefs on general environmental issues tended to preside over hearings that produced testimony that was more pro-economic in tone. By contrast, liberal chairs and chairs with pro-environmental beliefs on general environmental issues

tended to preside over hearings that produced testimony that was more pro-environmental in tone.

In the issue of biotechnology, biases in committee tone based on the type of venue conducting the hearing and the beliefs systems of the chair presiding over the hearing were both evident during hearings on different dimensions of the issue. First of all, both agricultural and economic promotion committees were significantly more positive toward the use of biotechnology than a typical run of the mill committee. Furthermore, when hearings dealt with the use of human embryonic matter for health purposes, changes in the tone of testimony concerning the issue were significantly related to changes in the belief systems of the chair presiding over the committee conducting hearings on the issue. More specifically, conservative chairs presided over hearings where the overall tone of testimony was more critical of the potential ethical and safety risks that could arise from the use of biotechnology techniques on human embryos for health purposes. On the other hand, liberal chairs presided over hearings where the overall tone of witness testimony was more positive about the potential benefits of the use of biotechnology on human embryos for health purposes.

As the preceding examples demonstrate, congressional committees and their staffs seem to select witnesses with a mind toward choosing witnesses that will espouse the preferred viewpoint of the committee holding the hearing. However, the argument that committees stack witness testimony to only represent one side in a particular political argument is a bit overstated. While the majority of witnesses in most hearings will likely share the viewpoints of the chair presiding over the hearing, minority party leaders on committees have different tools at their disposal to ensure that witnesses

representing their viewpoints on an issue will be allowed to testify at hearings before the committee.

First and foremost, as stated in Chapter 2, procedural rules in the House and Senate require all congressional committees and subcommittees (except the Senate Appropriations Committee) to permit the minority party to call its preferred witnesses on at least one day of the hearing if a majority of minority committee or subcommittee members vote to invoke this rule (Davis 2011b, 2011c). Although the so-called "minority witness rule" is seldom formally invoked by the minority party, it serves as an important procedural safeguard to ensure that the minority party's preferred witnesses are not totally excluded from a hearing (Davis 2011b, 2011c). In practice, strong norms exist within virtually all congressional committees that dictate that the majority party honors the requests of minority committee members to invite at least one witness to testify during a hearing. On many committees, however, committee norms dictate that minority members may invite even more than one witness to testify depending on the total number of witnesses being invited to testify at a particular hearing (Staff Interviews 2010). Furthermore, in addition to the procedural rules and norms that permit the minority to call at least one witness to testify at a congressional hearing, rank and file members can use opening statements, speeches, and statements to the press to call into question the fairness of a hearing if the majority does not allow them to call their preferred witnesses to testify at a hearing. Since committee chairs do not want their reputation damaged by having the fairness of their hearings called into question, they will often work with the minority when inviting witnesses to avoid scrutiny.

Evidence of the minority party's role in witness selection can be seen best in the partisan issue contexts studied in the previous chapters. First of all, in the issue of climate change, even after those with pro-economic beliefs began to control institutional venues in Congress and started to control witness selection activities in the climate change issue area, hearing testimony presented in front of congressional committees on the issue did not become overwhelmingly pro-economic in tone like one would expect if the majority party was stacking witnesses to exclude the minority party's preferred witnesses on an issue. Furthermore, as the chair and the minority ranking member's beliefs on general environmental issues diverged within a committee and the Republican on the committee likely became increasingly more pro-economic in his or her viewpoints on general environmental issues, the tone of hearing testimony became increasingly pro-economic in tone even when controlling for the belief systems of the chair conducting the hearing. This demonstrates that changes in the minority party's viewpoints on an issue can also have an important impact on the tone of testimony on a particular issue.

The witness selection process for climate change hearings conducted by the Senate Environment and Public Works Committee during the 108th and 109th Congresses provides solid evidence of the effect of the minority on the witness selection process in congressional hearings on the topic of climate change. During this time period, James Inhofe, a conservative Republican from Oklahoma served as chairman of the committee. Sen. Inhofe is a noted climate change skeptic who was called the theory of anthropogenic (i.e. human-caused) climate change "the greatest hoax ever perpetuated on the American people (Hearing Doc. 2008-S321-13)." However, despite

Sen. Inhofe's solidly pro-economic stance on the issue of climate change, the Senate Environment and Public Works Committee still invited witnesses that provided testimony arguing that climate change is a serious environmental problem that should be tackled by the federal government while Inhofe was chairman of the committee. In the 108th Congress, while most witnesses espoused the viewpoint that climate change was not a problem that should be tackled by the federal government, 1 (or 33.33%) of the 3 witnesses on the climate change issue provided testimony supporting the argument that climate change is a serious environmental problem. During hearings conducted by the committee in the 109th Congress, while over half (56.25%) of the witnesses called to testify espoused the very pro-economic viewpoint in the debate, 6 (or 37.5%) of the 16 witnesses called to testify provided testimony that was very pro-environmental in tone toward the climate change issue. As this example demonstrates, even when those with solidly pro-economic viewpoints controlled committee venues, witnesses espousing the pro-environmental perspective still were invited to testify at hearings dealing with climate change policy.

The role that minority party members play in witness selection is also evident when examining hearings dealing with the controversial health aspects of the biotechnology issue area. First of all, even when controlling for the beliefs of the chair, the overall tone of testimony in front of committees and subcommittees that held hearings dealing with the creation and cloning of human embryos and human embryonic stem cells for health purposes was more negative toward the biotechnology industry than the tone of testimony in front of committees dealing with all other dimensions of the issue. This result demonstrates that even when committee chairs are

liberal and thus likely to support the use of biotechnology on human embryonic matter for health purposes, witnesses that do not support the use of biotechnology on human embryos will still be called to testify due to the influence that conservative minority members can have on witness selection.

The witness selection process for climate change hearings conducted by the House Committee on Government Reform's Subcommittee on Criminal Justice, Drug Policy, and Human Resources during the 107th and 109th Congresses provides further evidence of the effect of the minority on the witness selection process for biotechnology hearings. During this time period, Mark Souder, a conservative Republican from the state of Indiana served as chairman of the subcommittee. During his time in Congress, Rep. Souder was also known as a staunch opponent of embryonic stem cell research and cloning of human embryos mostly due to his belief that human life begins with the creation of a human embryo. As an opponent of biotechnology research on human embryos, Souder argued in statements concerning the issue that the potential of embryonic stem cell research was "entirely speculative", required the "destruction of living human embryos", and would likely lead to the "exploitation of women in order to obtain eggs for research." Nonetheless, despite Rep. Souder's clear opposition to embryonic stem cell research, the subcommittee he chaired still invited witnesses who were very supportive of increased federal funding of embryonic stem cell research and who trumpeted the potential benefits that this research could provide for those suffering from debilitating diseases like Parkinson's disease, AIDS, and spinal cord injuries. For instance, in two hearings held on the issue during the 107th Congress, although the majority (58.8%) of witnesses that were invited to testify in front of the subcommittee

on the issue vehemently opposed the use of embryonic matter for health purposes, 7 (41.1%) of the 17 witnesses expressed support in some way for such use of embryonic matter. Furthermore, in the hearing held on the issue during the 109th Congress, while the overall tone of testimony tended to be opposed to embryonic stem cell research, 3 (37.5%) of the 8 witnesses called to testify expressed overall support for such research. Once again, this example demonstrates that while the overall tone of testimony in a hearing will generally fit the beliefs of the chair of the committee or subcommittee, perspectives and positions that are not shared by the chair will often be represented in witness testimony on the topic. As such, the idea that hearing testimony is stacked to only represent the perspectives of the chair is somewhat overstated.

With this said, the preceding examples do not preclude the possibility that stacking of testimony to ignore alternative positions on an issue occurs under certain circumstances. However, stacking of testimony is not likely to occur within competitive subsystems working on partisan issues like the two issues described above. Instead, stacking of testimony is more evident when the members within a committee espouse similar positions on an issue. Such agreement amongst committee members is most likely to occur within unified subsystems that are dealing with issues that are particularly likely to unite committee and subcommittee members.

The agricultural committees in Congress clearly stacked testimony to support policies that would benefit farmers when dealing with policy issues that directly impacted the agricultural community. For instance, when dealing with tobacco policy, of the 1094 witnesses called before the agricultural committees, 1021 (93.3%) were very supportive of the tobacco industry in their testimony before the committee. By

contrast, the tone of testimony of only 14 (1.3%) witnesses could be classified as negative or very negative toward the tobacco industry. Additionally, when considering the use of biotechnology tools that have the potential to improve crop productivity, of the 172 witnesses called before the agricultural committees on the issue, 140 (81.4%) were very supportive of the use of agricultural biotechnology. On the other hand, the tone of testimony of only 19 (11%) witnesses could be classified as opposed or very opposed to the use of agricultural biotechnology.

As these examples demonstrate, while witnesses with alternative positions were sometimes called to testify during hearings in front of the agricultural committees on issues important to farmers, the vast majority of witnesses called to testify presented testimony that was supportive of the agricultural community. This finding can likely be attributed to the fact that the issues being examined united agricultural committee members in support of the farming community. As such, witnesses that opposed the tobacco industry and agricultural biotechnology did not appear in many hearings on these issues because no one on the committee was clamoring for them to appear in the way that minority members clamor for witnesses representing their perspectives to appear during hearings dealing with more partisan issues like climate change. Most, if not all, members on the agricultural committees likely agreed with the witness selections made by the chair, so alternative perspectives were less likely to be heard in committees within the agricultural subsystem.

Hearings as a Tool for Information Collection. In an ideal world, most citizens would likely want congressional committees and subcommittees to use the congressional hearing process to gather information that would help congressional policymakers make

the best policy decisions possible. After all, the hearing process affords congressional policymakers with the opportunity to call almost anyone they choose, ranging from policy experts to federal executive branch officials, to testify before them and extract information out of these witnesses that is relevant to the policymaking process. Unfortunately, the evidence for the use of congressional hearings to genuinely collect information is decidedly mixed even in technical policy issues like climate change and biotechnology.

To review, the idea that congressional committees and subcommittees utilize the congressional hearing process to genuinely collect policy-relevant information rests on the following two expectations. First of all, as Leyden (1995, 433) describes, if committee and subcommittee chairs genuinely wanted to use the hearing process to gather information to inform their decisions on important policy issues, we would expect that they would instruct their staffs to seek out witnesses that are representative of the diverse set of viewpoints on an issue in order to provide as many different informational perspectives about a policy problem as possible. Secondly, if committees use the hearing process to collect the best information possible to inform congressional policymakers' decisions, we should also expect that committee and subcommittee chairs would seek out non-partisan, non-ideological policy experts to testify, as these individuals are the most likely candidates to provide the information necessary for congressional committee members to become experts on a policy issue.

With respect to the first expectation, on the one hand, the overall tone of witness testimony concerning the use of biotechnology was relatively balanced during the early stages of the issue's development in the 94th and 95th Congresses. When considered in

combination with the fact that the tone of committee members' statements concerning biotechnology was also relatively neutral and balanced during the same time period, this balance in testimony seems to suggest that committees called a wide variety of witnesses with a wide range of perspectives to testify on the issue because they genuinely wanted to collect the best policy information possible. Thus, as the example of biotechnology policy suggests, committees and subcommittee have demonstrated the willingness to use the hearing process to call witnesses with a variety of different positions on a particular issue.

Nonetheless, examples of congressional committees and subcommittees using the hearing process to call witnesses with a wide variety of viewpoints on an issue rather than using the process to call witnesses that share the beliefs of the chair are few and far between. As the last section demonstrated, in at least one dimension of each of the issues studied in this project, the overall tone of testimony fit the perceived biases of the committee venue and/or the chair of the committee or subcommittee conducting the hearing. Even in the aforementioned issue area of biotechnology, in several dimensions of the issue, the tone of testimony presented was clearly related to the institutional biases of the committee running the hearing or the beliefs of the chair of the committee running the hearing. If committees and subcommittees were using the hearing process to genuinely gather information in these issue areas, the tone of testimony would likely not match the biases of the committees and subcommittees running the hearings so consistently, because members of these institutions would want to hear from a variety of different perspectives in order to ensure that they were making the best decisions possible.

With respect to the second expectation, evidence that congressional committees and subcommittees seek to call expert witnesses to testify at hearings is decidedly mixed. On the one hand, during the early stages of the climate change and biotechnology issue areas, experts made up far and away the most common type of witness called to testify at congressional hearings. For instance, in the early stages of the biotechnology issue area's development (the 94th-98th Congresses), experts made up 55.29% of the witnesses called to testify in hearings on the issue. However, as time has progressed, experts have made up an increasingly smaller percentage of witnesses testifying during hearings on the biotechnology issue. More specifically, during the later stages of the biotechnology issue's development (the 105th-109th Congresses), experts only made up 33.66% of the witnesses called to testify during hearings on the issue.

The same general trend with respect to expert testimony can also be found in the issue of climate change. In the early stages of the climate change issue area's development (96th-100th Congresses), experts made up 62.58% of the witnesses called to testify during climate change hearings. By contrast, during the later stages of the issue's development (105th-109th Congresses), experts have only made up an average of 37.47% of the witnesses called to testify during hearings dealing with climate change. As this evidence demonstrates, it is clear that expert testimony has been valued in both the biotechnology and climate change issue areas, as experts have consistently made up a significant portion of the witnesses called to testify in both issue areas. Nonetheless, it is also clear that the percentage of expert witnesses called to testify in both of these issue areas has fallen significantly over time. As such, it appears that testimony from

policy experts is not as valued in the climate change and biotechnology issue areas as it once was.

As the previous analysis suggests, even in technical and complex policy areas like climate change and biotechnology where policymakers may have difficulty determining the best policy action to take, congressional committees have not consistently used congressional hearings to collect unbiased information from policy experts. Nonetheless, congressional committees and subcommittees have shown the willingness to seek out expert testimony and witnesses providing a balance of viewpoints on an issue when examining a technical issue that is in the early stages of its policy development. Consider once again the example of biotechnology policy. During the very early stages of this issue, experts far and away were the most common type of group called to testify at hearings on the issue. Furthermore, the witnesses called to testify on the issue presented testimony that altogether was balanced in tone and represented the wide variety of different positions on the issue. As this example demonstrates, committees and subcommittees do not always use the hearing process to invite witnesses that will espouse the preferred viewpoint of the committee or subcommittee holding the hearing. When an issue is newer and more technical and committee members are more likely to be uncertain about the potential effects of policy decisions, committees and subcommittees seem to be more likely to use the hearing process to call witnesses that espouse a wide cross-section of different positions on a policy issue. Furthermore, committees and subcommittees also call larger percentages of experts to testify on technical issues during the earliest stages of the issue, likely because these experts have the knowledge necessary to reduce some of the uncertainty

amongst committee and subcommittee members concerning potential policy options to tackle the issue.

Nonetheless, by and large, committees and subcommittees tend to use the hearing process to collect and display information that matches and bolsters the positions of committee and subcommittee members. The hearing process in technical issue areas like climate change and biotechnology is no exception to this general finding. For instance, as committee members become more confident in their understanding of biotechnology and aspects of the issue began to take on qualities consistent with partisan and distributive issue areas, committees seemed to use the hearing process to collect and display information that fit either the institutional biases of the committee holding the hearing or the belief systems of the chair of the committee holding the hearing. Furthermore, as the issue has progressed and the beliefs of committee members concerning biotechnology have become more concrete, committee members have relied less on the experts that are most likely to reduce uncertainty on the proper policy actions to take on an issue and more on representatives of private interests that are the most likely to present biased information at a hearing to present testimony in front of them at congressional hearings.

As such, even in technical policy issues like climate change and biotechnology, over time, congressional committees tend to end up using the hearing process to select witness that will bolster the beliefs and positions of those holding key positions on the committee. Nonetheless, it would be very shortsighted to argue that congressional committees only use congressional hearings for this purpose and seldom use the process to genuinely collect and display policy-relevant information that will help congressional

policymakers make the best decisions on an issue area. Indeed, under certain circumstances (i.e. the issue is technical at its early stages of development), congressional committees can and have used the hearing process to call the types of witnesses that suggest they are using the process to genuinely collect information.

Distributive Issues and the Effects of Unified Subsystem Biases. As the previous sections have shown, overall, congressional committees and subcommittees tend to use the hearing process to collect and display information that can be used to bolster the viewpoints of the committee members responsible for selecting these witnesses (i.e. committee chairs and minority ranking members). Nonetheless, as stated earlier in this chapter, a significant degree of controversy exists amongst the community of scholars that argue that congressional committees are biased in the way they collect and display information in congressional hearings with respect to the factors and biases that drive how committees select information to collect and display in congressional hearings. On the one hand, punctuated equilibrium scholars have found that certain types of subsystem venues (i.e. congressional committees and subcommittees) are biased in the way that their members collect and display information in congressional hearings due to the consensual politics and united understanding of an issue that operates amongst members of such subsystems (Baumgartner and Jones 1991, 1993; Talbert, Jones, and Baumgartner 1995; Jones, Baumgartner, and Talbert 1993; Jones and Baumgartner 2005; Workman, Jones, and Jochim 2009). On the other hand, Advocacy Coalition Framework (ACF) scholars argue that those who control the witness selection process in congressional hearings (i.e. committee chairs) will be biased by their own beliefs and

other personal characteristics when deciding how policy information will be collected and displayed in congressional hearings (Sabatier and Jenkins-Smith 1993, 1999; Sabatier and Weible 2007).

As with most competing explanations of the behavior of actors within the political realm, proponents of both theories of information collection and display decisions have a great deal of evidence to back up their claims. As such, the key to truly understanding information collection and display decisions in congressional hearings is not to determine which of the competing explanations is "more correct." The key to truly understanding which biases drive witness selection and other information collection and display decisions in congressional hearings is to determine the conditions under which different explanations have more explanatory value vis-à-vis other theoretical perspectives.

As my theory of information collection and display politics explains, the biases that drive information collection and display decisions in congressional hearings will differ depending on the type of issue being examined at a hearing and the type of subsystem context within which the committee or subcommittee holding the hearing operates. In distributive issue contexts where policies are likely to benefit specific constituencies in society (Lowi 1964, 1972; Weingast 1979), subsystems made up of the congressional policymakers that represent these constituencies will act as unified subsystems whose members generally agree on conceptions of policy issues due to the common characteristics of their constituencies, and thus, use the hearing process to collect and display information that supports policies designed to benefit members' constituents. Furthermore, in unified subsystems dealing with a distributive issue that is

likely to increase unity amongst subsystem members, the individual characteristics (i.e. belief systems) of committee chairs are unlikely to have significant impact on the tone of witness testimony because most members, regardless of their personal characteristics, are likely to agree on the tone of information that should be presented at a hearing. As such, committees and subcommittees will use the hearing process to call witnesses that will bolster the decisions committee members would have made absent this information (Sabatier 1978; Feldman and March 1981; Weiss 1988; Galster 1996; Shulock 1999) and to demonstrate to members outside the committee that members of the subsystem have the expertise necessary to keep jurisdictional control over the issue area (King 1997).

Three issue subsystems working on issues examined in this project exhibit characteristics that make them strong candidates to act as unified subsystems. These subsystems include the agricultural subsystem made up of the two agricultural committees in both chambers of Congress, the science subsystem made up of the two science committees in both chambers of Congress, and the economic promotion subsystem made up of the two small businesses committees in both chambers of Congress and the Joint Economic Committee. Each of these subsystem types share certain characteristics that make them all likely to act as unified subsystems when collecting and displaying information in congressional hearings. First of all, all of these subsystems consist of congressional committees whose members have expressed that their desire to serve on the committee is derived from their desire to serve their constituents (Smith and Deering 1990; Deering and Smith 1997; Frisch and Kelly 2006). As stated in earlier chapters, politics within committees whose members are

more constituency-oriented tend to be more consensual and less divisive, as congressional policymakers support each other's demands for constituency benefits to ensure legislative support for their own constituency's demands in the future (Fenno 1973; Mayhew 1974; Weingast 1979; Shepsle and Weingast 1981; Tullock 1981; Weingast and Marshall 1988; Smith and Deering 1990; Deering and Smith 1997; Maltzman 1997). As such, a culture of cooperation amongst committee members may be more likely to be present in these constituency-oriented than would be the case in committees that were more policy or prestige oriented.

In addition to the constituency-oriented nature of committees within these subsystems, each of these committees also have a reason, by virtue of their jurisdiction, stated committee missions, and the issues being examined, to be biased in information collection and display decisions. In the case of the agricultural subsystem, agricultural committees have traditionally served the role as protectors and promoters of agricultural interests in Congress. In two of the issue areas examined in this project, agricultural committees had strong reasons to assert this role as a defender of agricultural interests. In the case of tobacco policy, agricultural committees had a reason to use the hearing process to collect and display information that was supportive of the tobacco industry, because tobacco is an agricultural crop and putting restrictions on tobacco products likely would harm the economic vitality of farmers that produce the crop. In the case of biotechnology policy, despite the risks involved with using such tools, biotechnology tools have been demonstrated to increase agricultural productivity, which can also help the economic circumstances of those in the agricultural community. As such, it would make sense for the agricultural committees in Congress to use the hearing process to

tout the benefits and downplay the risks of using biotechnology tools for agricultural purposes.

In the case of the economic promotion subsystem, the committees within the subsystem, particularly the small business committees, have generally served as supporters of economic interests, particularly those of small businesses. For instance, the House Small Business Committee states that its mission is "to protect and assist small businesses (House Small Business Committee)." In the biotechnology issue area, committees within the economic promotion subsystem had strong reasons to act as a defender of the biotechnology industry. The biotechnology industry is a relatively new industry with the potential to help the competitiveness of the American economy. Many biotechnology firms need assistance from the government in reducing regulatory barriers to development, obtaining patents for inventions created through biotechnology, and obtaining assistance for scientific research and development. Furthermore, many biotechnology firms are small businesses and two of the main committees in the economic promotion subsystem are small business committees whose mission and jurisdiction includes protection and assistance for small businesses. As such, it would be logical for the committees within the economic promotion subsystem to use the hearing process to attempt to bolster support for the biotechnology industry within Congress.

In the case of the science subsystem, the two committees within the subsystem have generally assumed the role as a supporter of scientific research and development. In both the issue areas of climate change and biotechnology, committees within the science subsystem have strong reasons to assert this role as a defender of the interests of

the scientific community. In the case of climate change, due to the large portion of the scientific community's insistence that climate change is a problem, venues like the science committees that are more likely to promote the scientific community may also be more sympathetic to the potential dangers of climate change. In the case of biotechnology policy, since biotechnology is a heavily science-centric industry that requires a significant amount of scientific research and development to expand and thrive, members of the science subsystem may be more likely to support the use of biotechnology than members of other committees working on the issue. As such, in both the climate change and biotechnology issue areas, we may logically expect that congressional committees within the science subsystem would use the hearing process to collect and display information that is sympathetic toward the scientific community.

Nonetheless, despite the strong reasons for each of these subsystems to act as unified subsystems when collecting and displaying information in congressional hearings, only committees within certain subsystems have clearly used the hearing process to advance the assumed biases of their respective subsystems. In the case of the agricultural subsystem, committees within the subsystem have consistently utilized the hearing process to collect and display information that was supportive of the agricultural community. In the case of tobacco policy, member statements given by members of the agricultural committee were more positive in tone toward the tobacco industry than statements given by members of a typical committee, witnesses called to testify in front of the committee gave testimony that was more positive in tone toward the tobacco industry than witnesses chosen to testify in front of a typical committee, and greater percentages of farmers were called to testify in front of the committee than a

typical committee. In the case of biotechnology policy, the tone of member statements and witness testimony presented before the committee was more positive in tone toward the use of biotechnology than a typical run of the mill committee. In both issue areas, it is clear that the agricultural committees in Congress utilized the hearing process to collect and display information that supported the interests of the agricultural industry. The same use of the hearing process to present information that fits the general biases of the subsystem in which a hearing takes place can be found in how the economic promotion subsystem collected and displayed information during hearings dealing with the biotechnology issue. In these hearings, the tone of member statements and witness testimony presented before committees in the economic promotion subsystem was more positive in tone toward the biotechnology industry than a typical run of the mill committee. As such, it is clear that both the agricultural and economic promotion subsystems acted as unified subsystems in the way they each collected and displayed information in congressional hearings covering issues that were of utmost importance to members of the subsystem.

With this said, despite reasons to suspect that the science subsystem would act as a unified subsystem in the issue areas of climate change and biotechnology, science committees were did not collect information that was significantly different than a typical run of the mill committee during hearings concerning these issue areas. More specifically, the tone of member statements and testimony presented before the committee was not significantly different when compared to miscellaneous run of the mill committees in both the climate change and biotechnology issue areas. These results lead one to wonder, why have the committees that make up other subsystems not been

as biased in terms of information collection and display decisions as the committees that make up the agriculture and economic promotion subsystems? More specifically, why have the committees that make up the science subsystem not been more biased in support of the scientific community in terms of their information collection display decisions in congressional hearings?

Perhaps the main reason that the science subsystem did not act as a unified subsystem when collecting and displaying information in congressional hearings can be derived from the fact that the issue areas being examined by the science committees in Congress were not conducive to uniting subsystem members in support of a common cause. For instance, in the case of climate change, even the scientific aspects of the issue concerning whether or not changes in the global climate are occurring is a matter of controversy that has split members with different party affiliations and belief systems. As such, even if the scientific committee is generally a supportive venue for scientific research, the partisan nature of the issue over whether climate change is actually occurring can lead to divisions amongst members that would otherwise be united on other issues. As issues become more partisan, like the climate change issue has become over time, it becomes more likely that committee venues like the science committees will be split into competitive coalitions by virtue of the control party leaders have over the committee appointment process and the fact that most committees' memberships break down along partisan lines (Cox and McCubbins 1993; 2005). When competitive coalitions form within a committee venue, changes in who controls the committee are likely to lead to wide differences in what types of information will be collected and displayed in congressional hearings due to the wide differences in beliefs

about the issue amongst members of the committee or subcommittee. As such, when congressional committees deal with partisan issues, the personal views of those running the hearing have more of an impact on the information collection and display process than the type of committee venue in which the hearing takes place.

In addition to the highly partisan nature of the issue, climate change also does not contain the substantial distributive component found in issues like tobacco policy that has the propensity to unite members of a subsystem. Unlike tobacco policy, which has the potential to directly and tangibly benefit farmers living in the districts and states of agricultural committee members, climate change policy provides no tangible benefits to distribute to scientific researchers residing in the districts and states of scientific committee members. More specifically, while many climate scientists may argue that climate change is a problem that needs to be tackled by the federal government, policies to tackle the climate change issue likely would not provide many tangible economic benefits to scientific researchers that work on the issue. Thus, after considering the divisive nature of the climate change issue and the lack of a unifying distributive component within the issue, it is quite logical that scientific committees did not act as a unified subsystem when collecting and displaying information on the climate change issue.

In the issue area of biotechnology policy, the case for science committees to act as unified subsystems when making information collection and display decisions is quite a bit stronger. Unlike the climate change issue, the biotechnology issue area contains a large distributive component including issues like government support for biotechnology research and development where tangible government benefits can be

distributed to scientific researchers living in the states and districts of members serving on the science committees in Congress. For example, the scientific committees frequently examined issues dealing with Human Genome Project, which was a large scientific research project designed to study the genetic makeup of the human body. The Human Genome Project required a great deal of funds and support to carry out and had the potential to create jobs for large numbers of scientific researchers. As such, government policies dealing with biotechnology projects like the Human Genome Project had the potential to unite members of scientific committees looking to distribute benefits that would benefit scientific researchers in committee members' districts and states.

Nonetheless, despite the presence of a distributive component in the biotechnology issue that had the potential to bring together members of the science subsystem in support of biotechnology research and development, the tone of information collected and displayed by the science committees on the biotechnology issue was not significantly different from a typical run of the mill committee. This result can likely be attributed to the fact that, unlike the agricultural and economic committees, the science committees worked on aspects of the biotechnology issue that were likely to both divide members from different political parties within the subsystem and cause members of the subsystem to call witnesses with a variety of viewpoints in order to reduce uncertainty amongst subsystem members concerning the risks and benefits of biotechnology research and development. First of all, unlike committees within the agricultural and economic promotion subsystems who seldom held hearings during the early stages of the biotechnology issue, science committees conducted a

significant amount of hearings during the early stages of the issue when little was known about biotechnology and congressional policymakers were uncertain as to what policy actions to take concerning the issue.[21] As stated in previous section, during the early stages of the biotechnology issue, all congressional committees, including the science committees, seemed to use the congressional hearing process to hear from a variety of different perspectives, particularly from experts, rather than using the process to drum up support for scientific research and development. As such, it is not particularly surprising that science committees did not use the hearing process to bolster scientific research during the early stages of the issue, because members of the science subsystem were not certain enough to know whether the risks of the research outweighed its benefits during the early stages of the issue.

In addition to the fact that the science committees held hearings on the issue of biotechnology during the early and uncertain stages of the issue, unlike committees within the agricultural and economic promotion subsystems, the science committees also confronted the controversial and partisan dimension of the biotechnology issue involving human cloning and embryonic stem cell research.[22] As the results from the previous chapter demonstrate, policies related to the use of human embryonic matter for

[21] Eleven of the cases in which science committees held hearings on the biotechnology issue during a particular Congress took place during the early stages of the issue from the 94th-99th Congresses. By contrast, only three of the cases in which agricultural committees held hearings on the biotechnology issue during a particular Congress and one of the cases in which the economic promotion committees held hearings on the issue during a particular Congress took place from the 94th-99th Congresses.

[22] Three of the cases in which science committees held hearings on the biotechnology issue during a particular Congress dealt with the controversial health aspects of the issue. By contrast, the agricultural and economic promotion committees have never held hearings that dealt with the controversial health aspects of the biotechnology issue.

health purposes clearly divided committee members with different core belief systems, in large part due to the similarities of the issue area to the issue area of abortion. Much like the climate change issue, this divisive dimension of the biotechnology issue served to divide scientific committee members in their support for biotechnology research and development who may have otherwise been united in their support for the technology when used for other purposes. Due to the divisive nature of human cloning and embryonic stem cell research, the tone of testimony and committee member statements on this dimension of the issue tended to be significantly more negative than testimony and statements given on other dimensions of the issue. As such, the fact that the science committees conducted hearings on the divisive dimension of the biotechnology issue likely served to drag down the overall supportive tone of testimony and member statements for biotechnology within the scientific subsystem.

As the analysis in the previous section suggests, the fact that the tone of testimony given in front of science committees on the biotechnology issue was not significantly more positive than a run-of-the-mill committee can likely be attributed to the high percentage of cases in which the committees worked on either the highly uncertain or controversial dimensions of the issue. Of the 36 cases in which science committees held hearings on the biotechnology issue, 14 (38.89%) either took place during the early stages of the issue during the 94th-99th Congresses or dealt with the controversial dimensions of the issue. By contrast, only 15.79% of the cases in which agricultural committees held hearings on the biotechnology issue and 12.50% of the cases in which the economic promotion committees held hearings on the issue during a congressional session took place during the first five Congresses (94th-99th Congresses)

in which the issue was examined in congressional hearings. The agricultural and economic promotion committees have yet to hold any hearings on the controversial aspects of the biotechnology issue.

[Table 7.1 Here]

In order to demonstrate the effects that different types of issue dimensions have had on the tone of testimony presented in front of the science committees, Table 7.1 depicts the average tone of testimony presented in front of the science committees concerning biotechnology under different issue contexts. For the purpose of comparison, the average tone of testimony presented in front of the committees within the agricultural and economic promotion subsystems is also presented. As Table 7.1 demonstrates, while the overall tone of testimony presented in front of the science committees was moderately positive toward biotechnology, testimony tone was more negative toward biotechnology than the agricultural and economic promotion committees by a fairly significant margin. As Table 7.1 further depicts, the tone of testimony presented during hearings held prior to the 100th Congress was only moderately positive toward the biotechnology industry and decidedly more negative toward the biotechnology industry than the overall tone of testimony presented in front of the science committees. Furthermore, as expected, the tone of testimony presented during hearings on the controversial dimension of the issue was slightly negative overall toward the biotechnology industry and significantly more negative toward the biotechnology industry than the overall tone of testimony presented in front of the

science committees. When cases where the science committees conducted hearings during the early stages of the issue (the 94th-99th Congresses) and cases where the committees conducted hearings dealing with the controversial dimension of the issue are excluded, the average tone of testimony of 1.565 approaches the very positive average tone of testimony presented in front of the agricultural and economic promotion committees.

As this analysis demonstrates, the type of issue being examined in a congressional hearing can have a powerful effect on the degree to which a subsystem venue is biased in the way it collects information. When committees consider partisan issues that are likely to divide members of a committee or new and technical issues that are likely to lead to high degrees of uncertainty amongst committee members, committee members are significantly less likely to be united in their conceptions of a policy issue, and thus, will be less likely to be united when making decisions on what information to collect and display at congressional hearings. As such, committees are less likely to be biased in the tone of information collected and displayed in congressional hearings when considering partisan and new and technical issue areas. By contrast, distributive issues that directly affect the constituents of committee members are more likely to unite committee members in support of a shared ideal. As such, committees are more likely to be biased in the tone of information collected and displayed in congressional hearings when considering distributive issue areas.

Partisan Issues and the Effects of Committee Chair Beliefs. As stated earlier, many theorists argue that those who control the witness selection process in congressional hearings (i.e. committee chairs) will be biased by their own beliefs and other personal

characteristics when deciding how policy information will be collected and displayed in congressional hearings (Sabatier and Jenkins-Smith 1993, 1999; Sabatier and Weible 2007). As such, rather than members of committees venues being united and biased in the tone of information they collect and display at hearings on a particular issue, the tone of information collected and displayed at congressional hearings will change dramatically within a committee depending on the beliefs and individual characteristics of those in charge of the committee (i.e. committee chairs). In Chapter 2, I argue that the degree to which the beliefs and other characteristics of committee chairs will affect the tone of testimony presented at congressional hearings will largely depend on the issue and subsystem context in which a hearing takes place.

On the one hand, the belief systems and other characteristics of committee chairs are unlikely to affect the tone of testimony presented in front of committees that are part of unified subsystems confronting a distributive issue that is likely to unite subsystem members. Consider, for instance, the example of agricultural committees conducting hearings on the issue of tobacco policy. The tobacco issue is a distributive issue for agricultural committee members that is likely to unite members of the agricultural subsystem due to the significant effects the policy decisions in the issue area can have on farmers living in the districts of agricultural committee members. In the tobacco issue area, on the one hand, rank and file committee members working on the issue seemed to be biased by their individual beliefs and characteristics when making statements during congressional hearing on tobacco policy. For instance, committee members from tobacco states and committee members with more conservative beliefs tended to give statements that were more positive toward the

tobacco industry in tone than their counterparts that did not represent tobacco states and who had more liberal beliefs. Nonetheless, despite the fact that individual characteristics of individual members clearly affected the tone of individual member statements on the issue of tobacco policy, the individual characteristics of committee chairs had no significant impact on the tone of testimony presented during hearings on the topic of tobacco policy. Instead, as stated in the previous section, the type of committee venue that held the hearing was a more important indicator of the tone of testimony at a hearing than the personal characteristics of committee chairs. In particular, the testimony presented in front of agricultural committees was significantly more positive in tone toward the tobacco industry than the other committees that held hearings on the issue.

With this said, why are the individual characteristics of committee chairs not a significant indicator of the tone of testimony presented at tobacco hearings when the characteristics of committee members clearly were significant determinant of the tone of individual member statements? First of all, remember that individual members have much more control over their own individual statements than chairs have over the overall tone of testimony presented during hearings over which they preside. Unlike the other stages of the hearing preparation process, the personal staff members of individual members tend to have a greater role in crafting opening statements and lines of question for their respective members (Staff Interviews 2010). Of course, the final decisions on what particular committee members will say at a congressional hearing are ultimately up to the individual members that are participating at the hearing (Staff Interviews

2010). As such, individual committee members have a large degree of discretion to say whatever they please during congressional hearings on a particular topic.

Committee chairs, on the other hand, do not have the same degree of discretion to be able to totally control who is invited to testify at a particular congressional hearing. More specifically, due to the formal rules and informal norms permitting the minority to call witnesses to testify at hearings and the fact that rank and file members can use opening statements and speeches to call into question the fairness of a hearing, committee chairs must often allow minority party members to have some input on the witness selection process. As such, committee chairs cannot use the hearing process to choose witnesses that will only represent their viewpoints on a particular issue.

With this aspect of congressional hearing politics in mind, in unified subsystems that are tackling a distributive issue that is likely to unite subsystem members, the characteristics and beliefs of the committee chair presiding over a hearing should not be a significant determinant of the tone of testimony presented in that hearing. In unified subsystems, regardless of the personal beliefs and characteristics of a chair, each of the chairs are likely to have similar viewpoints on the issue at hand and will likely call witnesses that fit the common viewpoints shared amongst members of the committee. Furthermore, in unified subsystems dealing with an issue that is likely to united subsystem members, the minority side is very unlikely to use minority witness rules and norms to select witnesses that are antagonistic to the views of the chair due to the consensual political environment that generally operates amongst members of the subsystem and the fact that the minority party is unlikely to disagree with the majority party's witness choices within a unified subsystem where everyone generally agrees on

the understanding of an issue. As such, in the tobacco issue, regardless of the characteristics of the chair presiding over the agricultural committees, the tone of testimony presented in front of the committee tended to be very positive toward the tobacco industry due to the shared support amongst members of the agricultural subsystem for tobacco farmers.

On the other hand, when a member with characteristics that would make him or her more likely to support the tobacco industry (i.e. representing a tobacco state, espousing a conservative ideology) chaired venues outside the agricultural subsystem that were more contentious, the tone of testimony presented did not reach the level of support for the tobacco industry found when agricultural committees held hearings on the issue. This result can likely be attributed to the role the minority plays in the witness selection process. For instance, unlike in agricultural venues, many members of the health and safety and judiciary committees did not share the understanding that tobacco products are important to the economy of many different regions of the U.S. Instead, these members focused on the harmful effects that tobacco use has on the health and safety of those who use the product. As such, even when members that supported the tobacco industry chaired health and safety and judiciary committees, the minority used their rights to select witnesses to call witnesses that would present testimony that was largely unsupportive of the tobacco industry. Furthermore, if tobacco state chairman had utilized the hearing process to stack testimony that was only supportive of the tobacco industry, members of the minority would have likely used their rights to make speeches and opening statements to call into question the fairness of a hearing. As such, chairman that were tobacco supporters could not stack testimony in the tobacco

industry's favor out of fear that the public would dismiss the hearing as political, which would damage the chairman's reputation.

With this said, while differences in the personal characteristics of committee chairmen are not likely to be a significant determinant of the tone of hearing testimony within unified subsystems tacking a distributive issue that is likely to unite committee members, the belief systems of committee chairs has been a highly significant determinant of the tone of testimony when committees hold hearings on partisan issues that are likely to heighten differences among subsystem members. With respect to the issues examined in this project, the belief systems of committee chairs had the most significant impact on the tone of testimony presented during hearings on the topics of climate change policy and the dimension of the biotechnology issue dealing with the use of biotechnology tools on human embryonic matter for health purposes. In the case of climate change policy, more conservative chairs and chairs with more pro-economic belief systems tended to preside over hearings that produced testimony that was generally more pro-economic in tone. By contrast, more liberal chairs and chairs with more pro-environmental belief systems tended to preside over hearings that produced testimony that was generally more pro-environmental in tone. In the case of the controversial health dimension of the biotechnology issue, conservative chairs tended to preside over hearings where the overall tone of witness testimony was more critical of the potential ethical and safety risks that could arise from the use of biotechnology on human embryos. By contrast, liberal chairs tended to preside over hearings where the overall tone of witness testimony was more positive about the potential health benefits of the use of biotechnology on human embryos.

In light of these results, the following question must be addressed: why have the personal beliefs of committee chairs had such a strong effect on the tone of testimony in the issue area of climate change and the controversial dimension of the biotechnology issue while having a comparatively muted effect in other issue areas? What makes these issue areas different from the other issue areas examined in this project? Unlike the other issue areas examined in the project, both the controversial dimension of the biotechnology issue and the climate change issue are clearly partisan issue areas that have divided members with different partisan affiliations. With respect to the climate change issue area, Republicans and Democrats have become increasingly divided over environmental policy in general since the 1970's (Shipan and Lowry 2001, 245). This polarization in general environmental beliefs between the two parties has clearly been evident in the specific environmental issue of climate change. As Chapter 5 demonstrates, Republicans and Democrats became increasingly divided in the tone of the statements they made during congressional hearings dealing with the climate change issue. With respect to the controversial dimension of the biotechnology issue, the use of biotechnology tools to create or clone embryos and embryonic stem cells is rooted in the very partisan debates over whether human life begins when an egg is fertilized and becomes an embryo. The fact that the climate change issue and the controversial health dimension of the biotechnology issue are both partisan issue areas is important due to the ability of partisan issue areas to heighten differences among members of a subsystem. When an issue causes divisions between members of the two political parties, the likelihood that each committee venue will be split into competitive coalitions significantly increases due to the control that party leaders have over the

committee appointment process and the fact that most committees' memberships break down along partisan lines (Cox and McCubbins 1993; 2005).

When subsystems are split into competing coalitions, the characteristics of the chair of the committee conducting the hearing will likely have the largest impact on the tone of testimony presented in front of a particular committee. Although the minority party plays a role in selecting witnesses, ultimately the chair of the committee holding a hearing plays the most important role in the process of selecting witnesses to testify at congressional hearings. In addition to other responsibilities, committee and subcommittee chairs are responsible for overseeing the process of selecting witnesses and sending the formal invitation to those selected to testify at a particular hearing (Sachs 2003; Palmer 2007; LaForge 2010). As stated earlier, when unified subsystems tackle a distributive issue that is likely to unite committee members, differences in the beliefs of committee chairs will not significantly affect the overall tone of testimony presented in hearings on an issue because committee members are likely to have shared understandings of an issue and should agree on the selection of witnesses to testify at a hearing.

On the other hand, when subsystems confront a partisan issue that is likely to divide subsystem members, committee members with different belief systems are likely to have very different understandings and positions on the issue at hand. For instance, in the conflictual dimension of the biotechnology issue area, liberals and conservatives are diametrically opposed to each other on the acceptability of embryonic stem cell research. Since committee staff members often evaluate the acceptability of a witness based on the degree to which the witness agrees with the positions of the chair (Staff

Interviews 2010), differences in the positions of chairmen can lead to wide differences in the tone of information presented by witnesses invited to testify at a hearing. Due to the fact that wider differences in viewpoints among committee members are likely to be found when a partisan issue is being examined, the beliefs of the chair rather than the committee venue in which a hearing takes place are crucial in determining the tone of testimony presented at hearings dealing with these types of issues. As such, changes in who controls a particular committee venue can have a substantial effect on the tone of testimony presented in front of a particular venue tackling a partisan issue. Therefore, it should not be surprising that the beliefs of committee and subcommittee chairs were most significant as determinants of the tone of testimony presented at hearings in the more partisan issue areas studied in this project while having a relatively muted effect on other issues where differences in the positions of individual members within a subsystem were less pronounced.

Nonetheless, while the belief systems of committee chairs had a significant effect on the tone of testimony presented in the partisan issue areas studied in this project, the belief systems of committee chairs did not have a significant effect on the types of witnesses called to testify during hearings on any of the three issues analyzed in this project. For instance, although many in the climate science community have argued that climate change is a serious problem that should be addressed by the government, committee chairs with conservative and pro-economic beliefs on environmental issues were no more or less likely to call scientific experts than committee chairs with liberal and pro-environmental beliefs. The lack of impact of committee chair beliefs on the types of witnesses called to testify in hearings can likely

be attributed to the fact that committee chairs typically seek to ensure that individuals with a wide spectrum of different backgrounds come to testify at a particular hearing (Staff Interviews 2010). Committee staff members generally feel that bringing in witnesses from a wide cross-section of different backgrounds can demonstrate that individuals from all walks of life support the position the chair espouses (Staff Interviews 2010). As such, even if committee staff members tend to look for witnesses that will espouse the chair's viewpoint on an issue, they try to avoid calling witnesses with similar backgrounds. With the basic findings of this project laid out, I now turn to a discussion of the normative implications of these findings for congressional policymaking.

Normative Implications of Information Collection and Display Politics: Are Congressional Hearings Worth the Time and Effort?

While this project has confronted many different issues related to the politics of information collection and display in congressional hearings, the core of this project seeks to answer the following question: do committees and subcommittees conduct hearings with a mind toward ensuring that a particular viewpoint will be overrepresented in witness testimony during a hearing? As the analysis presented in the previous chapters clearly demonstrates, in most cases, it is clear that committees and subcommittees are biased in one way or another when selecting information to collect and display in congressional hearings. Granted, due to the effects of the minority witness rule and informal norms of compromise between the majority and minority in witness selection, the conventional wisdom that committee chairs stack testimony to

only select witnesses that will espouse their positions while totally ignoring the positions of minority members when selecting witnesses may be a bit overstated. However, in almost every dimension of each issue area studied in this project, the overall tone of witness testimony fit the biases of either the committee venue conducting the hearing or the chair presiding over the actions of the committee.

For valid reasons, many skeptics of the hearing process may argue that these results call into serious question the utility of conducting congressional hearings. After all, as stated in Chapter 1, the process of congressional committees is very costly in terms of money, time, and lost opportunities to engage in other policymaking activities. First of all, congressional hearings require congressional committees to hire and pay congressional staff members to conduct extensive research on the topics being discussed at the hearing, including interviewing those testifying at hearings prior to the hearing taking place (Oleszek 1989, 98). Furthermore, congressional committees must also often pay for any expenses (i.e. travel, lodging, etc.) involved with ensuring that witnesses can appear at a committee hearing (LaForge 2010). Finally, the process of conducting hearings congressional hearings takes time away from congressional policy makers that could be used on other policymaking activities (i.e. writing legislation, forging compromises on bills, providing services to constituents, attending other committee meetings, etc.) that may be of utmost importance in determining whether constituents will reelect committee members in subsequent elections (Diermeier and Feddersen 2000, 52). Congressional committees do, in fact, spend a large amount of their time conducting congressional hearings. More specifically, between 1989-2004, Congress conducted an average of 11 congressional hearings per day on a wide variety

of policy topics.[23] If congressional hearings are not a useful policymaking activity, the amount of time, money, and resources spent on hearings would be significantly wasteful to society.

As such, in light of the findings that have been uncovered about congressional hearings in this project and the significant amount of time, money, and resources devoted to conducting congressional hearings, the following normative questions are important to consider. First of all, is it troubling that committee chairs use the hearing process to handpick witnesses that will fit a particular point of view in a debate when Congress spends so much time and resources to conduct these hearings? Secondly, should congressional committees spend less of their time on conducting hearings if committees are just going to use the process to call witnesses to testify that espouse a particular point of view? In sum, are congressional hearings a worthwhile policy activity for congressional policymakers to devote so much of their time, money, and resources?

In my opinion, despite the fact that committees generally use the hearing process to collect and display information that fits a certain position espoused by important committee members, the hearing process still serves a number of important purposes in the congressional policymaking process. First of all, critics of the hearing process should not forget about the vast potential of hearings to *collect and display important*

[23] Information on the number of hearings per Congress was collected from Baumgartner and Jones's *Policy Agenda Project* website, which can be found here: http://www.policyagendas.org .

Information on the number of days Congress was in session that was used to calculate the average number of hearings per day that Congress was in session can be found at the *Library of Congress* website here: http://thomas.loc.gov/home/ds/ .

policy information that can inform policymakers' decisions on an issue. As an informational gathering tool, congressional hearings afford congressional committees with the ability to call almost anyone they choose to testify before them and extract information out of these witnesses that is relevant to the policymaking process through questioning. Even when individuals are reluctant to testify at hearings, most congressional committees and subcommittees have the power to require individuals to appear before them by issuing subpoenas to those who refuse to testify (Palmer 2007). Although committees and subcommittees generally used this power to call witnesses that would present testimony bolstering the biases of committee members, during certain periods of certain issues, congressional committees and subcommittees seemed to use the process to attempt to gather the best information possible so that they could gain some perspective on what policy actions to take. For instance, in hearings conducted during the early stages of the biotechnology and climate change issue areas, experts in these issue areas who likely would present the most informative testimony on the issues at hand made up by far the largest category of witnesses testifying at hearings. Furthermore, during the early stages of the biotechnology issue, the relatively neutral overall tone of testimony suggests that committees wanted to hear from witnesses espousing a wide variety of different perspectives in order to properly understand the issue and arrive at the proper course of action to take. Thus, even though critics may be discouraged at the way congressional committees often use the process, they should not forget the fact that the process can and has been used by committees to collect solid policy information from experts on the issue.

However, even when committees and subcommittees utilize the process to select witnesses that will espouse their preferred viewpoint in a policy debate, the hearing process can still serve a number of important purposes in congressional policymaking. First of all, the congressional hearing process *adds transparency to the process by which congressional policymakers make important decisions*. Congressional hearings are very public affairs that are often televised, as they take place, on the C-SPAN cable outlets (Hallowell 2008). However, even if a hearing is not televised, unless extenuating circumstances dictate otherwise, congressional committees and subcommittees will typically print written transcripts of the testimony, questioning, and statements made by committee members and witnesses over the course of a hearing (Palmer 2007). As most staff members noted during interviews, the public nature of hearings allows congressional committees to "establish a record" that can be used for a variety of reasons at later stages of the hearing process (Staff Interviews 2010).

First of all, due to the fact that witnesses and committee members are making public statements that can be checked later, these individuals cannot go back on these statements when decisions are being made in terms of what policy actions to pursue later in the process. Furthermore, through statements made by committee members and witness during the hearing process, the public can see what the original intent behind a particular policy decision was. The statements and testimony presented in congressional hearings can be particularly helpful when courts and other actors are trying to determine whether actions taken by government actors, particularly bureaucratic actors when implementing laws, are consistent with the original intent of a particular law that has already been enacted (Staff Interviews 2010). Without the transparency of hearings, it

sometimes would be very difficult to determine what the original intent of a law is. As such, even if congressional committees use the hearing process to stack testimony that bolsters the positions and decisions that the committee is already espousing and pursuing, this testimony can be very helpful in establishing why congressional policymakers made the decisions that they did.

Related to the previous purpose, the congressional hearing process also affords committees with the opportunity to *provide support for the decisions that policymakers within the committee are making*. In a constitutional republic like the U.S., we should expect that our representatives will base their decisions on solid facts and reasoning. Through the hearing process, even if committees are only using the process to call witnesses that will bolster their own positions, citizens and policymakers outside the committee (i.e. other congressmen, executive branch officials, etc.) can at least see the information that is being presented to support legislative decisions made by these committees. From there, individuals outside the committee can judge for themselves whether or not they find the information presented by the committee to back up particular policy decisions to be compelling. Indeed, as past research has shown, the act of holding a hearing on an issue can serve as an important stage in the life of a bill as holding a hearing has been found to demonstrate to the floor that a bill has been vetted seriously enough to be considered by the floor (Burstein and Hirsch 2007, 179; Oleszek 1989; Diermeier and Feddersen, 2000; Krutz 2005) or that there are enough significant problems with a piece of legislation that it should not be passed (Brasher 2006).

Although it was not the main focus of this particular project, one of the most important purposes for which congressional hearings are conducted is to *oversee other*

actors in society, particularly members of the federal executive branch. Through the congressional hearing process, congressional committee and subcommittee members have the opportunity to call executive officials to testify before them and directly attempt to discredit the information they provide (Staff Interviews 2010). As we saw in the case of climate change hearings, when chairmen call witnesses from the federal bureaucracy to testify, they are likely doing so in order to directly question the wisdom of whatever policies they are pursuing rather than to bolster arguments made by one side or to genuinely collect information. This use of the hearing process to oversee the executive branch can be very healthy in the functioning of our government. Through strenuous questioning of executive branch officials by congressional committee members, these officials must regularly justify the decisions they make when implementing laws passed by Congress. Furthermore, due to the transparent nature of the process, when officials make statements during hearings, they are officially "on the record" when they make these statements. As such, executive branch witnesses cannot retract or go back on statements made during hearings later on in the process without having to defend the reasons for doing so. As such, congressional hearings serve as an important method for holding our executive branch officials accountable to Congress and U.S. citizens.

Finally, critics of our hearing process have often ignored the fact the *minority party has some rights and powers in the hearing process.* No, minority party members do not have the same powers over witness selection that the majority party, particularly the chair, has over the process. Indeed, the witness selection process is a highly majoritarian process where the vast majority of witnesses selected will be chosen by the

committee chair and in most cases will be selected to bolster the positions espoused by the committee chair. However, should we expect that the minority party would have an equal say in who gets to testify at hearings as the majority party does? Through the process of winning elections and gaining the approval of American citizens, the majority party has earned the power to control the policymaking process within a particular chamber of Congress. This power includes being able to determine which witnesses will be able to testify at congressional hearings. Nonetheless, despite the largely majoritarian nature of the witness selection process, due to the formal rules and informal norms permitting the minority to call witnesses to testify at hearings and the fact that rank and file members can use opening statements and speeches to call into question the fairness of a hearing, committee chairs must often allow minority party members to have some input on the witness selection process. The degree to which committee chairs allow minority members to have input on the witness selection process (i.e. the number of witnesses that the minority party is allowed to select) may vary from committee to committee. However, on every committee, strong institutional norms are present that permit the minority party to call at least one witness it chooses to testify at a hearing. As such, even though the perspective favored by minority party members may not get equal consideration in a congressional hearing, the perspective will at least be presented once over the course of a hearing.

Therefore, although some may argue that the biased nature of the witness selection process during hearings proves that the process is not worthy of attention by researchers, the important purposes of the hearing process stated earlier provide enough justification for scholars to continue researching this woefully understudied

congressional institution. Furthermore, as this study has demonstrated, the politics of congressional hearings are far more nuanced than many past scholars have described. Those subscribing to the conventional wisdom of congressional hearings have assumed that committee chairs will always utilize the process to shut out the minority and choose witnesses that bolster the positions of committee chairs. Yet, due to the rules and norms that operate within Congress, totally shutting out the minority perspective in witness selection simply does not happen as often as the conventional wisdom describes. Furthermore, depending on the issue context and the subsystem context in which a hearing takes place, those in charge of a committee may not seek to stack witness testimony to only represent a particular viewpoint. Rather, they may seek to use the process to call executive branch witnesses they know will disagree with their positions in order to hold these officials accountable to Congress and the public or to call expert witnesses with a wide variety of perspectives on an issue in order to more properly understand an issue and reduce the uncertainty that surrounds that issue. Finally, even when committees use the process to bolster a particular viewpoint in a debate, whether the institutional bias of a committee or the committee chair's belief systems are driving witness selection decisions largely depends on the issue and subsystem contexts in which a hearing takes place.

As such, the idea that all hearing politics operate the same way regardless of the issue being examined must be reexamined. Future researchers must continue to study the hearing process under a wide variety of different issue contexts to determine how decisions made over the course of the process can change depending on the context in which a hearing takes place. By looking at how the hearing process is conducted under

a wide variety of different contexts, we can gain a much greater appreciation for the variety of different ways the process can be utilized under different contexts and situations.

Table 7.1 Average Tone of Biotechnology Testimony under Different Issue and Subsystem Contexts

Subsystem	Issue Context	Average Tone of Testimony
Science	Overall	1.082
	94^{th}-99^{th} Congresses	0.510
	Controversial Dimension	-0.365
	After 99^{th} Congress Excluding Hearings on Controversial Dimension	1.565
Agricultural	Overall	1.667
Economic Promotion	Overall	1.853

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Appendix A. List of Congressional Hearing Documents in Each Issue Area

Tobacco Policy

U.S. Government Printing Office. CIS-No. 71-H161-4. *Burley Tobacco – Proclamation of Marketing Quotas, Farm Poundage Quotas (H.J. Res. 365, H.R. 4328, H.R. 4462, H.R. 5233, H.R. 5732).* Hearings before the Subcommittee on Tobacco of the House Committee on Agriculture. February 23, 1971; March 2 and 16, 1971.

U.S. Government Printing Office. CIS-No. 71-S161-3. *Poundage Quotas for Burley Tobacco (S. 789).* Hearing before the Subcommittee on Agricultural Production, Marketing, and Stabilization of Prices of the Senate Committee on Agriculture and Forestry. March 2, 1971.

U.S. Government Printing Office. CIS-No. 72-H161-10. *Miscellaneous (H.R. 6217, H.R. 1161, H.R. 6915).* Hearings before the House Committee on Agriculture. May 6 and 12, 1971; July 28, 1971.

U.S. Government Printing Office. CIS-No. 73-S261-4. *Public Health Cigarette Amendments of 1971 (S. 1454).* Hearings before the Consumer Subcommittee of the Senate Committee on Commerce. February 1, 3, and 10, 1972.

U.S. Government Printing Office. CIS-No. 72-H161-14. *Lease, Sale, and Transfer of Tobacco Acreage-Poundage Quotas (H.R. 8055, H.R. 10037, H.R. 11643, H.R. 12705, H.R. 12713).* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. February 8, 1972.

U.S. Government Printing Office. CIS-No. 72-S161-11. *Tobacco Exports.* Hearings before the Subcommittee on Agricultural Exports of the Senate Committee on Agriculture and Forestry. February 22 and 28, 1972.

U.S. Government Printing Office. CIS-No. 72-H621-13. *Change in Pay Status of Tobacco Graders (H.R. 9066).* Hearing before the Subcommittee on Employee Benefits of the House Committee on Post Office and Civil Service. April 13, 1972.

U.S. Government Printing Office. CIS-No. 72-S161-19. *Farm Program Administration.* Hearing before the Ad Hoc Subcommittee on Farm Program Administration of the Senate Committee on Agriculture and Forestry. July 6, 1972.

U.S. Government Printing Office. CIS-No. 73-H521-4. *Elimination of Cigarette Racketeering.* Hearings before Subcommittee No. 1 of the House Committee on the Judiciary. September 28, 1972.

U.S. Government Printing Office. CIS-No. 73-H161-8. *Review of Food, Agricultural, and Farm Credit Legislation.* Hearings before the House Committee on Agriculture. January 29 and 30, 1973; February 5, 6, and 22, 1973

U.S. Government Printing Office. CIS-No. 74-H161-22. *Miscellaneous (H.R. 1952, H.R. 2933, H.R. 9138, H.R. 4612, H.R. 9295, S. 2491).* Hearings before the House Committee on Agriculture. March 5, 1973; May 29, 1973; July 10, 1973; July 10, 1973; July 17, 1973; December 13, 1973.

U.S. Government Printing Office. CIS-No. 73-H161-15. *Amend Tobacco Marketing Quota Provisions (H.R. 6485, H.R. 6799).* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. April 12, 1973.

U.S. Government Printing Office. CIS-No. 73-S161-9. *Tobacco Marketing Quotas (H.R. 6485, S. 1533).* Hearing before the Subcommittee on Agricultural Production, Marketing, and Stabilization of Prices of the Senate Committee on Agriculture and Forestry. April 13, 1973.

U.S. Government Printing Office. CIS-No. 74-H161-2. *Suspension of Public Law 480 Barter Program for Tobacco.* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. May 22, 1973.

U.S. Government Printing Office. CIS-No. 73-H501-30. *Little Cigars (H.R. 7482, S. 1165, H.R. 3828).* Hearings before the House Committee on Interstate and Foreign Commerce. May 22, 23, and 24, 1973.

U.S. Government Printing Office. CIS-No. 73-H781-29. *Trade Reform (Part 14) (H.R. 6767).* Hearings before the House Committee on Ways and Means. June 12, 13, 14, and 15, 1973.

U.S. Government Printing Office. CIS-No. 74-H161-24. *Increase in Tobacco Marketing Quotas.* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. January 22, 1974.

U.S. Government Printing Office. CIS-No. 75-H161-10. *Miscellaneous (H.R. 13267, H.R. 6468, H.R. 9054, H.R. 7954, S. 3801, H.R. 16857).* Hearings before the House Committee on Agriculture. March 21, 1974; May 7, 1974; July 9, 1974; September 19, 1974; September 30, 1974.

U.S. Government Printing Office. CIS-No. 74-H161-38. *Emergency Support Level Increases for Flue Cured Tobacco (H.R. 16056).* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. July 23, 1974.

U.S. Government Printing Office. CIS-No. 75-S161-5. *Tobacco Price Supports (H.R. 17506).* Hearings before the Subcommittee on Agricultural Production, Marketing, and Stabilization of Prices of the Senate Committee on Agriculture and Forestry. December 10 and 12, 1974.

U.S. Government Printing Office. CIS-No. 76-H161-12. *Miscellaneous (S. 435, H.R. 6994, H.R. 6403, H.R. 1502, H.R. 2343, H.R. 11126).* Hearings before the House Committee on Agriculture. April 17, 1975; May 20, 1975; July 28, 1975; September 11, 1975; September 25, 1975; December 18, 1975.

U.S. Government Printing Office. CIS-No. 75-S161-24. *Transfer of Flue-Cured Tobacco Acreage Allotments (S. 700).* Hearing before the Subcommittee on Agricultural Production, Marketing, and Stabilization of Prices of the Senate Committee on Agriculture and Forestry. May 13, 1975.

U.S. Government Printing Office. CIS-No. 76-H161-4. *Tobacco Program.* Hearings before the Subcommittee on Tobacco of the House Committee on Agriculture. June 12, 13, and 20 1975; July 10, 11, and 18, 1975; August 13, 1975.

U.S. Government Printing Office. CIS-No. 76-H161-20. *Flue-Cured Tobacco Leasing and Transfer (S. 700).* Hearings before the Subcommittee on Tobacco of the House Committee on Agriculture. February 4 and 5, 1976.

U.S. Government Printing Office. CIS-No. 76-S541-49. *Cigarette Smoking and Disease, 1976 (S. 2902).* Hearings before the Subcommittee on Health of the Senate Committee on Labor and Public Welfare. February 19, 1976; March 24, 1976; May 27, 1976.

U.S. Government Printing Office. CIS-No. 78-H161-18. *Leasing of Flue-Cured Tobacco Marketing Quotas (H.R. 3416).* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. March 15, 1977.

U.S. Government Printing Office. CIS-No. 77-S161-17. *Problems of Flue-Cured Tobacco Farmers.* Hearing before the Subcommittee on Agricultural Production, Marketing, and Stabilization of Prices of the Senate Committee on Agriculture, Nutrition, and Forestry. March 30, 1977.

U.S. Government Printing Office. CIS-No. 78-H161-6. *Economic Value of Present Tobacco Program.* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. October 6, 1977.

U.S. Government Printing Office. CIS-No. 78-S521-23. *Racketeering in the Sale and Distribution of Cigarettes (S. 1487).* Hearing before the Subcommittee on Criminal Laws and Procedures of the Senate Committee on the Judiciary. October 21, 1977.

U.S. Government Printing Office. CIS-No. 78-H501-75. *Antismoking Initiatives of the Department of Health, Education, and Welfare.* Hearing before the Subcommittee on Health and the Environment of the House Committee on Interstate and Foreign Commerce. February 15, 1978.

U.S. Government Printing Office. CIS-No. 79-H521-10. *Cigarette Bootlegging.* Hearings before the Subcommittee on Crime of the House Committee on the Judiciary. February 28, 1978; March 8, 1978; April 19, 1978.

U.S. Government Printing Office. CIS-No. 78-H781-48. *Miscellaneous Measures to Discourage Cigarette Smuggling (H.R. 9667, H.R. 9722, H.R. 9733, H.R. 9763, H.R. 9905, H.R. 10066, H.R. 10579, H.R. 11152).* Hearing before the Subcommittee on Miscellaneous Revenue Measures of the House Committee on Ways and Means. March 21, 1978.

U.S. Government Printing Office. CIS-No. 79-S411-14. *Disease Prevention and Health Promotion Act of 1978 (S. 3115).* Hearings before the Subcommittee on Health and Scientific Research of the Senate Committee on Human Resources. May 25, 1978; June 7 and 9, 1978.

U.S. Government Printing Office. CIS-No. 79-H161-8. *Economic Impact of Tobacco Program.* Hearings before the Subcommittee on Tobacco of the House Committee on Agriculture. July 21, 1978; August 4, 1978; September 15, 1978.

U.S. Government Printing Office. CIS-No. 79-H161-6. *Effects of Smoking on Nonsmokers.* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. September 7, 1978.

U.S. Government Printing Office. CIS-No. 79-H401-11. *Quality of Scientific Evidence in FDA Regulatory Decisions (The Adoption of an Antismoking Warning in Oral Contraceptive Pill Labeling).* Hearing before the Subcommittee on Intergovernmental Relations and Human Resources of the House Committee on Government Operations. October 4, 1978.

U.S. Government Printing Office. CIS-No. 79-H501-30. *Cigarette Smoking and Health – Update 1978.* Hearings before the Subcommittee on Oversight and Investigations of the House Committee on Interstate and Foreign Commerce. October 5 and 6, 1978.

U.S. Government Printing Office. CIS-No. 79-S261-10. *Smoking Deterrence Act of 1978 (S. 3118).* Hearings before the Subcommittee for Consumers on the Senate Committee on Commerce, Science, and Transportation. October 23 and 24, 1978.

U.S. Government Printing Office. CIS-No. 79-H161-13. *Five-Day Selling Week for Flue-Cured Tobacco.* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. February 15, 1979.

U.S. Government Printing Office. CIS-No. 79-H161-25. *Flue-Cured Tobacco Price Support Program for 1979 Marketing Year.* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. July 31, 1979.

U.S. Government Printing Office. CIS-No. 80-H161-17. *General Tobacco Issues in Kentucky.* Hearing before the Subcommittee on Tobacco of the House Committee on Agriculture. February 1, 1980.

U.S. Government Printing Office. CIS-No. 80-H781-48. *President's Cash Management Initiatives in the Fiscal Year 1981 Budget.* Hearings before the House Committee on Ways and Means. February 26, 1980; March 10, 1980.

U.S. Government Printing Office. CIS-No. 82-H361-29. *Cigarette Advertising and the HHS Anti-Smoking Campaign.* Hearing before the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce. June 25, 1981.

U.S. Government Printing Office. CIS-No. 82-H161-3. *Limit Nonquota Tobacco in Quota Areas (H.R. 3179, H.R. 3277).* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. July 15, 1981.

U.S. Government Printing Office. CIS-No. 82-H161-48. *Tobacco Price-Support Program.* Hearings before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. February 1, 11, 12, 15, 16, and 22, 1982; March 6, 8, and 9, 1982; April 3, 1982.

U.S. Government Printing Office. CIS-No. 82-H361-85. *Comprehensive Smoking Prevention Education Act (H.R. 5653, H.R. 4957).* Hearings before the Subcommittee on Health and Environment of the House Committee on Energy and Commerce. March 5, 11, and 12, 1982.

U.S. Government Printing Office. CIS-No. 82-S161-14. *Oversight on the Tobacco Price Support Program.* Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. March 15, 1982.

U.S. Government Printing Office. CIS-No. 82-S541-54. *Comprehensive Smoking Prevention Education Act of 1981 (S. 1929).* Hearing before the Senate Committee on Labor and Human Resources. March 16, 1982.

U.S. Government Printing Office. CIS-No. 82-S261-62. *Comprehensive Smoking Prevention Education Act of 1981 (S. 1929).* Hearing before the Senate Committee on Commerce, Science, and Transportation. May 10, 1982.

U.S. Government Printing Office. CIS-No. 83-S261-5. *FTC's Authority over Deceptive Advertising.* Hearing before the Subcommittee for Consumers of the Senate Committee on Commerce, Science, and Transportation. July 22, 1982.

U.S. Government Printing Office. CIS-No. 83-H161-6. *Review of Tobacco Price Support Program Costs.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. October 7, 1982.

U.S. Government Printing Office. CIS-No. 83-H161-25. *Review of Tobacco Price Support Program.* Hearings before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. February 25, 1983; March 18 and 25, 1983; April 13, 14, and 15, 1983.

U.S. Government Printing Office. CIS-No. 83-H361-49. *Smoking Prevention Education Act (H.R. 1824).* Hearings before the Subcommittee on Health and Environment of the House Committee on Energy and Commerce. March 9 and 17, 1983.

U.S. Government Printing Office. CIS-No. 83-H361-65. *Cigarette Safety Act (H.R. 1880).* Hearing before the Subcommittee on Health and Environment of the House Committee on Energy and Commerce. March 21, 1983.

U.S. Government Printing Office. CIS-No. 83-S541-31. *Smoking Prevention Health and Education Act of 1983 (S. 772, S. 1116).* Hearings before the Senate Committee on Labor and Human Resources. May 5 and 12, 1983.

U.S. Government Printing Office. CIS-No. 83-S161-28. *Proposed Changes in the Federal Tobacco Program.* Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. June 14, 1983.

U.S. Government Printing Office. CIS-No. 83-S141-14. *Home Fire Deaths: A Preventable Tragedy.* Hearing before the Senate Special Committee on Aging. July 28, 1983.

U.S. Government Printing Office. CIS-No. 84-H161-54. *Review of Export Promotion Credit Programs.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. March 7, 1984.

U.S. Government Printing Office. CIS-No. 84-S401-39. *Cigarette Safety Study Act (S. 1935).* Hearing before the Senate Committee on Governmental Affairs. May 10, 1984.

U.S. Government Printing Office. CIS-No. 85-H161-23. *Review of the Tobacco Seed and Plant Exportation Act.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. September 12, 1984.

U.S. Government Printing Office. CIS-No. 86-H781-12. *User Fees, Revenue Proposals Contained in President Reagan's 1986 Budget, and Other Revenue Measures.* Hearings before the House Committee on Ways and Means. June 19 and 20, 1985.

U.S. Government Printing Office. CIS-No. 86-H361-5. *Tobacco Issues (H.R. 760, H.R. 2950, H.R. 3078, H.R. 2835).* Hearings before the Subcommittee on Health and Environment of the Senate Committee on Energy and Commerce June 24, 1985; July 26, 1985.

U.S. Government Printing Office. CIS-No. 86-H161-5. *Tobacco Equalization Act of 1985 (H.R. 2600).* Joint Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture and the Subcommittee on Select Revenue Measures of the House Committee on Ways and Means. July 18, 1985.

U.S. Government Printing Office. CIS-No. 85-S161-29. *Tobacco Program Improvement Act of 1985 (S. 1418).* Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. July 22, 1985.

U.S. Government Printing Office. CIS-No. 86-S361-11. *Expiring Excise Tax Provisions.* Hearing before the Subcommittee on Taxation and Debt Management of the Senate Committee on Finance. September 10, 1985.

U.S. Government Printing Office. CIS-No. 86-S361-53. *Expiring Cigarette Excise Tax Provisions: II.* Hearing before the Subcommittee on Taxation and Debt Management of the Senate Committee on Finance. September 16, 1985.

U.S. Government Printing Office. CIS-No. 86-S401-34. *Non-Smokers Rights Act of 1985 (S. 1440).* Hearings before the Subcommittee on Civil Service, Post Office, and General Services of the Senate Committee on Governmental Affairs. September 30, 1985; October 1 and 2, 1985.

U.S. Government Printing Office. CIS-No. 86-H161-18. *Review of Tobacco Quota Referendum; Agricultural Marketing Service Investigation of Illegal Seed Exports; and Problems Related to Nonauction Warehouse Sales of Tobacco.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. November 1, 1985.

U.S. Government Printing Office. CIS-No. 86-S361-89. *Proposals Relating to Excise Taxes.* Hearing before the Senate Committee on Finance. April 21, 1986.

U.S. Government Printing Office. CIS-No. 87-H161-13. *Review the Status of Regulations Relating to Certification of Pesticides Used on Imported Tobacco.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. April 22, 1986.

U.S. Government Printing Office. CIS-No. 87-H161-22. *Effects of Balanced Budget and Emergency Deficit Control Act of 1985 on the Tobacco and Peanut Price Support Programs; Determination of 1986 Flue-Cured and Burley Quotas; and the Issue of Nonauction Sales.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. May 8, 1986.

U.S. Government Printing Office. CIS-No. 87-H361-32. *Designation of Smoking Areas in Federal Buildings (H.R. 4488, H.R. 4546).* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. June 12 and 27, 1986.

U.S. Government Printing Office. CIS-No. 87-H361-65. *Advertising of Tobacco Products (H.R. 4972).* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. July 18, 1986; August 1, 1986.

U.S. Government Printing Office. CIS-No. 87-H701-40. *Residential Radon Contamination and Indoor Quality Research Needs.* Hearing before the Subcommittee on Natural Resources, Agriculture Research, and Environment of the House Committee on Science and Technology. September 17, 1986.

U.S. Government Printing Office. CIS-No. 87-H161-38. *Economic Conditions Affecting Tobacco and Peanut Producers.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. March 23, 1987.

U.S. Government Printing Office. CIS-No. 88-H161-6. *Dark Air-Cured and Dark Fire-Cured Tobacco Quotas.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. April 1, 1987.

U.S. Government Printing Office. CIS-No. 88-H361-9. *Health Protection Act of 1987 (H.R. 1272, H.R. 1532).* Hearing before the Subcommittee on Transportation, Tourism, and Hazardous Materials of the House Committee on Energy and Commerce. April 3, 1987.

U.S. Government Printing Office. CIS-No. 88-H361-10. *FTC Nicotine Program.* Hearing before the Subcommittee on Transportation, Tourism, and Hazardous Materials of the House Committee on Energy and Commerce. May 7, 1987.

U.S. Government Printing Office. CIS-No. 88-H161-9. *Review the Pesticide Certification Amendment to Determine Its Effectiveness.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. June 11, 1987.

U.S. Government Printing Office. CIS-No. 89-H781-6. *Revenue Increase Options, Part 1 (H. Con. Res. 93, H.R. 1005).* Hearings before the House Committee on Ways and Means. July 7, 8, and 9, 1987.

U.S. Government Printing Office. CIS-No. 89-H781-7. *Revenue Increase Options, Part 2 (H. Con. Res. 93, H.R. 1005).* Hearing before the House Committee on Ways and Means. July 15, 1987.

U.S. Government Printing Office. CIS-No. 88-S361-25. *Revenue Raising Options Required under the FY88 Budget Resolution, Part 1.* Hearings before the Senate Committee on Finance. July 15 and 16, 1987.

U.S. Government Printing Office. CIS-No. 88-H361-91. *Tobacco Advertising (H.R. 1272, H.R. 1532).* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. July 27 and 28, 1987.

U.S. Government Printing Office. CIS-No. 88-H361-77. *Effects on Consumers of Tobacco Use (H.R. 2376).* Hearing before the Subcommittee on Commerce, Consumer Protection, and Competitiveness of the House Committee on Energy and Commerce. September 16, 1987.

U.S. Government Printing Office. CIS-No. 88-H641-22. *To Ban Smoking on Airline Aircraft (H.R. 432, H.R. 2376, H.R. 3018).* Hearing before the Subcommittee on Aviation of the House Committee on Public Works and Transportation. October 7, 1987.

U.S. Government Printing Office. CIS-No. 89-H361-107. *Cigarettes: Advertising, Testing, and Labeling.* Hearings before the Subcommittee on Transportation, Tourism, and Hazardous Materials of the House Committee on Energy and Commerce. May 4, 1988; June 8 and 29, 1988.

U.S. Government Printing Office. CIS-No. 89-H161-19. *Review of Imported Tobacco Issues.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. May 25, 1988.

U.S. Government Printing Office. CIS-No. 89-H161-20. *Review of Exported Tobacco Issues.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. June 15, 1988.

U.S. Government Printing Office. CIS-No. 89-H761-1. *Veterans' Canteen Service.* Hearing before the Subcommittee on Oversight and Investigations of the House Committee on Veterans' Affairs. June 23, 1988.

U.S. Government Printing Office. CIS-No. 89-H361-16. *Health Consequences of Smoking: Nicotine Addiction.* Hearing before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. July 29, 1988.

U.S. Government Printing Office. CIS-No. 89-H161-46. *Review of the U.S. Department of Agriculture's Change in Procedure Concerning Sales of Commodities Through the Export Credit Guarantee Program and the Intermediate Export Credit Guarantee Program.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. October 6, 1988.

U.S. Government Printing Office. CIS-No. 89-H161-52. *Investigation of the U.S. Department of Agriculture's Export Credit Guarantee Program.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. March 1, 1989.

U.S. Government Printing Office. CIS-No. 89-H161-58. *Review of the U.S. Department of Agriculture's Export Credit Guarantee Programs Relating to the U.S. Tobacco Program.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. June 4, 1989.

U.S. Government Printing Office. CIS-No. 90-H641-5. *To Ban Smoking on Airline Aircraft.* Hearing before the Subcommittee on Aviation of the House Committee on Public Works and Transportation. June 22, 1989.

U.S. Government Printing Office. CIS-No. 90-H361-9. *Tobacco Issues (Part 1).* Hearings before the Subcommittee on Transportation and Hazardous Materials of the House Committee on Energy and Commerce. July 25, 1989; September 13, 1989.

U.S. Government Printing Office. CIS-No. 89-H161-59. *Review of the U.S. Department of Agriculture's Transfer of No Net Cost Funds Collected Pursuant to the Budget Deficit Reduction Act.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. August 2, 1989.

U.S. Government Printing Office. CIS-No. 90-H361-54. *Tobacco Issues (Part 2).* Hearings before the Subcommittee on Transportation and Hazardous Materials of the House Committee on Energy and Commerce. November 16, 1989; March 1, 1990.

U.S. Government Printing Office. CIS-No. 90-S541-33. *Tobacco Product Education and Health Protection Act of 1990, Part 1 (S. 1883).* Hearing before the Senate Committee on Labor and Human Resources. February 20, 1990.

U.S. Government Printing Office. CIS-No. 90-S541-56. *Tobacco Product Education and Health Protection Act of 1990, Part 2 (S. 1883).* Hearing before the Senate Committee on Labor and Human Resources. April 3, 1990.

U.S. Government Printing Office. CIS-No. 91-H361-26. *Tobacco Issues (Part 3).* Hearing before the Subcommittee on Transportation and Hazardous Materials of the House Committee on Energy and Commerce. April 30, 1990.

U.S. Government Printing Office. CIS-No. 91-S541-7. *Smoking and World Health.* Hearing before the Senate Committee on Labor and Human Resources. May 4, 1990.

U.S. Government Printing Office. CIS-No. 90-H361-71. *Fire Safe Cigarettes (H.R. 293, H.R. 673).* Hearing before the Subcommittee on Commerce, Consumer Protection, and Competitiveness of the House Committee on Energy and Commerce. May 16, 1990.

U.S. Government Printing Office. CIS-No. 91-H361-27. *Tobacco Control and Marketing (H.R. 5041).* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. May 17, 1990; July 12, 1990.

U.S. Government Printing Office. CIS-No. 91-S361-15. *Health Impact, Costs of Smoking.* Hearing before the Senate Committee on Finance. May 24, 1990.

U.S. Government Printing Office. CIS-No. 92-H161-2. *Review of the Tobacco Seed and Plant Exportation Act.* Hearing before the Subcommittee on Tobacco and Peanuts of the House Committee on Agriculture. July 25, 1991.

U.S. Government Printing Office. CIS-No. 93-S261-16. *Tobacco Product Education and Health Protection Act of 1991, S. 1088 (S. 1088).* Hearing before the Subcommittee on Consumer of the Senate Committee on Commerce, Science, and Transportation. November 14, 1991.

U.S. Government Printing Office. CIS-No. 93-H641-19. *General Services Administration Issues (Smoking Policy in Federal Buildings), (Alternative Rules Program for the Federal Fleet), (Child Care in Federal Buildings).* Hearing before the Subcommittee on Public Buildings and Grounds of the House Committee on Public Works and Transportation. February 23, 1993.

U.S. Government Printing Office. CIS-No. 93-H641-31. *To Prohibit Smoking in Federal Buildings (H.R. 881).* Hearings before the Subcommittee on Public Buildings and Grounds of the House Committee on Public Works and Transportation. March 11, 1993; April 22, 1993.

U.S. Government Printing Office. CIS-No. 93-H161-49. *Review of the U.S. Environmental Protection Agency's Tobacco Smoke Study.* Hearing before the Subcommittee on Specialty Crops and Natural Resources of the House Committee on Agriculture. July 21, 1993.

U.S. Government Printing Office. CIS-No. 94-H361-9. *Environmental Tobacco Smoke.* Hearing before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. July 21, 1993.

U.S. Government Printing Office. CIS-No. 94-H161-21. *Review of the Burley Tobacco Program.* Hearing before the Subcommittee on Specialty Crops and Natural Resources of the House Committee on Agriculture. October 29, 1993.

U.S. Government Printing Office. CIS-No. 94-H781-26. *Financing Provisions of the Administration's Health Security Act and Other Health Reform Proposals (H.R. 2534).* Hearing before the House Committee on Ways and Means. November 16, 18, and 19, 1993.

U.S. Government Printing Office. CIS-No. 94-H361-82. *Environmental Tobacco Smoke (Part 2) (H.R. 3434).* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. February 7, 1994; March 17, 1994.

U.S. Government Printing Office. CIS-No. 94-H161-43. *Outlook for the Tobacco Market and Flue-Cured Tobacco Program.* Hearing before the Subcommitee on Specialty Crops and Natural Resources of the House Committee on Agriculture. February 21, 1994.

U.S. Government Printing Office. CIS-No. 95-H361-21. *Regulation of Tobacco Products (Part 1) (H.R. 2147).* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. March 25, 1994; April 14, 1994.

U.S. Government Printing Office. CIS-No. 95-H361-6. *Fire Safe Cigarettes (H.R. 3885).* Hearing before the Subcommittee on Commerce, Consumer Protection, and Competitiveness of the House Committee on Energy and Commerce. April 20, 1994.

U.S. Government Printing Office. CIS-No. 94-S361-32. *Tax Treatment of Organizations Providing Health Care Services, and Excise Taxes on Tobacco, Guns and Ammunition.* Hearing before the Senate Committee on Finance. April 28, 1994.

U.S. Government Printing Office. CIS-No. 95-H361-22. *Regulation of Tobacco Products (Part 2).* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. April 28, 1994; May 17 and 26, 1994.

U.S. Government Printing Office. CIS-No. 94-S321-25. *Assessing the Effects of Environmental Tobacco Smoke (S. 1680, S. 262, H.R. 3434).* Hearing before the Subcommittee on Clean Air and Nuclear Regulation of the Senate Committee on Environment and Public Works. May 11, 1994.

U.S. Government Printing Office. CIS-No. 95-H641-6. *Airliner Cabin Air Quality (H.R. 2985).* Hearing before the Subcommittee on Aviation of the House Committee on Public Works and Transportation. May 18, 1994.

U.S. Government Printing Office. CIS-No. 95-H161-12. *Tobacco Program.* Hearing before the Subcommittee on Specialty Crops and Natural Resources of the House Committee on Agriculture. June 11, 1994.

U.S. Government Printing Office. CIS-No. 95-H361-38. *Regulation of Tobacco Products (Part 3).* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. June 21 and 23, 1994.

U.S. Government Printing Office. CIS-No. 95-H361-41. *Health Effects of Smokeless Tobacco.* Hearing before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. November 29, 1994.

U.S. Government Printing Office. CIS-No. 97-H751-28. *H.R. 969, the Airline Cabin Air Quality Act of 1995 (H.R. 969).* Hearing before the Subcommittee on Aviation of the House Committee on Transportation and Infrastructure. July 16, 1996.

U.S. Government Printing Office. CIS-No. 98-H271-11. *Reauthorization of the Substance Abuse and Mental Health Services Act.* Hearing before the Subcommittee on Health and Environment of the House Committee on Commerce. March 18, 1997.

U.S. Government Printing Office. CIS-No. 98-S521-17. *Review of the Global Tobacco Settlement.* Hearings before the Senate Committee on Judiciary. June 26, 1997 and July 16 and 30, 1997.

U.S. Government Printing Office. CIS-No. 99-S261-19. *Global Settlement of Tobacco Litigation.* Hearing before the Senate Committee on Commerce, Science, and Transportation. July 29, 1997.

U.S. Government Printing Office. CIS-No. 98-S541-2. *Tobacco Settlement: Public Health or Public Harm? Part 1.* Hearing before the Senate Committee on Labor and Human Resources. September 3, 1997.

U.S. Government Printing Office. CIS-No. 99-S161-11. *Examination of Implications of the Proposed Tobacco Settlement.* Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. September 11, 1997.

U.S. Government Printing Office. CIS-No. 99-S261-30. *Tobacco Advertising and Children.* Hearing before the Senate Committee on Commerce, Science, and Transportation. September 16, 1997.

U.S. Government Printing Office. CIS-No. 99-S161-8. *Implications of the Proposed Tobacco Settlement.* Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. September 18, 1997.

U.S. Government Printing Office. CIS-No. 98-S541-3. *Administration's Position on the Tobacco Settlement, Part 2.* Hearing before the Senate Committee on Labor and Human Resources. September 25, 1997.

U.S. Government Printing Office. CIS-No. 98-S541-4. *Public Health Aspects of the Tobacco Settlement, Part 3.* Hearing before the Senate Committee on Labor and Human Resources. September 30, 1997.

U.S. Government Printing Office. CIS-No. 98-S411-11. *Indian Provisions Contained in the Tobacco Settlement between the Attorneys General and the Tobacco Industry.* Hearing before the Senate Committee on Indian Affairs. October 8, 1997.

U.S. Government Printing Office. CIS-No. 99-S261-38. *Public Health Benefits of a Global Settlement of the Tobacco Litigation.* Hearing before the Senate Committee on Commerce, Science, and Transportation. October 9, 1997.

U.S. Government Printing Office. CIS-No. 98-H751-25. *H.R. 2118, a Bill to Prohibit Smoking in Federal Buildings (H.R. 2118).* Hearing before the Subcommittee on Public Buildings and Economic Development of the House Committee on Transportation and Infrastructure. October 23, 1997.

U.S. Government Printing Office. CIS-No. 98-S541-9. *Public Forum on Youth and Tobacco: Breaking the Cycle.* Hearing before the Subcommittee on Public Health and Safety of the Senate Committee on Labor and Human Resources. October 27, 1997.

U.S. Government Printing Office. CIS-No. 98-S521-32. *Antitrust Perspective on the Global Tobacco Settlement.* Hearing before the Subcommittee on Antitrust, Business Rights, and Competition of the Senate Committee on the Judiciary. October 29, 1997.

U.S. Government Printing Office. CIS-No. 98-H271-22. *Tobacco Settlement: Views of the Administration and the State Attorneys General.* Hearing before the House Committee on Commerce. November 13, 1997.

U.S. Government Printing Office. CIS-No. 98-H271-28. *Tobacco Settlement, Part 1 (H.R. 2938).* Hearings before the Subcommittee on Health and the Environment of the House Committee on Commerce. December 8 and 9, 1997.

U.S. Government Printing Office. CIS-No. 99-H521-12. *Attorneys' Fees and the Tobacco Settlement (H.R. 2740).* Hearing before the Subcommittee on Courts and Intellectual Property of the House Committee on Judiciary. December 10, 1997.

U.S. Government Printing Office. CIS-No. 98-H271-31. *Tobacco Settlement: Views of Tobacco Industry Executives.* Hearing before the House Committee on Commerce. January 29, 1998.

U.S. Government Printing Office. CIS-No. 98-H161-13. *Review the Impact of the Proposed Tobacco Settlement on Producers.* Hearing before the Subcommittee on Risk Management, and Specialty Crops of the House Committee on Agriculture. February 3, 1998.

U.S. Government Printing Office. CIS-No. 99-H521-13. *Civil Liability Portions of the Proposed Tobacco Settlement.* Hearing before the House Committee on the Judiciary. February 5, 1998.

U.S. Government Printing Office. CIS-No. 98-S521-52. *Cigarette Advertising and the First Amendment to the Constitution (S. 1530).* Hearing before the Senate Committee on Judiciary. February 10, 1998.

U.S. Government Printing Office. CIS-No. 98-S541-19. *Tobacco Settlement, Part 4.* Hearing before the Senate Committee on Labor and Human Resources. February 10, 1998.

U.S. Government Printing Office. CIS-No. 98-S411-14. *Tobacco Settlement Legislation (S. 1414, S. 1415, S. 1530).* Hearing before the Senate Committee on Indian Affairs. February 12, 1998.

U.S. Government Printing Office. CIS-No. 98-S541-21. *State and Local Views of Proposed National Tobacco Policy.* Hearing before the Senate Committee on Labor and Human Resources. February 19, 1998.

U.S. Government Printing Office. CIS-No. 98-S541-20. *Tobacco Settlement, Part 5 (S. 1648).* Hearing before the Senate Committee on Labor and Human Resources. February 24, 1998.

U.S. Government Printing Office. CIS-No. 2000-S261-19. *Tobacco (CEOs).* Hearing before the Senate Committee on Commerce, Science, and Transportation. February 24, 1998.

U.S. Government Printing Office. CIS-No. 98-H271-34. *Tobacco Settlement, Part 2.* Hearing before the Subcommittee on Telecommunications, Trade, and Consumer Protection of the House Committee on Commerce. February 25, 1998.

U.S. Government Printing Office. CIS-No. 99-S261-26. *Liability Issues Regarding the Global Settlement of Tobacco Litigation.* Hearing before the Senate Committee on Commerce, Science, and Transportation. February 26, 1998.

U.S. Government Printing Office. CIS-No. 99-S261-61. *Tobacco.* Hearing before the Senate Committee on Commerce, Science, and Transportation. March 3, 1998.

U.S. Government Printing Office. CIS-No. 98-H271-45. *Tobacco Settlement, Part 3.* Hearings before the Subcommittee on Health and the Environment of the House Committee on Commerce. March 5 and 19, 1998.

U.S. Government Printing Office. CIS-No. 99-S521-13. *PROTECT Act: Civil Liability Provisions (S. 1530).* Hearings before Senate Committee on the Judiciary. March 6 and 12, 1998.

U.S. Government Printing Office. CIS-No. 99-S261-25. *Tobacco Proposals.* Hearing before the Senate Committee on Commerce, Science, and Transportation. March 11, 1998.

U.S. Government Printing Office. CIS-No. 99-S261-29. *Tobacco Legislation and the Food and Drug Administration and Smokeless Tobacco Issues in the Proposed Settlement (S. 1648).* Hearing before the Senate Committee on Commerce, Science, and Transportation. March 17, 1998.

U.S. Government Printing Office. CIS-No. 99-S261-41. *Tobacco Legislation.* Hearing before the Senate Committee on Commerce, Science, and Transportation. March 19, 1998.

U.S. Government Printing Office. CIS-No. 99-S261-24. *Tobacco Settlement Overview.* Hearing before the Senate Committee on Commerce, Science, and Transportation. March 24, 1998.

U.S. Government Printing Office. CIS-No. 99-S761-3. *Tobacco-Related Illnesses and VA Compensation.* Hearing before the Senate Committee on Veterans' Affairs. March 31, 1998.

U.S. Government Printing Office. CIS-No. 99-S321-2. *Environmental Tobacco Smoke.* Hearing before the Senate Committee on Environment and Public Works. April 1, 1998.

U.S. Government Printing Office. CIS-No. 99-S521-41. *Raising Tobacco Prices: New Opportunities for the Black Market? (S. 1415).* Hearings before the Senate Committee on the Judiciary. April 30, 1998; May 12 and 13, 1998.

U.S. Government Printing Office. CIS-No. 99-H161-30. *Review of the Federal Crop Insurance Program.* Hearing before the Subcommittee on Risk Management, Research, and Specialty Crops of the House Committee on Agriculture. May 3, 1999.

U.S. Government Printing Office. CIS-No. 2001-S521-26. *Big Government Lawsuits: Are Policy-Driven Lawsuits in the Public Interest?* Hearing before the Senate Committee on Judiciary. November 2, 1999.

U.S. Government Printing Office. CIS-No. 2000-H161-9. *Review of the Federal Tobacco Program.* Hearing before the Subcommittee on Risk Management, Research, and Specialty Crops of the House Committee on Agriculture. March 31, 2000.

U.S. Government Printing Office. CIS-No. 2004-S261-40. *Effective Tobacco Reduction Programs and the Use of Tobacco Revenues from the Settlements, for This Purpose.* Hearing before the Senate Committee on Commerce, Science, and Transportation. October 5, 2000.

U.S. Government Printing Office. CIS-No. 2002-S521-39. *Department of Justice Oversight: Management of the Tobacco Litigation.* Hearing before the Senate Committee on Judiciary. September 5, 2001.

U.S. Government Printing Office. CIS-No. 2003-S401-25. *Tobacco's Deadly Secret: The Impact of Tobacco Marketing on Women and Girls.* Hearing before the Oversight of Government Management, Restructuring, and the District of Columbia Subcommittee of the Senate Committee on Governmental Affairs. May 14, 2002.

U.S. Government Printing Office. CIS-No. 2003-H161-5. *Review of Tobacco Buyout Proposals (H.R. 3940).* Hearing before the Subcommittee on Specialty Crops and Natural Resources of the House Committee on Agriculture. September 26, 2002.

U.S. Government Printing Office. CIS-No. 2003-H521-32. *Youth Smoking Prevention and State Revenue Enforcement Act (H.R. 1839).* Hearing before the Subcommittee on Courts, the Internet, and Intellectual Property of the House Committee on the Judiciary. May 1, 2003.

U.S. Government Printing Office. CIS-No. 2003-H361-41. *Can Tobacco Cure Smoking? A Review of Tobacco Harm Reduction.* Hearing before the Subcommittee on Commerce, Trade, and Consumer Protection of the House Committee on Energy and Commerce. June 3, 2003.

U.S. Government Printing Office. CIS-No. 2003-H401-161. *Potential Reduced Exposure/Reduced Risk Tobacco Products: An Examination of the Possible Public Health Impact and Regulatory Challenges.* Hearing before the House Committee on Government Reform. June 3, 2003.

U.S. Government Printing Office. CIS-No. 2003-H161-19. *Tobacco Quota Buyout (H.R. 140, H.R. 245).* Hearing before the House Committee on Agriculture. July 24, 2003.

U.S. Government Printing Office. CIS-No. 2004-S161-4. *Necessity of a Tobacco Quota Buyout: Why It Is Crucial to Rural Communities and the U.S. Tobacco Industry.* Hearing before the Subcommittee on Production and Price Competitiveness of the Senate Committee on Agriculture, Nutrition, and Forestry. April 13, 2004.

Climate Change

U.S. Government Printing Office. CIS-No. 80-S311-72. *Effects of Carbon Dioxide Buildup in the Atmosphere.* Hearing before the Senate Committee on Energy and Natural Resources. April 3, 1980.

U.S. Government Printing Office. CIS-No. 82-H701-15. *Carbon Dioxide and Climate: The Greenhouse Effect.* Joint Hearing before the Subcommittee on Investigations and Oversight of the House Committee on Science and Technology and the Subcommittee on Natural Resources, Agricultural Research, and Enviroment of the House Committee on Science and Technology. July 31, 1981.

U.S. Government Printing Office. CIS-No. 82-H701-86. *Carbon Dioxide and Climate: The Greenhouse Effect.* Joint Hearing before the Subcommittee on Investigations and Oversight of the House Committee on Science and Technology and the Subcommittee on Natural Resources, Agricultural Research, and Enviroment of the House Committee on Science and Technology. March 25, 1982.

U.S. Government Printing Office. CIS-No. 85-H701-34. *Carbon Dioxide and the Greenhouse Effect* . Joint Hearing before the Subcommittee on Investigations and Oversight of the House Committee on Science and Technology and the Subcommittee on Natural Resources, Agricultural Research, and Enviroment of the House Committee on Science and Technology. February 28, 1984.

U.S. Government Printing Office. CIS-No. 86-S321-17. *Global Warming.* Hearing before the Subcommittee on Toxic Substances and Environmental Oversight of the Senate Committee on the Environment and Public Works. December 10, 1985.

U.S. Government Printing Office. CIS-No. 86-S321-36. *Ozone Depletion, the Greenhouse Effect, and Climate Change.* Hearings before the Subcommittee on Environmental Pollution of the Senate Committee on the Environment and Public Works. June 10 and 11, 1986.

U.S. Government Printing Office. CIS-No. 87-S321-8. *Ozone Depletion, the Greenhouse Effect, and Climate Change, Part 2.* Joint Hearing before the Subcommittee on Environmental Protection of the Senate Committee on Environment and Public Works and the Subcommittee on Hazardous Wastes and Toxic Substances of the Senate Committee on Environment and Public Works. January 28, 1987.

U.S. Government Printing Office. CIS-No. 88-S261-10. *Global Environmental Change Research.* Hearing before the Subcommittee on Science, Technology, and Space of the Senate Committee on Commerce, Science, and Transportation. July 16, 1987.

U.S. Government Printing Office. CIS-No. 88-H701-47. *National Climate Program Act and Global Climate Change.* Joint Hearings before the Subcommittee on Natural Resources, Agriculture Research, and Environment of the House Committee on Science, Space, and Technology and the Subcommittee on International Scientific Cooperation of the House Committee on Science, Space, and Technology. July 22, 23, and 29, 1987; September 30, 1987.

U.S. Government Printing Office. CIS-No. 88-S311-32. *Greenhouse Effect and Global Climate Change.* Hearings before the Senate Committee on Energy and Natural Resources. November 9 and 10, 1987.

U.S. Government Printing Office. CIS-No. 88-H381-58. *Global Climate Changes: Greenhouse Effect.* Hearing before the Subcommittee on Human Rights and International Organizations of the House Committee on Foreign Affairs. March 10, 1988.

U.S. Government Printing Office. CIS-No. 89-S311-3. *Greenhouse Effect and Global Climate Change, Part 2.* Hearing before the Senate Committee on Energy and Natural Resources. June 23, 1988.

U.S. Government Printing Office. CIS-No. 89-H701-27. *Technologies for Remediating Climate Change.* Joint Hearing before the Subcommittee on Natural Resources, Agriculture Research, and Environment of the House Committee on Science, Space, and Technology and the Subcommittee on Science, Research, and Technology of the House Committee on Science, Space, and Technology. June 29, 1988.

U.S. Government Printing Office. CIS-No. 89-H361-109. *Energy Policy Implications of Global Warming.* Hearings before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce. July 7, 1988; September 22, 1988.

U.S. Government Printing Office. CIS-No. 89-S261-4. *Global Change Research (S. 2614).* Hearing before the Senate Committee on Commerce, Science, and Transportation. July 13, 1988.

U.S. Government Printing Office. CIS-No. 89-S311-26. *National Energy Policy Act of 1988 and Global Warming (S. 2667).* Hearings before the Senate Committee on Energy and Natural Resources. August 11, 1988; September 19 and 20, 1988.

U.S. Government Printing Office. CIS-No. 89-H441-25. *Implications of Global Warming for Natural Resources.* Hearings before the Subcommittee on Water and Power Resources of the House Committee on Interior and Insular Affairs. September 27, 1988; October 17, 1988.

U.S. Government Printing Office. CIS-No. 89-S161-19. *Potential Impact of Global Warming on Agriculture.* Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. December 1, 1988.

U.S. Government Printing Office. CIS-No. 89-H361-144. *Global Warming.* Hearings before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce. February 21, 1989; May 4, 1989.

U.S. Government Printing Office. CIS-No. 89-S261-32. *National Global Change Research Act of 1989 (S. 169).* Hearing before the Senate Committee on Commerce, Science, and Transportation. February 22, 1989.

U.S. Government Printing Office. CIS-No. 89-S321-14. *Policy Options for Stabilizing Global Climate.* Hearing before the Subcommittee on Environmental Protection of the Senate Committee on the Environment and Public Works. March 17, 1989.

U.S. Government Printing Office. CIS-No. 89-S261-46. *Global Change: An Ocean Perspective.* Hearing before the National Ocean Policy Study of the Senate Committee on Commerce, Science, and Transportation. April 11, 1989.

U.S. Government Printing Office. CIS-No. 90-H161-4. *Climate Change and Agriculture.* Joint Hearing before the Subcommittee on Department Operations, Research, and Foreign Agriculture of the House Committee on Agriculture and the Subcommittee on Forests, Family Farms, and Energy of the House Committee on Agriculture. April 19, 1989.

U.S. Government Printing Office. CIS-No. 89-S381-19. *International Environmental Agenda for the 101st Congress.* Hearing before the Senate Committee on Foreign Relations. April 20, 1989.

U.S. Government Printing Office. CIS-No. 89-S261-50. *Global Warming and CAFE Standards.* Hearing before the Subcommittee on the Consumer of the Senate Committee on Commerce, Science, and Transportation. May 2, 1989.

U.S. Government Printing Office. CIS-No. 89-H561-52. *Global Climate Change (H.R. 980).* Hearing before the Subcommittee on Oceanography and the Great Lakes of the House Committee on Merchant Marine and Fisheries. May 4, 1989.

U.S. Government Printing Office. CIS-No. 89-S261-48. *Climate Surprises.* Hearing before the Subcommittee on Science, Technology, and Space of the Senate Committee on Commerce, Science, and Transportation. May 8, 1989.

U.S. Government Printing Office. CIS-No. 90-S161-1. *Joint Hearing on the Potential Impact of Global Warming on the Third World, FY90, Special Hearing.* Joint Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry and the Subcommittee on Foreign Operations, Export Financing, and Related Programs Appropriations of the Senate Committee on Appropriations. May 10, 1989.

U.S. Government Printing Office. CIS-No. 89-S311-44. *Global Warming and Its Implications for California.* Hearing before the Senate Committee on Energy and Natural Resources. May 20, 1989.

U.S. Government Printing Office. CIS-No. 89-S311-69. *DOE's National Energy Plan and Global Warming.* Hearing before the Senate Committee on Energy and Natural Resources. July 26, 1989.

U.S. Government Printing Office. CIS-No. 90-H701-24. *Global Change Research Act of 1989 (H.R. 2984).* Joint Hearing before the Subcommittee on Natural Resources, Agriculture Research, and Environment of the House Committee on Science, Space, and Technology and the Subcommmittee on International Scientific Cooperation of the House Committee on Science, Space, and Technology. July 27, 1989.

U.S. Government Printing Office. CIS-No. 90-S321-1. *Responding to the Problem of Global Warming.* Hearing before the Subcommittee on Environmental Protection of the Senate Committee on the Environment and Public Works. August 10, 1989.

U.S. Government Printing Office. CIS-No. 90-H381-54. *Global Climate Change (H.R. 2984).* Hearing before the Subcommittee on Human Rights and International Organizations of the House Committee on Foreign Affairs. October 26, 1989.

U.S. Government Printing Office. CIS-No. 91-S161-10. *Global Climate Change Prevention Act of 1989: S. 1610 (S. 1610).* Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. November 6, 1989.

U.S. Government Printing Office. CIS-No. 90-S261-45. *Global Warming.* Hearing before the Senate Committee on Commerce, Science, and Transportation. November 14, 1989.

U.S. Government Printing Office. CIS-No. 90-S311-36. *National Energy Policy Act of 1989 and Federal Management Amendments of 1990 (S. 324, S. 2191).* Hearing before the Senate Committee on Energy and Natural Resources. April 5, 1990.

U.S. Government Printing Office. CIS-No. 91-H361-62. *Global Environment: A National Energy Strategy (H.R. 5521).* Hearing before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce. September 13, 1990.

U.S. Government Printing Office. CIS-No. 92-H361-26. *Global Climate Change and Greenhouse Emissions.* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. February 21, 1991; August 1, 1991.

U.S. Government Printing Office. CIS-No. 91-S321-25. *Global Warming and Other Environmental Consequences of Energy Strategies.* Hearings before the Subcommittee on Environmental Protection of the Senate Committee on the Environment and Public Works. March 13 and 20, 1991; April 26, 1991.

U.S. Government Printing Office. CIS-No. 92-S261-2. *Policy Implications of Greenhouse Warming.* Hearing before the Senate Committee on Commerce, Science, and Transportation. April 25, 1991.

U.S. Government Printing Office. CIS-No. 92-H701-31. *Technologies and Strategies for Addressing Global Warming.* Hearing before the House Committee on Science, Space, and Technology. July 17, 1991.

U.S. Government Printing Office. CIS-No. 92-S261-35. *Global Change Research: The Role of Clouds in Climate Change.* Hearing before the Senate Committee on Commerce, Science, and Transportation. October 7, 1991.

U.S. Government Printing Office. CIS-No. 92-H701-30. *Priorities in Global Climate Change Research.* Hearings before the Subcommittee on Science of the House Committee on Science, Space, and Technology. October 8 and 10, 1991.

U.S. Government Printing Office. CIS-No. 93-S261-27. *Global Change Research: Indicators of Global Warming and Solar Variability.* Hearing before the Senate Committee on Commerce, Science, and Transportation. February 27, 1992.

U.S. Government Printing Office. CIS-No. 92-H361-90. *Global Warming.* Hearing before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce. March 3, 1992.

U.S. Government Printing Office. CIS-No. 92-H361-86. *Strategies for Control of Greenhouse Emissions.* Hearing before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. March 19, 1992.

U.S. Government Printing Office. CIS-No. 93-S261-26. *Global Change Research: Global Warming and the Biosphere.* Hearing before the Senate Committee on Commerce, Science, and Transportation. April 9, 1992.

U.S. Government Printing Office. CIS-No. 92-J841-28. *CO2 Stabilization and Economic Growth.* Hearing before the Joint Economic Committee. April 28, 1992.

U.S. Government Printing Office. CIS-No. 92-H701-99. *U.S. Global Change Research Program.* Hearing before the Subcommittee on Environment of the House Committee on Science, Space, and Technology. May 5, 1992.

U.S. Government Printing Office. CIS-No. 92-S311-55. *Global Climate Change.* Hearings before the Senate Committee on Energy and Natural Resources. May 6 and 12, 1992.

U.S. Government Printing Office. CIS-No. 93-S261-19. *Global Change Research, Global Warming, and the Oceans.* Hearing before the Senate Committee on Commerce, Science, and Transportation. May 20, 1992.

U.S. Government Printing Office. CIS-No. 92-S311-43. *Global Climate Change and the Pacific Islands.* Hearing before the Senate Committee on Energy and Natural Resources. May 26, 1992.

U.S. Government Printing Office. CIS-No. 93-S381-7. *U.N. Framework Convention on Climate Change.* Hearing before the Senate Committee on Foreign Relations. September 18, 1992.

U.S. Government Printing Office. CIS-No. 93-H381-91. *Global Climate Change: Adequacy of the National Action Plan.* Hearing before the Subcommittee on Economic Policy, Trade, and Environment of the House Committee on Foreign Affairs. March 1, 1993.

U.S. Government Printing Office. CIS-No. 93-H361-38. *Global Warming (Part 1).* Hearings before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce. March 10, 1993; May 26, 1993.

U.S. Government Printing Office. CIS-No. 93-S311-21. *Science Concerning Global Climate Change.* Hearing before the Senate Committee on Energy and Natural Resources. March 30, 1993.

U.S. Government Printing Office. CIS-No. 93-H701-39. *Global Change Research Program: Key Scientific Uncertainties.* Hearing before the Subcommittee on Space of the House Committee on Science, Space, and Technology. March 30, 1993.

U.S. Government Printing Office. CIS-No. 93-H381-100. *Administration Views on Global Climate Change.* Hearing before the Subcommittee on Economic Policy, Trade, and Environment of the House Committee on Foreign Affairs. May 18, 1993.

U.S. Government Printing Office. CIS-No. 94-H701-5. *Global Change Research: Science and Policy.* Hearing before the House Committee on Science, Space, and Technology. May 19, 1993.

U.S. Government Printing Office. CIS-No. 93-S311-47. *National Action Plan for Reducing Greenhouse Gas Emissions, Part 1.* Hearing before the Senate Committee on Energy and Natural Resources. June 29, 1993.

U.S. Government Printing Office. CIS-No. 94-H361-51. *Global Warming (Part 2).* Hearings before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce. July 29, 1993; October 27, 1993; November 16, 1993.

U.S. Government Printing Office. CIS-No. 94-H361-29. *Global Climate Change and Air Pollutants.* Hearings before the Subcommittee on Health and the Environment of the House Committee on Energy and Commerce. August 4, 1993; October 26, 1993.

U.S. Government Printing Office. CIS-No. 94-S321-15. *National Action Plan for Global Climate Change.* Joint Hearing before the Senate Committee on the Environment and Public Works and the Subcommittee on Clean Air and Nuclear Regulation of the Senate Committee on the Environment and Public Works. October 25, 1993.

U.S. Government Printing Office. CIS-No. 94-S311-12. *National Action Plan for Reducing Greenhouse Gas Emissions.* Hearing before the Senate Committee on Energy and Natural Resources. October 28, 1993.

U.S. Government Printing Office. CIS-No. 94-H701-52. *Climate Change Action Plan and Assessment.* Hearing before the House Committee on Science, Space, and Technology. November 16, 1993.

U.S. Government Printing Office. CIS-No. 94-S311-27. *Role of Oceans in Global Climate Change.* Hearing before the Senate Committee on Energy and Natural Resources. March 8, 1994.

U.S. Government Printing Office. CIS-No. 94-S321-20. *Implementation of the Climate Change Action Plan.* Hearing before the Subcommittee on Clean Air and Nuclear Regulation of the Senate Committee on the Environment and Public Works. April 14, 1994.

U.S. Government Printing Office. CIS-No. 95-S311-9. *Energy Policy Act of 1992 and the President's Climate Change Action Plan.* Hearing before the Senate Committee on Energy and Natural Resources. May 10, 1994.

U.S. Government Printing Office. CIS-No. 95-S311-3. *Science Concerning Global Climate Change.* Hearing before the Senate Committee on Energy and Natural Resources. May 24, 1994.

U.S. Government Printing Office. CIS-No. 95-H361-34. *Global Warming (Part 3).* Hearing before the Subcommittee on Energy and Power of the House Committee on Energy and Commerce. October 6, 1994.

U.S. Government Printing Office. CIS-No. 95-H271-30. *International Global Climate Change Negotiations.* Hearings before the Subcommittee on Energy and Power of the House Committee on Commerce. March 21, 1995; May 19, 1995.

U.S. Government Printing Office. CIS-No. 96-H701-19. *Scientific Integrity and Public Trust: The Science behind Federal Policies and Mandates. Case Study 2--Climate Models and Projections of Potential Impacts of Global Climate Change.* Hearing before the Subcommittee on Energy and Environment of the House Committee on Science. November 16, 1995.

U.S. Government Printing Office. CIS-No. 97-H271-14. *Status of the International Global Climate Change Negotiations.* Hearings before the Subcommittee on Energy and Power of the House Committee on Commerce. June 19, 1996; September 26, 1996.

U.S. Government Printing Office. CIS-No. 97-S311-14. *Global Climate Change.* Hearing before the Senate Committee on Energy and Natural Resources. September 17, 1996.

U.S. Government Printing Office. CIS-No. 98-S321-8. *Global Climate Change.* Hearings before the Senate Committee on the Environment and Public Works. July 10 and 17, 1997.

U.S. Government Printing Office. CIS-No. 98-H271-29. *International Global Climate Change Negotiations.* Hearings before the Subcommittee on Energy and Power of the House Committee on Commerce. July 15, 1997; November 5, 1997.

U.S. Government Printing Office. CIS-No. 98-H461-29. *Global Climate Negotiations: Obligations of Developed and Developing Nations.* Hearing before the House Committee on International Relations. July 24, 1997.

U.S. Government Printing Office. CIS-No. 98-S311-21. *Climate Treaty.* Hearing before the Senate Committee on Energy and Natural Resources. September 30, 1997.

U.S. Government Printing Office. CIS-No. 98-H701-31. *Countdown to Kyoto, Parts I-III, Vol. 1.* Hearings before the Subcommittee on Energy and Environment of the House Committee on Science. October 7 and 9, 1997; November 6, 1997.

U.S. Government Printing Office. CIS-No. 98-H461-65. *Bonn to Kyoto: The Administration's Position on the Climate Change Treaty.* Hearing before the House Committee on International Relations. November 13, 1997.

U.S. Government Printing Office. CIS-No. 99-H701-47. *Road from Kyoto, Part 1: Where Are We, Where Are We Going, and How Do We Get There?* Hearing before the House Committee on Science. February 4, 1998.

U.S. Government Printing Office. CIS-No. 98-S381-21. *Implications of the Kyoto Protocol on Climate Change.* Hearing before the Senate Committee on Foreign Relations. February 11, 1998.

U.S. Government Printing Office. CIS-No. 99-H701-48. *Road from Kyoto, Part II: Kyoto and the Administration's FY99 Budget Request.* Hearing before the House Committee on Science. February 12, 1998.

U.S. Government Printing Office. CIS-No. 99-H271-9. *Kyoto Protocol and Its Economic Implications.* Hearing before the Subcommittee on Energy and Power of the House Committee on Commerce. March 4, 1998.

U.S. Government Printing Office. CIS-No. 99-S161-14. *Examining the Kyoto Treaty on Climate Change and Its Effect on the Agricultural Economy.* Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. March 5, 1998.

U.S. Government Printing Office. CIS-No. 99-H701-52. *Road from Kyoto, Part III: State Department Overview.* Hearing before the House Committee on Science. March 5, 1998.

U.S. Government Printing Office. CIS-No. 99-H721-8. *Expected Impact on Small Businesses and Farmers of the Kyoto Treaty on Global Climate Change.* Hearing before the House Committee on Small Business. April 16, 1998.

U.S. Government Printing Office. CIS-No. 99-H401-37. *Kyoto Protocol: Is the Clinton-Gore Administration Selling Out Americans? Parts I-VI.* Hearings before the Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs of the House Committee on Government Reform. April 23, 1998; May 19 and 20, 1998; June 24, 1998; July 15, 1998; September 16, 1998.

U.S. Government Printing Office. CIS-No. 99-H461-5. *Kyoto Protocol: Problems with U.S. Sovereignty and the Lack of Developing Country Participation (H.R. 3807).* Hearing before the House Committee on International Relations. May 13, 1998.

U.S. Government Printing Office. CIS-No. 98-S311-59. *Climate Change Proposal.* Hearing before the Senate Committee on Energy and Natural Resources. June 4, 1998.

U.S. Government Printing Office. CIS-No. 99-H721-12. *Kyoto Protocol: The Undermining of American Prosperity – The Science.* Hearing before the House Committee on Small Business. July 29, 1998.

U.S. Government Printing Office. CIS-No. 99-H271-41. *Kyoto Protocol: The Outlook for Buenos Aires and Beyond.* Hearing before the Subcommittee on Energy and Power of the House Committee on Commerce. October 6, 1998.

U.S. Government Printing Office. CIS-No. 99-H401-32. *Will the Administration Implement the Kyoto Protocol Through the Back Door?* Hearing before the Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs of the House Committee on Government Reform. October 9, 1998.

U.S. Government Printing Office. CIS-No. 99-H701-53. *Road from Kyoto, Part IV: The Kyoto Protocol's Impacts on U.S. Energy Markets and Economic Activity.* Hearing before the House Committee on Science. October 9, 1998.

U.S. Government Printing Office. CIS-No. 99-S311-38. *Economic Impacts of the Kyoto Protocol.* Hearing before the Senate Committee on Energy and Natural Resources. March 25, 1999.

U.S. Government Printing Office. CIS-No. 99-H721-24. *Effect of the Kyoto Protocol on American Small Business.* Hearing before the House Committee on Small Business. April 29, 1999.

U.S. Government Printing Office. CIS-No. 99-S311-65. *Global Climate Change.* Joint Hearing before the Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs of the House Committee on Government Reform and the Subcommittee on Energy Research, Development, Production, and Regulation of the Senate Committee on Energy and Natural Resources. May 20, 1999.

U.S. Government Printing Office. CIS-No. 2000-H401-20. *Credit for Early Action: Win-Win or Kyoto Through the Front Door.* Hearing before the Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs of the House Committee on Government Reform. July 15, 1999.

U.S. Government Printing Office. CIS-No. 99-S381-36. *Agency for International Development and U.S. Climate Change Policy.* Hearing before the Subcommittee on International Economic Policy, Export, and Trade Promotion of the Senate Committee on Foreign Relations. July 28, 1999.

U.S. Government Printing Office. CIS-No. 2000-S311-19. *Forest Resources for the Environment and the Economy Act (S. 1457).* Hearing before the Subcommittee on Forests and Public Land Management of the Senate Committee on Energy and Natural Resources. September 30, 1999.

U.S. Government Printing Office. CIS-No. 2000-H401-57. *Is CO2 a Pollutant and Does EPA Have the Power to Regulate It?* Joint Hearing before the Subcommittee on Energy and Environment of the House Committee on Science and the Subcommittee on National Economic Growth, Natural Resources and Regulatory Afftairs of the House Committee on Government Affairs. October 6, 1999.

U.S. Government Printing Office. CIS-No. 2000-S311-61. *Energy and Climate Policy Act and the Climate Change Energy Policy Response Act (S. 882, S. 1776).* Hearing before the Senate Committee on Energy and Natural Resources. March 30, 2000.

U.S. Government Printing Office. CIS-No. 2001-S161-11. *Carbon Cycle Research and Agriculture's Role in Reducing Climate Change.* Hearing before the Subcommittee on Research, Nutrition, and General Legislation of the Senate Committee on Agriculture, Nutrition, and Forestry. May 4, 2000.

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U.S. Government Printing Office. CIS-No. 90-S261-32. *Human Genome Initiative.* Hearing before the Subcommittee on Science, Technology, and Space of the Senate Committee on Commerce, Science, and Transportation. November 9, 1989.

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U.S. Government Printing Office. CIS-No. 91-H521-39. *Biotechnology Patent Protection (H.R. 3957, H.R. 5664).* Hearing before the Subcommittee on Courts, Intellectual Property, and the Administration of Justice of the House Committee on Judiciary. September 25, 1990.

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U.S. Government Printing Office. CIS-No. 92-H401-29. *Domestic and International Data Protection Issues.* Hearings before the Subcommittee on Government Information, Justice, and Agriculture of the House Committee on Government Operations. April 10, 1991; October 17, 1991.

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U.S. Government Printing Office. CIS-No. 92-H701-36. *Commercialization of Biotechnology.* Hearing before the Subcommittee on Technology and Competitiveness of the House Committee on Science, Space, and Technology. December 6, 1991.

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U.S. Government Printing Office. CIS-No. 93-S521-42. *Genome Project: The Ethical Issues of Gene Patenting (H.R. 2507).* Hearing before the Subcommittee on Patents, Copyrights and Trademarks of the Senate Committee on the Judiciary. September 22, 1992.

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U.S. Government Printing Office. CIS-No. 94-H701-34. *Health Care Reform and Possible Effects on Innovative Therapies: Cancer as a Case Study.* Hearing before the Subcommittee on Technology, Environment and Aviation of the House Committee on Science, Space, and Technology. February 2, 1994.

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U.S. Government Printing Office. CIS-No. 95-H701-31. *Gene Therapy: Status, Prospects for the Future, and Government Policy Implications.* Hearing before the House Committee on Science, Space, and Technology. September 28, 1994.

U.S. Government Printing Office. CIS-No. 95-H701-36. *Department of Energy's Human Genome Project Issues Arising from Research.* Hearing before the Subcommittee on Energy of the House Committee on Science, Space, and Technology. October 4, 1994.

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U.S. Government Printing Office. CIS-No. 96-S161-16. *Research and the Future of U.S. Agriculture.* Hearing before the Subcommittee on Research, Nutrition, and General Legislation of the Senate Committee on Agriculture, Nutrition, and Forestry. May 24, 1995.

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U.S. Government Printing Office. CIS-No. 96-S181-29. *Reforming Health Care, Special Hearing.* Hearing before the Subcommittee on Departments of Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. April 11, 1996.

U.S. Government Printing Office. CIS-No. 96-S541-28. *Advances in Genetics Research and Technologies: Challenges for Public Policy.* Hearing before the Senate Committee on Labor and Human Resources. July 25, 1996.

U.S. Government Printing Office. CIS-No. 97-H701-11. *Technological Advances in Genetics Testing: Implications for the Future.* Hearing before the Subcommittee on Technology of the House Committee on Science. September 17, 1996.

U.S. Government Printing Office. CIS-No. 97-H701-29. *Biotechnology and the Ethics of Cloning: How Far Should We Go?* Hearing before the Subcommittee on Technology of the House Committee on Science. March 5, 1997.

U.S. Government Printing Office. CIS-No. 97-S541-14. *Scientific Discoveries in Cloning: Challenges for Public Policy.* Hearing before the Subcommittee on Public Health and Safety of the Senate Committee on Labor and Human Resources. March 12, 1997.

U.S. Government Printing Office. CIS-No. 98-H701-5. *Review of the President's Commission's Recommendations on Cloning.* Hearing before the Subcommittee on Technology of the House Committee on Science. June 12, 1997.

U.S. Government Printing Office. CIS-No. 97-S541-41. *Ethics and Theology: A Continuation of the National Discussion on Human Cloning.* Hearing before the Subcommittee on Public Health and Safety of the Senate Committee on Labor and Human Resources. June 17, 1997.

U.S. Government Printing Office. CIS-No. 97-H271-41. *Continued Management Concerns at the NIH.* Hearing before the Subcommittee on Oversight and Investigations of the House Committee on Commerce. June 19, 1997.

U.S. Government Printing Office. CIS-No. 98-H701-14. *Prohibition of Federal Government Funding of Human Cloning Research (H.R. 922, H.R. 923, S. 368).* Hearing before the Subcommittee on Technology of the House Committee on Science. July 22, 1997.

U.S. Government Printing Office. CIS-No. 98-H271-32. *Cloning: Legal, Medical, Ethical, and Social Issues (H.R. 922, S. 1601).* Hearing before the Subcommittee on Health and Environment of the House Committee on Commerce. February 12, 1998.

U.S. Government Printing Office. CIS-No. 99-H461-21. *Issues in U.S.-European Union Trade: European Privacy Legislation and Biotechnology/Food Safety Policy.* Hearing before the House Committee on International Relations. May 7, 1998.

U.S. Government Printing Office. CIS-No. 98-S541-39. *Genetic Information and Health Care (S. 89, S. 422).* Hearing before the Senate Committee on Labor and Human Resources. May 21, 1998.

U.S. Government Printing Office. CIS-No. 99-H701-11. *Human Genome Project: How Private Sector Developments Affect the Government Program.* Hearing before the Subcommittee on Energy and Environment of the House Committee on Science. June 17, 1998.

U.S. Government Printing Office. CIS-No. 99-H701-15. *Industrial Biotechnology: A Solution for the Future?* Hearing before the Subcommittee on Technology of the House Committee on Science. September 17, 1998.

U.S. Government Printing Office. CIS-No. 99-S181-30. *Stem Cell Research, Special Hearing.* Hearings before the Subcommittee on Departments of Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. December 2, 1998; January 12 and 26, 1999.

U.S. Government Printing Office. CIS-No. 99-H161-16. *Agricultural Biotechnology.* Hearing before the Subcommittee on Risk Management, Research, and Specialty Crops of the House Committee on Agriculture. March 3, 1999.

U.S. Government Printing Office. CIS-No. 99-H161-22. *Review the Environmental Protection Agency's Proposed Rule on Plant Pesticides.* Hearing before the Subcommittee on Risk Management, Research, and Specialty Crops of the House Committee on Agriculture. March 24, 1999.

U.S. Government Printing Office. CIS-No. 99-H701-54. *Genetics Testing in the New Millennium: Advances, Standards, and Implications.* Hearing before the Subcommittee on Technology of the House Committee on Science. April 21, 1999.

U.S. Government Printing Office. CIS-No. 2000-H701-27. *Plant Genome Science: From the Lab to the Field to the Market, Parts I-III.* Hearings before the Subcommittee on Basic Research of the House Committtee on Science. August 3, 1999; October 5 and 19, 1999.

U.S. Government Printing Office. CIS-No. 2001-J841-3. *Biotechnology Summit: Putting a Human Face on Biotechnology.* Hearing before the Joint Economic Committee. September 29, 1999.

U.S. Government Printing Office. CIS-No. 2000-S161-16. *Agricultural Research and Development.* Hearings before the Senate Committee on Agriculture, Nutrition, and Forestry. October 6 and 7, 1999.

U.S. Government Printing Office. CIS-No. 2000-H701-18. *Competing in the New Millennium: Challenges Facing Small Biotechnology Firms.* Hearing before the Subcommittee on Technology of the House Committee on Science. October 27, 1999.

U.S. Government Printing Office. CIS-No. 2000-S181-20. *Stem Cell Research, Part 2, Special Hearing.* Hearing before the Subcommittee on Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. November 4, 1999.

U.S. Government Printing Office. CIS-No. 2000-S431-7. *Gene Therapy: Is There Oversight for Patient Safety?* Hearing before the Subcommittee on Public Health of the Senate Committee on Health, Education, Labor, and Pensions. February 2, 2000.

U.S. Government Printing Office. CIS-No. 2001-H701-14. *Human Genome Project.* Hearing before the Subcommittee on Energy and Environment of the House Committee on Science. April 6, 2000.

U.S. Government Printing Office. CIS-No. 2001-S181-18. *Stem Cell Research, Part 3, Special Hearings.* Hearings before the Subcommittee on Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. April 26, 2000; September 7 and 14, 2000.

U.S. Government Printing Office. CIS-No. 2000-S431-25. *Gene Therapy: Are Patients Any Safer?* Hearing before the Subcommittee on Public Health of the Senate Committee on Health, Education, Labor, and Pensions. May 25, 2000.

U.S. Government Printing Office. CIS-No. 2001-S381-17. *Role of Biotechnology in Combating Poverty and Hunger in Developing Countries.* Hearing before the Subcommittee on International Economic Policy, Export and Trade Promotion of the Senate Committee on Foreign Relations. July 12, 2000.

U.S. Government Printing Office. CIS-No. 2001-H521-29. *Gene Patents and Other Genomic Inventions.* Hearing before the Subcommittee on Courts and Intellectual Property of the House Committee on the Judiciary. July 13, 2000.

U.S. Government Printing Office. CIS-No. 2000-S431-26. *Genetic Information in the Workplace (S. 1322).* Hearing before the Senate Committee on Health, Education, Labor, and Pensions. July 20, 2000.

U.S. Government Printing Office. CIS-No. 2001-S431-3. *Future of Food: Biotechnology and Consumer Confidence.* Hearing before the Senate Committee on Health, Education, Labor, and Pensions. September 26, 2000.

U.S. Government Printing Office. CIS-No. 2001-H361-5. *Issues Raised by Human Cloning Research.* Hearing before the Subcommittee on Oversight and Investigations of the House Committee on Energy and Commerce. March 28, 2001.

U.S. Government Printing Office. CIS-No. 2004-S261-62. *Human Cloning.* Hearing before the Subcommittee on Science, Technology, and Space of the Senate Committee on Commerce, Science, and Transportation. May 2, 2001.

U.S. Government Printing Office. CIS-No. 2002-H521-1. *Human Cloning (H.R. 1644, H.R. 2172).* Hearings before the Subcommittee on Crime of the House Committee on the Judiciary. June 7 and 19, 2001.

U.S. Government Printing Office. CIS-No. 2001-H361-42. *Human Cloning Prohibition Act of 2001 and the Cloning Prohibition Act of 2001 (H.R. 1644, H.R. 2172).* Hearing before the Subcommittee on Health of the House Committee on Energy and Commerce. June 20, 2001.

U.S. Government Printing Office. CIS-No. 2001-H361-44. *Potential for Discrimination in Health Insurance Based on Predictive Genetic Tests.* Hearing before the Subcommittee on Commerce, Trade, and Consumer Protection of the House Committee on Energy and Commerce. July 11, 2001.

U.S. Government Printing Office. CIS-No. 2002-S181-6. *Promise of the Genomic Revolution, Special Hearing.* Hearing before the Subcommittee on Departments of Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. July 11, 2001.

U.S. Government Printing Office. CIS-No. 2002-H401-37. *Opportunities and Advancements in Stem Cell Research (S. 723, H. Con. Res. 17).* Hearing before the Subcommittee on Criminal Justice, Drug Policy and Human Resources of the House Committee on Government Reform. July 17, 2001.

U.S. Government Printing Office. CIS-No. 2002-S181-31. *Stem Cells, 2001, Special Hearings.* Hearings before the Subcommittee on Departments of Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. July 18, 2001; August 1, 2001; October 31, 2001.

U.S. Government Printing Office. CIS-No. 2002-H341-6. *Genetic Nondiscrimination: Implications for Employers and Employees.* Hearing before the Subcommittee on Employer-Employee Relations of the House Committee on Education and the Workforce. July 24, 2001.

U.S. Government Printing Office. CIS-No. 2002-S431-5. *Fulfilling the Promise of Genetics Research: Ensuring Nondiscrimination in Health Insurance and Employment (S. 318).* Hearing before the Senate Committee on Health, Education, Labor, and Pensions. July 25, 2001.

U.S. Government Printing Office. CIS-No. 2002-S431-16. *Stem Cell Research.* Hearing before the Senate Committee on Health, Education, Labor, and Pensions. September 5, 2001.

U.S. Government Printing Office. CIS-No. 2002-H701-13. *Strengthening NSF Sponsored Agricultural Biotechnology Research: H.R. 2051 and H.R. 2912 (H.R. 2051, H.R. 2912).* Hearing before the Subcommittee on Research of the House Committee on Science. September 25, 2001.

U.S. Government Printing Office. CIS-No. 2002-S181-25. *Cloning, 2001, Special Hearing.* Hearing before the Subcommittee on Departments of Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. December 4, 2001.

U.S. Government Printing Office. CIS-No. 2002-S181-44. *Cloning, 2002, Special Hearings.* Hearings before the Subcommittee on Departments of Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. January 24, 2002; March 12, 2002.

U.S. Government Printing Office. CIS-No. 2003-S521-5. *Human Cloning: Must We Sacrifice Medical Research in the Name of a Total Ban.* Hearing before the Senate Committee on the Judiciary. February 5, 2002.

U.S. Government Printing Office. CIS-No. 2002-S431-29. *Dangers of Cloning and the Promise of Regenerative Medicine.* Hearing before the Senate Committee on Health, Education, Labor, and Pensions. March 5, 2002.

U.S. Government Printing Office. CIS-No. 2002-S261-34. *Biotechnology in Portland.* Hearing before the Subcommittee on Science, Technology, and Space of the Senate Committee on Commerce, Science, and Transportation. April 5, 2002.

U.S. Government Printing Office. CIS-No. 2003-H401-88. *Medical Science and Bioethics: Attack of the Clones?* Hearing before the Subcommittee on Criminal Justice, Drug Policy and Human Resources of the House Committee on Government Reform. May 15, 2002.

U.S. Government Printing Office. CIS-No. 2003-S181-15. *Status of the Implementation of the Federal Stem Cell Research Policy, Special Hearing.* Hearing before the Subcommittee on Departments of Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. September 25, 2002.

U.S. Government Printing Office. CIS-No. 2006-S261-37. *Science and Ethics of Human Cloning.* Hearing before the Subcommittee on Science, Technology, and Space of the Senate Committee on Commerce, Science, and Transportation. January 29, 2003.

U.S. Government Printing Office. CIS-No. 2004-S521-1. *Promoting Ethical Regenerative Medicine Research and Prohibiting Immoral Human Reproductive Cloning.* Hearing before the Senate Committee on the Judiciary. March 19, 2003.

U.S. Government Printing Office. CIS-No. 2003-H161-6. *Review of Artificial Barriers to U.S. Agricultural Trade and Foreign Food Assistance.* Hearing before the House Committee on Agriculture. March 26, 2003.

U.S. Government Printing Office. CIS-No. 2006-S261-54. *Cloning: A Risk to Women? (S. 303).* Hearing before the Subcommittee on Science, Technology, and Space of the Senate Committee on Commerce, Science, and Transportation. March 27, 2003.

U.S. Government Printing Office. CIS-No. 2005-S261-48. *Advanced Manufacturing and Biotechnology.* Hearing before the Senate Committee on Commerce, Science, and Transportation. April 14, 2003.

U.S. Government Printing Office. CIS-No. 2004-S181-15. *Federal Funding for Stem Cell Research, Special Hearing.* Hearing before the Subcommittee on Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. May 22, 2003.

U.S. Government Printing Office. CIS-No. 2003-H361-36. *National Institutes of Health: Decoding Our Federal Investment in Genomic Research.* Hearing before the Subcommittee on Health of the House Committee on Energy and Commerce. May 22, 2003.

U.S. Government Printing Office. CIS-No. 2003-H701-33. *Plant Biotechnology Research and Development in Africa: Challenges and Opportunities.* Hearing before the Subcommittee on Research of the House Committee on Science. June 12, 2003.

U.S. Government Printing Office. CIS-No. 2003-H161-13. *Review of Biotechnology in Agriculture.* Hearing before the Subcommittee on Conservation, Credit, Rural Development, and Research of the House Committee on Agriculture. June 17, 2003.

U.S. Government Printing Office. CIS-No. 2004-H161-8. *Agricultural Research and Extension.* Hearing before the Subcommittee on Conservation, Credit, Rural Development, and Research of the House Committee on Agriculture. March 29, 2004.

U.S. Government Printing Office. CIS-No. 2004-H161-17. *Review of Agricultural Biotechnology.* Hearing before the Subcommittee on Conservation, Credit, Rural Development, and Research of the House Committee on Agriculture. June 23, 2004.

U.S. Government Printing Office. CIS-No. 2005-H341-3. *Genetic Non-Discrimination: Examining the Implications for Workers and Employers.* Hearing before the Subcommittee on Employer-Employee Relations of the House Committee on Education and the Workforce. July 22, 2004.

U.S. Government Printing Office. CIS-No. 2006-S141-3. *Exploring the Promise of Embryonic Stem Cell Research (S. 471).* Hearing before the Senate Special Committee on Aging. June 8, 2005.

U.S. Government Printing Office. CIS-No. 2006-S161-6. *To Review the Benefits and Future Developments in Agriculture and Food Biotechnology.* Hearing before the Senate Committee on Agriculture, Nutrition, and Forestry. June 14, 2005.

U.S. Government Printing Office. CIS-No. 2005-H721-38. *Different Applications for Genetically Modified Crops.* Hearing before the Subcommittee on Rural Enterprises, Agriculture, and Technology of the House Committee on Small Business. June 29, 2005.

U.S. Government Printing Office. CIS-No. 2006-S181-62. *Alternative Methods for Deriving Stem Cells, Special Hearing (H.R. 810).* Hearing before the Subcommittee on Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. July 12, 2005.

U.S. Government Printing Office. CIS-No. 2006-S181-6. *Stem Cells Research, 2005, Special Hearing.* Hearing before the Subcommittee on Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. October 19, 2005.

U.S. Government Printing Office. CIS-No. 2007-H401-14. *Human Cloning and Embryonic Stem Cell Research After Seoul; Examination Exploitation, Fraud and Ethical Problems in the Research.* Hearing before the Subcommittee on Criminal Justice, Drug Policy and Human Resources of the House Committee on Government Reform. March 7, 2006.

U.S. Government Printing Office. CIS-No. 2007-S181-26. *Alternative Pluripotent Stem Cell Therapies Enhancement Act (S. 2754), Special Hearing (S. 2754).* Hearing before the Subcommittee on Departments of Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. June 27, 2006.

U.S. Government Printing Office. CIS-No. 2007-S141-1. *At Home DNA Tests: Marketing Scam or Medical Breakthrough.* Hearing before the Senate Special Committee on Aging. July 27, 2006.

U.S. Government Printing Office. CIS-No. 2007-S181-4. *Recent Controversies in Stem Cell Research.* Hearing before the Subcommittee on Departments of Labor, Health and Human Services, and Education, and Related Agencies of the Senate Committee on Appropriations. September 6, 2006.

Appendix B. List of Congressional Committees Holding Hearings in Each Issue Area

Tobacco Policy		
Subsystem	**House Committees**	**Senate Committees**
Agriculture	**Agriculture** Full Committee Subcommittee on Tobacco Subcommittee on Tobacco and Peanuts Subcommittee on Specialty Crops and Natural Resources Subcommittee on Risk Management, Research, and Specialty Crops	**Agriculture, Nutrition, and Forestry** Full Committee Subcommittee on Agricultural Production, Marketing, and Stabilization of Prices Subcommittee on Production and Price Competitiveness Subcommittee on Agricultural Exports Ad Hoc Subcommittee on Farm Program Administration
Health and Safety	**Committee on Energy and Commerce**[24] Full Committee Subcommittee on Telecommunications, Trade, and Consumer Protection Subcommittee on Transportation and Hazardous Materials Subcommittee on Health and the Environment Subcommittee on Oversight and Investigations Consumer Subcommittee Subcommittee on Commerce, Consumer Protection, and Competitiveness Subcommittee on Commerce, Trade, and Consumer Protection	**Committee on Commerce, Science, and Transportation** Full Committee Subcommittee on Consumer **Committee on Environment and Public Works** Full Committee Subcommittee on Clean Air and Nuclear Regulation **Committee on Labor and Human Resources**[25] Full Committee Subcommittee on Public Health and Safety Subcommittee on Health Subcommittee on Health and Scientific Research **Special Committee on Aging** Full Committee

[24] Committee also called Committee on Interstate and Foreign Commerce and Committee on Commerce

[25] Committee also called Committee on Labor and Public Welfare and Committee on Human Resources

Subsystem	House Committees	Senate Committees
Judiciary	**Committee on the Judiciary** Full Committee Subcommittee Number 1 Subcommittee on Crime Subcommittee on Courts and Intellectual Property Subcommittee on Courts, the Internet, and Intellectual Property	**Committee on the Judiciary** Full Committee Subcommittee on Antitrust, Business Rights, and Competition Subcommittee on Criminal Laws and Procedures
Miscellaneous	**Committee on Government Reform**[26] Full Committee Subcommittee on Intergovernmental Relations and Human Resources **Committee on Post Office and Civil Service** Subcommittee on Employee Benefits **Committee on Transportation and Infrastructure**[27] Subcommittee on Aviation Subcommittee on Public Buildings and Grounds Subcommittee on Public Buildings and Economic Development **Committee on Science and Technology** Subcommittee on Natural Resources, Agriculture Research, and Environment	**Committee on Finance** Full Committee Subcommittee on Taxation and Debt Management **Committee on Governmental Affairs** Full Committee Oversight of Government Management, Restructuring, and the District of Columbia Subcommittee Subcommittee on Civil Service, Post Office, and General Services **Committee on Veterans' Affairs** Full Committee **Committee on Indian Affairs** Full Committee

[26] Committee also called Committee on Government Operations

[27] Committee also called Committee on Public Works and Transportation

Subsystem	House Committees	Senate Committees
Miscellaneous (cont')	**<u>Committee on Veterans' Affairs</u>** Subcommittee on Oversight and Investigations **<u>Committee on Ways and Means</u>** Full Committee Subcommittee on Miscellaneous Revenue Measures	

Climate Change Policy		
Subsystem	**House Committees**	**Senate Committees**
Environmental	**Committee on Energy and Commerce** Subcommittee on Health and the Environment Subcommittee on Oversight and Investigations	**Committee on Environment and Public Works** Full Committee Subcommittee on Environmental Pollution Subcommittee on Environmental Protection Subcommittee on Toxic Substances and Environmental Oversight Subcommittee on Clean Air and Nuclear Regulation Subcommittee on Clean Air, Wetlands, Private Property, and Nuclear Safety Subcommittee on Clean Air, Climate Change, and Nuclear Safety Subcommittee on Hazardous Wastes and Toxic Substances
Energy	**Committee on Energy and Commerce**[28] Subcommittee on Energy and Power Subcommittee on Oversight and Investigations	**Committee on Energy and Natural Resources** Full Committee Subcommittee on Energy Research, Development, Production, and Regulation
Science	**Committee on Science**[29] Full Committee Subcommittee on Science Subcommittee on Natural Resources, Agriculture Research, and Environment Subcommittee on Space Subcommittee on Energy and Environment Subcommittee on Energy Subcommittee on Environment	**Committee on Commerce, Science, and Transportation** Full Committee Subcommittee on Science, Technology, and Space Subcommittee on Oceans and Fisheries

[28] Committee also called Committee on Commerce.

[29] Committee also called Committee on Science, Space, and Technology.

Subsystem	House Committees	Senate Committees
Science (cont')	**Committee on Science (cont')**[30] Subcommittee on Investigations and Oversight Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs	
Foreign Policy	**Committee on International Relations**[31] Full Committee Subcommittee on Economic Policy, Trade and Environment Subcommittee on Human Rights and International Organizations	**Committee on Foreign Relations** Full Committee Subcommittee on International Economic Policy, Export, and Trade Promotion
Agricultural	**Committee on Agriculture** Subcommittee on Department Operations, Research, and Foreign Agriculture Subcommittee on Forests, Family Farms, and Energy	**Committee on Agriculture, Nutrition, and Forestry** Full Committee Subcommittee on Research, Nutrition, and General Legislation
Resources	**Committee on Resources** Full Committee Subcommittee on Fisheries Conservation, Wildlife, and Oceans **Committee on Interior and Insular Affairs** Subcommittee on Water and Power Resources **Committee on Merchant Marine and Fisheries** Subcommittee on Oceanography and the Great Lakes	**Committee on Energy and Natural Resources** Full Committee Subcommittee on Forests and Public Land Management

[30] Committee also called Committee on Science, Space, and Technology.

[31] Committee also called Committee on Foreign Affairs

Miscellaneous	**<u>Committee on Government Reform</u>** Full Committee Subcommittee on National Economic Growth, Natural Resources, and Regulatory Affairs Subcommittee on Energy and Resources **<u>Committee on Small Business</u>** Full Committee **<u>Joint Economic Committee</u>** Full Committee	**<u>Committee on Appropriations</u>** Full Committee Subcommittee on Foreign Operations, Export Financing, and Related Programs Appropriations **<u>Committee on Commerce, Science, and Transportation</u>** Subcommittee on the Consumer **<u>Joint Economic Committee</u>** Full Committee

Biotechnology Policy		
Subsystem	**House Committees**	**Senate Committees**
Agricultural	**Committee on Agriculture** Full Committee Subcommittee on Resource Conservation, Research, and Forestry Subcommittee on Conservation, Credit, Rural Development, and Research Subcommittee on Livestock, Dairy, and Poultry Subcommittee on Department Operations, Research, and Foreign Agriculture Subcommittee on Risk Management, Research, and Specialty Crops Subcommittee on Department Operations, Research, and Foreign Agriculture Subcommittee on Department Operations, Oversight, Nutrition, and Forestry Subcommittee on Forests, Family Farms, and Energy	**Committee on Agriculture, Nutrition, and Forestry** Full Committee Subcommittee on Research, Nutrition, and General Legislation Subcommittee on Agricultural Research and General Legislation Subcommittee on Conservation and Forestry
Science	**Committee on Science**[32] Full Committee Subcommittee on Science, Research, and Technology Subcommittee on Basic Research Subcommittee on Research Subcommittee on Natural Resources, Agriculture Research and Environment Subcommittee on Investigations and Oversight Subcommittee on International Scientific Cooperation	**Committee on Commerce, Science, and Transportation** Full Committee Subcommittee on Science, Technology, and Space

[32] Committee also called Committee on Science and Technology and Committee on Science, Space, and Technology

Subsystem	House Committees	Senate Committees
Science (cont')	**Committee on Science (cont')**[33] Subcommittee on Energy Subcommittee on Energy and Environment Technology Policy Task Force Subcommittee on Technology and Competitiveness Subcommittee on Technology, Environment, and Aviation Subcommittee on Technology Science Policy Task Force Subcommittee on Environment	
Health	**Committee on Energy and Commerce**[34] Subcommittee on Health and the Environment Subcommittee on Health Subcommittee on Oversight and Investigations Subcommittee on Commerce, Trade, and Consumer Protection	**Committee on Health, Education, Labor, and Pensions**[35] Full Committee Subcommittee on Public Health and Safety Subcommittee on Public Health Subcommittee on Health Subcommittee on Health and Scientific Research **Committee on Appropriations** Subcommittee on Departments of Labor, Health and Human Services, Education, and Related Agencies **Special Committee on Aging** Full Committee

[33] Committee also called Committee on Science and Technology and Committee on Science, Space, and Technology

[34] Committee also called Committee on Interstate and Foreign Commerce and Committee on Commerce.

[35] Committee also called Committee on Labor and Human Resources

Subsystem	House Committees	Senate Committees
Judiciary	**Committee on the Judiciary** Subcommittee on Crime Subcommittee on Courts, Civil Liberties, and the Administration of Justice Subcommittee on Courts, Intellectual Property, and the Administration of Justice Subcommittee on Intellectual Property and Judicial Administration Subcommittee on Courts and Intellectual Property	**Committee on the Judiciary** Full Committee Subcommittee on Patents, Copyrights, and Trademarks Subcommittee on Technology and the Law Subcommittee on Administrative Practice and Procedure
Environmental	**Committee on Energy and Commerce**[36] Subcommittee on Health and the Environment Subcommittee on Oversight and Investigations	**Subcommittee on Environment and Public Works** Subcommittee on Toxic Substances and Environmental Oversight Subcommittee on Hazardous Wastes and Toxic Substances
Economic Promotion	**Committee on Small Business** Subcommittee on Regulation and Business Opportunities Subcommittee on Regulation, Business, Opportunities, and Energy Subcommittee on Rural Enterprises, Agriculture, and Technology Subcommittee on Energy and Agriculture **Joint Economic Committee** Full Committee	**Committee on Small Business** Full Committee **Joint Economic Committee** Full Committee

[36] Committee also called Committee on Interstate and Foreign Commerce and Committee on Commerce.

Subsystem	House Committees	Senate Committees
Miscellaneous	**Committee on Education and the Workforce** Subcommittee on Employer-Employee Relations **Subcommittee on International Relations** Full Committee **Committee on Government Reform**[37] Subcommittee on Government Information, Justice, and Agriculture Subcommittee on Human Resources and Intergovernmental Relations Subcommittee on Criminal Justice, Drug Policy, and Human Resources **Committee on Merchant Marine and Fisheries** Subcommittee on Oceanography Subcommittee on Oceanography, Gulf of Mexico, and the Outer Continental Shelf	**Committee on Energy and Natural Resources** Subcommittee on Energy Research and Development **Committee on Foreign Relations** Subcommittee on International Economic Policy, Export, and Trade Promotion **Committee on Governmental Affairs** Full Committee

[37] Committee also called Committee on Government Operations.

Appendix C: Tobacco Testimony/Committee Member Statement Rubric

Pro-Tobacco

A) Health/Safety

1) Arguments/evidence that tobacco use diminishes health risks
2) Arguments/evidence of the tobacco industry's focus on providing healthier/safer tobacco products (i.e. low tar/low nicotine cigarettes, little cigars, etc.)/diminishing the health/safety risks of tobacco products
3) Lack of evidence that tobacco use causes certain health problems/diseases/cancers
4) Opposition to health taxes on tobacco products
5) Alternative explanations for lung cancer/other diseases other than tobacco use
6) Criticism of reports stating harmful effects of second-hand smoke
7) Alternative explanations for health problems commonly attributed to second-hand smoke
8) Opposition to permitting liability suits against tobacco companies related to the harm caused by using tobacco products/deceptive information concerning health effects on tobacco products/advertisements
9) Refutation of arguments/evidence stating risks of tobacco use when mixed with other drugs/products/etc.
10) Refutation of arguments/evidence of damages caused by cigarette-oriented fires
11) Lack of need for/disputed feasibility of improvements in cigarettes to reduce the risk of cigarette-oriented fires
12) Opposition to denying compensation to veterans for tobacco related diseases
13) Arguments/evidence of the tobacco industry's commitment to uncovering the true health effects of tobacco use
14) Arguments/evidence that the government has purposefully withheld information citing the lack of evidence that tobacco use leads to health problems
15) Arguments/evidence that tobacco is healthier than other alternative recreational products/drugs (i.e. marijuana, alcohol, etc.)
16) Refutation of arguments/evidence of the health care/other monetary costs of tobacco use
17) Arguments/evidence that individuals are personally responsible for their own tobacco use and not tobacco companies

B) General Regulatory Issues

1) Opposition to more stringent regulation of tobacco products/Opposition to stricter penalties for disobeying regulations
2) Support for more lenient regulation of tobacco products
3) Opposition to/lack of need for federal cigarette testing programs
4) Opposition to regulation of tobacco products by a federal regulatory body
5) Opposition to regulating tobacco as a drug

6) Opposition to the establishment of mandatory cigarette fire safety standards without forming a commission to study the feasibility of manufacturing self-extinguishing cigarettes
7) Opposition to regulating all tobacco products like cigarettes
8) Opposition to allowing states to regulate tobacco products more stringently than the federal government

C) Regulation of Tobacco Use

1) Opposition to/lack of need for government-funded programs/research to decrease tobacco use
2) Opposition to efforts to restrict smoking to certain designated areas in public areas (i.e. federal buildings, parks, etc.)
3) Arguments/evidence that forcing people to smoke in designated areas will hurt worker productivity
4) Arguments/evidence that forcing people to smoke in designated areas will hurt businesses/attendance at club meetings
5) Failures of past efforts to limit smoking to designated areas
6) Opposition to ban on smoking on airplanes
7) Opposition to government programs to reduce tobacco use by youths
8) Arguments/evidence of the ineffectiveness of regulations/taxes in curbing tobacco use
9) Arguments/evidence of the religious uses of tobacco products
10) Arguments/evidence of efforts by the tobacco industry to reduce tobacco use among youths

D) Regulation of Tobacco Sales

1) Arguments/evidence of tobacco industry's ability to self-regulate/voluntarily comply with regulations
2) Opposition to government intervention in the sale of products
3) Arguments/evidence of the dangers (economic, legal, ethical, constitutional, etc.) of regulation/taxes on tobacco products
4) Opposition to federal efforts to equalize state tobacco taxes at high levels (if opposing because states will not have the priority to enact higher taxes, select Anti – D4)
5) Opposition to ban on sale of tobacco products at particular facilities
6) Opposition to higher excise taxes on tobacco products/expediting the collection of tobacco excise taxes
7) Support for more orderly and efficient sale of tobacco
8) Opposition to ban on cigarette sales in vending machines
9) Lack of need for stricter regulation of cigarette sales to youth
10) Opposition to reversing the trend of prevalence of tobacco use by prominent figures (especially baseball players)
11) Arguments/evidence that the trend of cigarette smuggling can be attributed to tobacco taxes that are too high in some states

12) Arguments/evidence of the harmful effects of tobacco smuggling on the tobacco industry
13) Arguments/evidence that states with high taxes should enforce these policies on their own
14) Support for lower excise taxes on tobacco products
15) Refutation of arguments/evidence of the tobacco industry's intention to circumvent the tobacco regulation process

E) Advertising

1) Support for advertising regulation favorable to tobacco industry
2) Opposition to stricter regulations/bans on advertising of tobacco products
3) Arguments/evidence that tobacco companies do not attract young people
4) Defense of tobacco industry advertising practices
5) Concerns about restrictions on tobacco advertising
6) Arguments/evidence that tobacco advertisements only encourage brand switching and do not attract new tobacco users
7) Arguments/evidence that 1st amendment rights are violated by restricting tobacco advertising
8) Refutation of claims that tobacco advertisements target particular subsets of the population (women, minorities, youths)
9) Doubted effectiveness of banning tobacco advertisements in dampening tobacco use
10) Support for allowing tobacco companies to voluntarily restrict tobacco advertisements
11) Arguments/evidence that broadcasters can self-regulate tobacco advertising
12) Opposition to increased funding for anti-tobacco advertisements
13) Support for efforts to reduce funding for anti-tobacco advertisements
14) Opposition to disallowing business expense deductions for tobacco products advertising
15) Arguments/evidence of the dangers (economic, legal, etc.) of regulation/bans on advertising of tobacco products
16) Refutation of arguments/evidence that pro-tobacco advertisements are more prevalent than anti-tobacco advertisements

F) Addiction/Tar and Nicotine Content

1) Lack of evidence of tar and nicotine content's harmful effects on health
2) Opposition to/doubted effectiveness of government standards regulating the tar and nicotine content of cigarettes
3) Effectiveness of cigarette filters in decreasing inhalation of smoke and tar
4) Arguments that tobacco products are not addictive substances
5) Arguments/evidence of the distinction between addiction and drug abuse
6) Opposition to requirements to list tar and nicotine content (along with other ingredients) on tobacco products
7) Opposition to classifying nicotine as a drug

8) Refutation of claims that the tobacco industry manipulates nicotine levels in tobacco products to ensure their products remain addictive
9) Refutation of claims that U.S. tobacco companies' use of graduated nicotine levels to promote initial use of snuff and progression to increasingly potent brands
10) Arguments/evidence of the accuracy of tobacco industry's own tests measuring tar and nicotine content of cigarettes

G) Educating Public about Tobacco Risks

1) Opposition to hazard labels on tobacco products/advertisements
2) Arguments that the public is already aware of risks of tobacco use
3) Disputed value of hazard labels as an effective deterrent to tobacco use
4) Criticism of assumptions underlying warning label rotation system
5) Problems with cigarette manufacturers implementing the rotating hazard label system
6) Opposition to anti-tobacco education campaigns
7) Opposition to placing hazard labels concerning tobacco use on other products (i.e. contraceptives, drugs, etc.)
8) Arguments/evidence of the harm done to the tobacco industry by opponents of tobacco industry exaggerating its risks to the public/concerns that opponents of the tobacco industry are given disproportionate time to express their views in public forums (i.e. congressional hearings)
9) Arguments/evidence of the need to educate the public about the benefits of the tobacco industry
10) Concerns that anti-tobacco education programs will exaggerate risks of tobacco use and under-emphasize risks of other products (i.e. drug use, alcohol use, etc.)
11) Arguments/evidence of the difficulty of tobacco companies in complying with hazard label regulations
12) Refutation of arguments/evidence that tobacco companies deliberately attempt to suppress information about the harmful effects of tobacco use

H) Pesticide Use

1) Support and defense of use of pesticides on tobacco products
2) Support for regulatory approval of pesticide use on tobacco products
3) Support for applying pesticide standards applicable to U.S. tobacco farmers to crops imported into the U.S. in order to prevent unfair competition to U.S. tobacco farmers

I) Insurance

1) Opposition to insurance industry practice of charging lower rates for individuals who do not use tobacco products
2) Support for tobacco company takeover of insurance companies
3) Support for extending federal insurance to tobacco growers

J) International Tobacco Market

1) Importance of foreign trade of tobacco products to the U.S. economy
2) Support for U.S. export of tobacco products
3) Support for reinstatement and extension of the tobacco barter program
4) Support for expanding U.S. tobacco export markets
5) Support for efforts to make U.S. tobacco more competitive in the international market
6) Opposition to bringing in cheap tobacco from other countries (if the reason for this opposition is to protect the American tobacco grower and strengthen the U.S. tobacco industry)
7) Support for subsidies to tobacco farmers who export tobacco to other countries regardless of participation in acreage/poundage allotment programs
8) Opposition to/dangers of stricter trade barriers on tobacco products
9) Support for/benefits of breaking down trade barriers on tobacco products/sanctioning other countries that do not encourage free trade of tobacco
10) Arguments/evidence that the tobacco barter program was inappropriately suspended without proper notice to tobacco farmers
11) Statement of benefits of tobacco barter program
12) Support for increased Federal export credit and assistance for tobacco
13) Support for USDA enforcement of tobacco seed export control programs
14) Arguments/evidence that tobacco farmers are not treated fairly under export credit and assistance programs
15) Support for tobacco export policies that protect tobacco growers

K) Federal Tobacco Support Programs (i.e. Tobacco Price Support/Marketing Quota/Acreage Allotment System/etc.)

1) Support for/need for policies that set prices/quotas at levels that are best for increasing the sale of tobacco
2) Arguments/evidence of the economic importance of the tobacco price support/control and acreage/poundage allotment programs
3) Support for federal government funding/support of the tobacco industry/tobacco industry promotion research/agreements with the tobacco industry
4) Support for leasing/selling of acreage/poundage marketing quota policies that provide the most benefits to tobacco farmers (need to look at the intent behind supporting the policy not opposition/support for the policy itself)
5) Concerns that price levels/quotas are not being set at a level that is best for increasing the sale of tobacco
6) Arguments/evidence that price support system and tobacco grading systems are of little to no cost to taxpayers/Arguments/evidence of the revenues generated by taxes paid by the tobacco industry
7) Support for allowing tobacco farmers to have control over the tobacco program
8) Opposition to giving non-farmers/non-quota farms the ability to buy and lease tobacco allotments
9) Support for governmental support to tobacco farmers hit by disasters
10) Opposition to overly strict limits on/cuts to tobacco acreage/poundage allotments

11) Support for stabilization of support levels for tobacco against disruptive fluctuations
12) Support for auction and grading systems that make selling tobacco easier for tobacco farmers
13) Support for adjustments in acreage/poundage/pricing system to help farmers who were victims of circumstances beyond their control
14) Support for compensating tobacco farmers if quota and price support program is eliminated
15) Arguments/evidence that tobacco producers are paying a disproportionate amount into the tobacco price support system compared to the federal government
16) Support for educating legislators about the need to support the tobacco allotment/quota programs
17) Arguments/evidence of the need for federal policy to assist tobacco industry/farmers in price control/overproduction/underproduction/conservation/inflation/etc. problems
18) Support for protecting small farmers from harms of certain price control programs
19) Concerns about the harms to the tobacco industry/tobacco farmers of proposed/enacted changes to tobacco support programs (i.e. liberalizing the tobacco leasing/selling system, allowing the sell/leasing of tobacco allotments/quotas, changing the length of time for selling tobacco, changing price support formula, only allowing tobacco farmers to sell and lease tobacco allotments, etc.)
20) Arguments/evidence of the importance of the tobacco grading system to the tobacco industry
21) Support for increasing the pay of tobacco graders to improve the process for tobacco farmers
22) Support for changes in the administration of tobacco quota/price support programs with the intent of improving the process for tobacco farmers
23) Support for improving tobacco storage programs for farmers
24) Support for giving farmers more authority in determining changes to tobacco price support/allotment/quota system
25) Support for maintaining the integrity of the price support system
26) Opposition to price supports/quota policies that are likely to hurt the tobacco industry
27) Refutation of arguments/evidence that high tobacco prices can be blamed on tobacco growers
28) Opposition to increasing tobacco marketing quotas in light of concerns that tobacco farmers may not be able to meet these quotas
29) Support for/need for policies that set prices/quotas at levels that are best for meeting the needs of tobacco growers
30) Support for/need for tobacco marketing policies/technologies that are best for meeting needs of tobacco growers
31) Arguments/evidence of the benefits of research to help promote the tobacco industry

32) Support for changes in the tobacco price support program to protect it from being eliminated
33) Arguments/evidence of the need for tobacco proponents to unite to defend against the threat posed by opponents of the tobacco industry
34) Support for lowering the cost burdens of tobacco farmers (i.e. lowering the price of tobacco allotments, assisting in lowering the price of supplies for tobacco farmers, reducing/eliminating the fee for graders to stamp no grade on tobacco products not subject to price supports, etc.)
35) Support for penalizing those who tamper with tobacco crops
36) Arguments/evidence that the tobacco price support/quota system should be ended/significantly changed due to the harm the program is doing to the tobacco industry

L) Tobacco Settlement Agreement/Litigation

1) Feared adverse impact (i.e. loss of income, loss of tobacco quota equity, and loss of equipment value) on tobacco producers if tobacco settlement agreement becomes law
2) Adverse impact on tobacco industry/producers of tobacco settlement agreement
3) Unfairness of tobacco settlement agreement to small vending machine companies
4) Unfairness of tobacco settlement agreement to smokeless tobacco manufacturers and other small manufacturers of tobacco products
5) Support for provisions in tobacco settlement agreement that provided tobacco companies with immunity from punitive damages for past actions and with immunity from future class action lawsuits
6) Burdensome impact on convenience stores of tobacco settlement agreement provisions
7) Criticism of tobacco settlement agreement for being too strict on tobacco companies
8) Opposition to provisions in tobacco settlement agreement that required tobacco companies to pay for anti-smoking programs
9) Support for compensating tobacco producers and farmers for adverse impact of tobacco settlement program
10) Opposition to provisions in tobacco settlement program requiring tobacco companies to pay penalties if declines in youth smoking are not realized
11) Opposition to requiring that attorney fees be paid by tobacco companies/support for allowing money from tobacco settlement agreements to be used to pay for attorney fees
12) Arguments/evidence stating harmful effects of tobacco settlement agreement on Native Americans
13) Opposition to government-sponsored litigation against tobacco industry
14) Defense of antitrust exemption provisions in tobacco settlement in order to protect tobacco companies from suits

M) Economic Issues

1) Arguments/evidence stating the importance of tobacco industry to economy

Neutral

1. Statement of information on tobacco policy without any conclusive findings or recommendations
2. Description of information concerning tobacco use/advertising/etc. without any conclusive findings or recommendations
3. Quest for more information about tobacco policy
4. Statement of both sides in tobacco debate without taking a side in the debate
5. Support /opposition for legislation to increase enforcement of tobacco smuggling (need to look at intent behind support of legislation)
6. Arguments/evidence that tobacco smuggling can be attributed to disparities in taxes between states without taking a position on whether taxes being too high or too low are to blame
7. Information about organized crime's role in cigarette smuggling
8. Support for encouraging the development of healthier tobacco products (If the tobacco industry is talking about how they have already made healthier products, Pro – A2 is more appropriate)
9. Description of cigarette smuggling problem
10. Support for the establishment of cigarette fire safety standards while agreeing to form a commission to study the feasibility of manufacturing self-extinguishing cigarettes
11. Support for increasing tobacco excise taxes to pay for tobacco support program in order to keep the program alive/assist tobacco farmers
12. Support for giving cigarette companies more discretion in complying with hazard label requirements
13. Opinions on where revenues for increased excise taxes of tobacco products ought to be spent if it is necessary to increase excise taxes while still opposing excise taxes on tobacco products
14. Support for applying pesticide standards applicable to U.S. tobacco farmers to crops imported into the U.S. without giving a reason for support
15. Defense of a pesticide product without any opinion on the tobacco industry
16. Support for phasing out the sale of tobacco in some VA facilities while allowing the sale of tobacco in other VA facilities
17. Support for policies that are unanimously opposed by tobacco farmers but are proposed in the interests of the tobacco industry as a whole
18. Support for voluntary/market-based solutions to tobacco health problems while recognizing the health problems of tobacco use
19. Support for compromise between tobacco companies and health advocates in settling tobacco-related litigation
20. Debate over whether federal or state governments should receive benefits of tobacco settlement agreement
21. Need for/support for compromise between tobacco companies and public health advocates in order to reduce tobacco use
22. Debate over how attorney's fees in tobacco settlement should be paid

Anti-Tobacco

A) Health/Safety

1) Arguments/evidence of health hazards of tobacco products
2) Arguments/evidence of harmful effects of carbon monoxide in cigarettes
3) Support for health taxes on tobacco products
4) Arguments/evidence of dental problems related to tobacco use
5) Support for permitting liability suits against tobacco companies related to health effects caused by using tobacco products/deceptive information concerning health effects on tobacco products/advertisements
6) Concerns about misleading information/marketing of supposedly healthier (i.e. low tar/low nicotine cigarettes, little cigars, smokeless tobacco, etc.) tobacco products
7) Arguments/evidence of harmful effects of second-hand smoke
8) Arguments/evidence of respiratory infections amongst children attributable to second-hand smoke
9) Arguments/evidence stating risks of tobacco use when mixed with other drugs/products/etc.
10) Arguments/evidence of damages caused by cigarette-oriented fires
11) Need for/feasibility of improvements in cigarettes to reduce the risk of cigarette-oriented fires
12) Support for denying compensation to veterans for tobacco related diseases
13) Concerns about misleading information presented by tobacco advocates concerning the safety of tobacco products
14) Arguments/evidence of the health care/other monetary costs of tobacco use
15) Arguments/evidence that tobacco use leads to use of other more harmful drugs/recreational substances
16) Refutation of arguments/evidence of the tobacco industry's focus on providing healthier/safer tobacco products (i.e. low tar/low nicotine cigarettes, little cigars, etc.)/diminishing the health/safety risks of tobacco products

B) General Regulatory Issues

1) Support for/need for/feasibility of federal cigarette testing programs
2) Support for more stringent regulation of tobacco products
3) Opposition to more lenient regulation of tobacco products
4) Support for regulation of tobacco products by a federal regulatory body
5) Support for regulating tobacco as a drug
6) Support for/need for the establishment of cigarette fire safety standards without forming a commission to study the feasibility of manufacturing self-extinguishing cigarettes
7) Support for regulating all/more tobacco products like cigarettes
8) Arguments/evidence that tobacco regulations are more lenient in the U.S. than in other countries (basically an argument that says tobacco companies should not be complaining about how stringent tobacco laws are in the U.S.)
9) Support for/need for more stringent enforcement of tobacco regulations
10) Support for allowing states to regulate tobacco products more stringently than the federal government

C) Regulation of Tobacco Use

1) Support for government-funded programs/research to reduce tobacco use
2) Support for/importance of efforts to reduce use of tobacco products
3) Support for efforts to restrict smoking to certain designated areas in public facilities (i.e. federal buildings, parks, etc.)
4) Successes of part efforts to restrict smoking to designated areas
5) Support for ban on smoking in airplanes
6) Arguments/evidence of safety risks of smoking on airplanes
7) Support for reversing the trend of prevalence of tobacco use by prominent figures (especially baseball players)
8) Support for programs to reduce tobacco use by youths
9) Arguments/evidence of high use of tobacco products amongst youths
10) Support for providing incentives to individuals/businesses/etc. that take measures to discourage tobacco use

D) Regulation of Tobacco Sales

1) Support for federal efforts to equalize state tobacco taxes at high levels
2) Support for ban on sale of tobacco products at particular facilities
3) Support for stricter regulation of cigarette sales to youth
4) Support for/benefits of increasing excise taxes on tobacco products/expediting the collection of excise taxes on tobacco products (unless the reason for increasing excise taxes is to save the tobacco program, in which case select Neutral – 12)
5) Arguments/evidence that the trend of cigarette smuggling can be attributed to tobacco taxes that are too low in some states
6) Arguments/evidence that tobacco smuggling causes states to lose their rightful tax revenue
7) Arguments/evidence of the tobacco industry's intention to circumvent the tobacco regulation process
8) Refutation of arguments/evidence of the dangers (economic, legal, ethical, constitutional, etc.) of regulation/taxes on tobacco products
9) Support for ban on cigarette sales in vending machines
10) Arguments/evidence that tobacco smuggling is encouraged by tobacco companies

E) Advertising

1) Support for stricter regulations/bans on advertising of tobacco products
2) Opposition to more lenient regulations on advertising of tobacco products
3) Arguments/evidence of growth of tobacco use among particular subsets of the population (women, minorities, youths)
4) Support for increased funding/increased advertising space/time for anti-tobacco advertisements
5) Opposition to efforts to reduce funding for anti-tobacco advertisements
6) Arguments/evidence of effectiveness of anti-tobacco advertisements

7) Support for disallowing business expense deductions for tobacco products advertising
8) Arguments/evidence that tobacco advertisements are effective in attracting new customers to use tobacco
9) Refutation of claims that tobacco advertisements only encourage brand switching and do not attract new customers to use tobacco
10) Arguments/evidence that tobacco advertisements target particular subsets of the population (women, minorities, youths)
11) Refutation of claims that 1st amendment rights are violated by restricting tobacco advertising
12) Arguments/evidence of effectiveness of banning tobacco advertisements on tobacco use
13) Opposition to/problems with advertising/promotion of tobacco products
14) Arguments/evidence that broadcasters/tobacco companies cannot self-regulate tobacco advertising
15) Arguments/evidence that pro-tobacco advertisements are more prevalent than anti-tobacco advertisements
16) Opposition to tobacco advertisements that distort scientific evidence about the health effects of tobacco use

F) Addiction/Tar and Nicotine Content

1) Support for/need for government to publicize tar and nicotine content (along with other ingredients) on tobacco products (Look at the reasoning behind this. If stated for health reasons, it is decidedly negative. If used to say that there is no reason to regulate tobacco tar and nicotine content, use in combination with A2 for a neutral piece of testimony)
2) Arguments/evidence of lack of effectiveness of cigarette filters in decreasing inhalation of smoke and tar
3) Support for establishing government standards to regulate the tar and nicotine content of tobacco products
4) Arguments/evidence of the addictive properties of tobacco
5) Arguments/evidence of U.S. tobacco companies' use of graduated nicotine levels to promote initial use of snuff and progression to increasingly potent brands
6) Arguments/evidence that the tobacco industry manipulates nicotine levels in cigarettes to ensure their products remain addictive
7) Support for classifying nicotine as a drug
8) Arguments/evidence of the harmful effects of tar and nicotine content of cigarettes

G) Educating Public about Tobacco Risks

1) Support for/need for increased attention to education on health risks of tobacco products
2) Support for warning labels on tobacco products/advertisements (including varying the message on the warning labels)

3) Arguments/evidence that the public is not sufficiently aware of risks of tobacco use
4) Support for/need for/effectiveness of anti-tobacco education campaigns
5) Support for placing hazard labels concerning tobacco use on other products (i.e. contraceptives, drugs, etc.)
6) Support for government support/funding of efforts to educate the public about the risks of tobacco use
7) Arguments/evidence that tobacco companies deliberately attempt to suppress information about the harmful effects of tobacco use

H) Pesticide Use

1) Opposition to use of pesticides on tobacco products
2) Arguments/evidence of the dangers involved with using pesticides on tobacco products
3) Support for applying pesticide standards applicable to U.S. tobacco farmers to crops imported into the U.S. in order to discourage the sale and use of tobacco products

I) Insurance

1) Support for industry practice of charging lower rates to individuals who do not use tobacco products
2) Opposition to takeover of insurance companies by tobacco companies

J) International Tobacco Market

1) Opposition to U.S. cigarette exports
2) Support for suspension of the tobacco barter program
3) Support for stricter trade barriers on tobacco products
4) Opposition to breaking down trade barriers on tobacco products
5) Refutation of arguments/evidence that the tobacco barter program was inappropriately suspended without proper notice to tobacco farmers
6) Opposition to increased Federal export credit and assistance for tobacco
7) Opposition to increased imports of tobacco products due to the harmful effects of tobacco use

K) Federal Tobacco Support Programs (i.e. Tobacco Price Support/Marketing Quota/Acreage Allotment System/etc.)

1) Opposition to tobacco subsidies
2) Arguments/evidence that tobacco support program costs money to taxpayers
3) Opposition to federal efforts to increase tobacco production/sales (i.e. price support programs)
4) Support for pricing policies/federal efforts that discourage tobacco production/sales
5) Support for strict limits on/cuts to tobacco acreage/poundage allotments

6) Arguments/evidence that the federal government is paying a disproportionate amount into the tobacco price support system compared to tobacco producers
7) Opposition to increasing the pay of tobacco graders to improve the process for tobacco farmers
8) Arguments/evidence that federal funds to promote the tobacco industry diverts funds from anti-tobacco programs
9) Support for using assessments paid by tobacco farmers to support the price support program for other purposes
10) Opposition to federal government support/funding/agreements with tobacco industry
11) Support for breaking tobacco farmers dependence on tobacco as a crop

L) Tobacco Settlement Agreement/Litigation

1) Arguments that tobacco settlement agreement is overly favorable to tobacco industry
2) Concerns that state tobacco settlement funds will be allocated to programs unrelated to tobacco use prevention
3) Support for provisions in tobacco settlement agreement that required tobacco companies to pay for anti-smoking programs
4) Opposition to compensating tobacco producers and farmers for adverse impact of tobacco settlement program
5) Support for provisions in tobacco settlement program requiring tobacco companies to pay penalties if declines in youth smoking are not realized
6) Support for requiring that attorney fees be paid by tobacco companies/opposition to allowing money from tobacco settlement agreements to be used to pay for attorney fees
7) Refutation of arguments/evidence stating harmful effects of tobacco settlement agreement on Native Americans
8) Inadequacy of tobacco industry payments mandated by settlement agreement
9) Support for settlement agreement public health provisions
10) Concerns about implications of agreement for current or future litigants in cases against the tobacco industry
11) Support for government-sponsored litigation against tobacco industry
12) Concerns that antitrust exemption in tobacco settlement agreement may give too much power to tobacco industry
13) Support for requiring tobacco companies to disclose internal documents
14) Support for enacting provisions preventing tobacco companies from seeking bankruptcy protection in order to avoid paying penalties to litigants in cases against tobacco industry

M) Economic Issues

1) Refutation of arguments/evidence stating the importance of tobacco industry to economy

Appendix D: Climate Change Testimony/Committee Member Statement Rubric

Pro Environment

A) General Regulatory Policy

1) Support for the precautionary principle (taking action on climate change before science has established that the problem is occurring)
2) Support for stricter regulation of carbon dioxide emissions
3) Opposition to more lenient regulation of carbon dioxide emissions
4) Support for classifying carbon dioxide as a pollutant
5) Support for economic penalties to discourage carbon dioxide emissions
6) Need for interagency cooperation on climate change issue
7) Criticism of climate change mitigation policies that do not go "far enough"
8) Support for requiring federal agencies to consider their impact on the environment
9) Support for more activity by federal agencies on the climate change issue
10) Support for mandatory commitments to reduce greenhouse gas emissions
11) Support for concrete greenhouse gas emission reduction goals
12) Support for cap and trade program
13) Evidence of state and local governments that have successfully enacted climate change mitigation measures
14) Arguments defending the constitutionality of climate change mitigation policies
15) Arguments/evidence that carbon sequestration (natural and manufactured) is not enough to mitigate climate change
16) Need for comprehensive climate change mitigation strategy

B) Agriculture/Plant Life/Natural Resources

1) Support for natural carbon sequestration (i.e. growing more trees and increasing the ability of the soil to sequester carbon dioxide) as a method to control carbon dioxide emissions if used in combination with other activities (i.e. stricter regulation) or while admitting that sequestration is not going to solve climate change by itself
2) Arguments/evidence that climate change affects food supply
3) Arguments/evidence of harmful effects of carbon dioxide on natural resources
4) Arguments/evidence that climate change negatively affects agricultural production
5) Arguments/evidence that climate change will have a negative effect on plants, trees, and forests
6) Arguments/evidence of negative impact of climate change on water supply
7) Arguments/evidence of negative impact of climate change on fisheries
8) Arguments/evidence of harmful effects of climate change on soil

C) General Scientific Arguments/Evidence

1) Arguments/evidence that the climate is changing
2) Arguments/evidence that climate change is caused by human activities
3) Arguments/evidence of glacial melting
4) Arguments/evidence that climate change reduces the ability of the ocean to absorb carbon dioxide
5) Arguments/evidence of negative impact of climate change on coastal areas
6) Arguments/evidence of connection of climate change to growth of greenhouse gases (particularly carbon dioxide) in the atmosphere
7) Arguments/evidence showing the urgency of climate change mitigation
8) Arguments/evidence of rise in sea level due to climate change
9) Arguments/evidence of the potential negative impact of changes in sea level due to climate change
10) Strengths and relative certainty of research showing the existence of climate change, its harmful effects, and or its relation to anthropogenic sources
11) Arguments/evidence that climate change will dissipate cloud cover leading to a positive feedback process that will increase severity of climate change
12) Arguments/evidence of relationship between climate change and increased incidence of natural disasters
13) Arguments/evidence that aerosols have dampened climate change trends, but will not continue to do so in the future
14) Critique of methodology used in studies arguing climate change is not occurring/effects of climate change are not severe/climate change is not related to anthropogenic sources
15) Arguments/evidence that solar flux will only exacerbate climate change issues caused by greenhouse effect

D) Energy/Fuel

1) Support for shifting from coal to alternative energy sources
2) Support for renewable energy sources
3) Arguments/evidence that fossil fuel use leads to climate fluctuations
4) Feasibility of alternative non-carbon emitting fuels in replacing fossil fuels
5) Role of insulation in reducing fossil fuel emissions
6) Support for increasing CAFÉ fuel efficiency standards
7) Support for imposing greenhouse gas emissions standards in automobiles
8) Support for increasing energy efficiency standards of products
9) Feasibility of increasing fuel efficiency of automobiles
10) Support for more efficient lighting systems/light bulbs
11) Support for more efficient energy management in buildings
12) Arguments/evidence that failing to mitigate climate change will lead to higher energy prices
13) Arguments/evidence that climate change mitigation will lead to lower energy prices
14) Arguments/evidence that climate change mitigation policies will lead to a wider array of energy sources and energy independence
15) Support for increased regulation of electricity/energy companies' emissions
16) Support for increased regulation of transportation industry's emissions

E) Economy

1) Emphasis on the financial risks of ignoring climate change
2) Arguments/evidence that climate change mitigation will not be significantly costly for the economy
3) Arguments/evidence that climate change leads to political/economic instability
4) Criticism of economic models showing high economic costs of climate change mitigation
5) Arguments/evidence that economic costs of climate change mitigation will be reasonable
6) Arguments/evidence of potential benefits to the economy of climate change mitigation
7) Potential benefits to the economy of energy efficiency
8) Arguments/evidence of positive impact of climate change mitigation policies on employment
9) Arguments/evidence that businesses can be economically competitive while taking climate change mitigation measures

F) Federal Funding/Support for Climate Change Research/Mitigation Programs

1) Support for increasing funding/support for climate change mitigation programs
2) Support for increasing funding/support for climate change research programs
3) Support for federal support of private sector production of automobiles with lower greenhouse gas emissions
4) Support for federal support/funding of renewable and clean energy technology research and development
5) Support for giving National Office of Climate Change Response authority over climate change research
6) Opposition to placing Department of Energy in change of climate change research programs

G) International Climate Change Policy

1) Support for stronger international climate change agreements
2) Need for international cooperation in climate research due to the global nature of climate change
3) Arguments/evidence of harmful impact of climate change on agricultural production, industrialization, and economic development of developing countries
4) Need for measures to encourage efficient energy use in developing countries
5) Need for sustainable development for third world countries
6) Need for U.S. leadership in reducing worldwide greenhouse gas emissions
7) Arguments/evidence that U.S. lags behind international community in climate change mitigation
8) Support for assistance to developing countries in reducing greenhouse gas emissions
9) Criticism of international climate change agreements as being too weak

H) Need for Climate Change Research

1) Need for more climate research to warn of the dangers of climate changes and mitigate its effects
2) Importance of programs studying climate change
3) Need for cooperation across different disciplines to address climate change
4) Need to focus on policy-oriented climate change research

I) Health

1) Arguments/evidence of negative impact of climate change on health

Neutral

1. Statement of information on climate change without any conclusive findings
2. Description of efforts to understand climate change without any conclusive findings or recommendations
3. Support for nuclear energy, bio-fuels, and clean coal as methods to mitigate climate change
4. Support for measures to encourage voluntary reductions in greenhouse gas emissions by businesses and individuals (if to support climate change mitigation efforts - probably a 1; if to show that efforts to control climate change are not necessary - maybe a 0 or -1 depending on opinions about climate change science; if no opinion on climate change – probably a 0)
5. Description of current climate change efforts without making recommendations
6. Statement of complexity of climate change issue
7. Support for requiring reporting measures for greenhouse gas emissions
8. Need for more climate monitoring
9. Evidence of businesses taking measures to mitigate climate change (if to support climate change mitigation efforts - probably a 1 if trying to emphasize the effectiveness of voluntary measures or a 2 if admitting the science of climate change and not explicitly calling for voluntary measures or even calling for mandatory CO2 emission reductions; if to show that efforts to control climate change are not necessary - maybe a 0 or -1 depending on opinions about climate change science; if no opinion on climate change – probably a 0)
10. Need for more research on the ability of oceans to absorb carbon dioxide
11. Statement of current climate change policy
12. Arguments over which types of forestry practices should be utilized to ameliorate climate change
13. Support for international climate change agreements with voluntary emission reduction goals
14. Support for joint implementation programs in international climate change agreements
15. Support for legislation enacting voluntary carbon sequestration programs as the sole method to combat climate change (need to also figure out the motives for supporting the programs)

Pro-Economy

A) General Regulatory Policy

1) Opposition to the precautionary principle (taking action on climate change before science has established that the problem is occurring)
2) Opposition to stricter regulation of carbon dioxide emissions
3) Support for more lenient regulation of carbon dioxide emissions
4) Opposition to classifying carbon dioxide as a pollutant
5) Opposition to economic penalties to discourage carbon dioxide emissions
6) Criticism of policies that go "too far" in attempting to mitigate climate change and end up hurting the economy as a result
7) Opposition to requiring federal agencies to consider their impact on the environment
8) Opposition to more federal activity by federal agencies on the climate change issue
9) Support for policies that emphasize the ability of the world to adapt to climate changes
10) Problems with using current climate change research as a basis for policy changes to mitigate climate change
11) Opposition to greenhouse gas emission reduction goals
12) Opposition to cap and trade program
13) Arguments/evidence of adverse impact of climate change mitigation on state and local governments
14) Arguments that certain climate change mitigation policies may be unconstitutional
15) Support for allowing greenhouse gas emissions to continue to rise

B) Agriculture/Plant Life/Natural Resources

1) Arguments/evidence that climate change does not affect food supply
2) Ability of agricultural community to respond to climate changes
3) Potential positive effects of increased greenhouse gas emissions on plants and animals
4) Arguments/evidence of adverse impact of mandatory greenhouse gas emissions standards on agriculture industry
5) Arguments/evidence that natural carbon sequestration activities will solve the climate change problem on their own

C) General Scientific Arguments/Evidence

1) Arguments/evidence that climate change is not a significant problem
2) Arguments/evidence that climate change is beneficial to the world
3) Arguments/evidence that climate change is not caused by anthropogenic sources
4) Arguments/evidence that solar energy flux is the primary reason for fluctuations in global temperatures and this flux will only be temporary
5) Arguments/evidence that the climate is not changing
6) Arguments/evidence that climate change trends are part of an overall climate cycle

7) Refutation of arguments/evidence that climate change reduces the ability of the ocean to absorb carbon dioxide
8) Refutation of arguments/evidence connecting climate change to growth of greenhouse gases (particularly carbon dioxide) in the atmosphere
9) Arguments/evidence that climate change is a gradual problem that does not require immediate attention
10) Critique of research finding evidence of climate change/harmful effects of climate change/climate change being related to anthropogenic sources
11) Critique of methodology used in studies arguing climate change is occurring/effects of climate change are severe/climate change is related to anthropogenic sources
12) Arguments/evidence of the ability of the world and its technology (particularly through the use of carbon sequestration practices and technology) to adapt to climate changes
13) Arguments/evidence that climate change will have no effect on cloud cover or may actually produce clouds that will lessen the severity of climate changes
14) Refutation of arguments/evidence of rise in sea level due to climate change
15) Refutation of arguments/evidence of the potential negative impact of changes in sea level due to climate change
16) Refutation of arguments/evidence of relationship between climate change and increased incidence of natural disasters

D) Energy/Fuel

1) Arguments/evidence that fuel efficiency standards have a constraining effect on the economy
2) Difficulties of increasing fuel efficiency standards of automobiles
3) Difficulties of replacing fossil fuels with non-carbon alternative energy sources
4) Arguments/evidence that climate change mitigation will lead to higher energy prices
5) Arguments/evidence of negative impact of climate change mitigation policies on energy companies
6) Arguments/evidence that climate change mitigation policies will limit U.S. electricity/energy supply
7) Arguments/evidence of negative impact of climate change mitigation policies on automotive industry
8) Arguments/evidence of negative impact of climate change mitigation policies on transportation industry

E) Economy

1) Arguments/evidence that businesses do not need to be influenced by economic penalties to voluntarily undertake climate change mitigation measures
2) Arguments/evidence that economic costs of climate change mitigation will be high
3) Criticism of economic models showing low to moderate costs of climate change mitigation

4) Arguments/evidence of economic benefits of climate change
5) Arguments/evidence of adverse economic effects of mandatory greenhouse gas emissions standards
6) Arguments/evidence of anticipated negative effects of mandatory greenhouse gas emissions standards on small businesses
7) Arguments/evidence of adverse impact of climate change mitigation on consumers
8) Arguments/evidence of climate change mitigation policies on employment
9) Arguments/evidence of negative impact of climate change mitigation policies on steel industry
10) Arguments/evidence of negative impact of climate change mitigation policies on construction industry
11) Arguments/evidence of negative impact of climate change mitigation policies on paper industry

F) Federal Funding/Support for Climate Change Research/Mitigation Programs

1) Opposition to increased funding of for climate programs
2) Support for placing Department of Energy in charge of climate change research programs
3) Opposition to placing National Office of Climate Change Response in charge of climate change research programs

G) International Climate Change Policy

1) Opposition to international climate change agreements imposing mandatory greenhouse gas emissions standards
2) Lack of need to cooperate with international community on climate change issue
3) Need for other countries (particularly third world countries) to agree to reduce greenhouse gas emissions in order for U.S. to agree to mandatory reductions in greenhouse gas emissions
4) Opposition to binding emissions targets for developed countries (i.e. the U.S.)
5) Opposition to non-binding emissions targets for developing countries
6) National security concerns involved with agreeing to international environmental agreements with mandatory greenhouse gas emission standards on some countries but not others
7) Arguments/evidence of the inability of the U.S. to reduce carbon emissions to specified caps set out in international climate change agreements

H) Need for Climate Change Research

1) Need for more climate research to ensure that there definitely is a problem before taking action
2) Lack of need to focus on policy-oriented climate change research

I) Health

1) Refutation of arguments/evidence of negative impact of climate change on health

Appendix E: Biotechnology Testimony/Committee Member Statement Rubric

Pro-Biotechnology

A) Agricultural Biotechnology/Genetically Modified Organisms

1) Arguments/evidence of safety of GMO consumption
2) Opposition to stricter regulation of agricultural biotechnology research/applications/GMO's/food products
3) Support for more lenient/more flexible regulation of agricultural biotechnology research/applications/GMO's/food products
4) Ability of agricultural biotechnology to alleviate hunger in poor communities
5) Support for federal funding/support of agricultural biotechnology research
6) Need for/support for more manpower/training for agricultural biotechnology research
7) Benefits (agricultural, health, medical, scientific, economic, etc.) of agricultural biotechnology research/applications/GMO's/food products
8) Support for improving U.S. competitiveness in international GMO/agricultural biotechnology market
9) Opposition to international agreements regulating GMO's
10) Support for more lenient trade barriers on GMO's
11) Opposition to stricter trade barriers on GMO's
12) Arguments/evidence that biotechnology is superior to/safer than other methods for improving the agricultural industry
13) Refutation of arguments/evidence stating problems and risks (ethical, environmental, health, scientific, economic, etc.) associated with GMO's/agricultural biotechnology research/food products
14) Need to/support for overcoming barriers to agricultural biotechnology research and development
15) Support for private sector support/investment in agricultural biotechnology research and development
16) Opposition to bans on GMO's/agricultural biotechnology research/food products
17) Arguments/evidence that agricultural biotechnology research and development will reduce harm to the environment
18) Need to/support for dissemination of biotechnology research and applications
19) Arguments/evidence that genetically modified organisms must be released into the environment to test their effects
20) Arguments/evidence of the potential of biotechnology research and development to decrease agricultural surpluses by allowing farmers to engineer new products out of plants and crops
21) Refutation of arguments/evidence that that biotechnology research will hurt the agricultural industry
22) Need for/support for more basic research in agricultural biotechnology
23) Arguments/evidence stating benefits (agricultural, health, economic, etc.) of plant genome project

24) Support for federal funding/support of plant genome project
25) Opposition to requiring the placement of labels on agricultural products produced by biotechnology methods
26) Arguments/evidence of the harm done to the agricultural biotechnology industry by groups exaggerating the risks associated with GMO's/agricultural biotechnology research/food products
27) Support for GMO's/agricultural biotechnology research/food products
28) Opposition to classifying biotechnology products as plant pesticides for regulatory purposes
29) Refutation of arguments/evidence stating risks of deliberately introducing GMO's into the environment

B) Cloning

1) Potential benefits (scientific, medical, etc.) of human reproductive cloning
2) Importance of using cloning to produce embryonic stem cells to use in medical research
3) Criticism of arguments that biotechnology research will lead to human reproductive cloning
4) Criticism of arguments that cloning of other species/therapeutic cloning will lead to reproductive cloning of humans
5) Arguments/evidence of potential benefits (medical, scientific, societal, agricultural, etc.) of general cloning (i.e. therapeutic cloning)
6) Opposition to cuts/total ban on public funding of human reproductive cloning research
7) Support for increases in public funding of human reproductive cloning research
8) Opposition to ban on human reproductive cloning research
9) Arguments/evidence of ability of scientists to voluntarily refrain from human reproductive cloning research
10) Arguments/evidence that the risks of cloning are overstated
11) Support for increases in public funding for general cloning research
12) Opposition to ban on general cloning research
13) Opposition to strict governmental guidelines/regulations governing cloning research
14) Opposition to permanent ban on cloning research and development
15) Support for cloning of human embryos
16) Refutation of ethical and religious arguments against human cloning/refutation of arguments/evidence stating safety risks of human reproductive cloning
17) Benefits (medical, scientific, societal, agricultural, etc.) of cloning human embryos
18) Opposition to ban on cloning human embryos
19) Refutation of arguments/evidence stating risks of cloning human embryos
20) Refutation of arguments/evidence stating risks of general cloning research
21) Support for human reproductive cloning research and development
22) Support for general cloning research and development
23) Opposition to penalizing individuals who receive treatments developed through cloning methods

24) Arguments/evidence that human embryo cloning is not synonymous with human reproductive cloning

C) Stem Cell Research

1) Support for stem cell research and the practical use of stem cells
2) Benefits (medical, scientific, agricultural, etc.) of stem cell research
3) Opposition to ban on/cuts in government funding/support of stem cell research
4) Support for embryonic stem cell research
5) Arguments/evidence that stem cell research will not lead to human cloning
6) Need to use embryonic stem cells in stem cell research
7) Support for/need for more federally approved cell lines for embryonic stem cell research (i.e. existing stem cells have been contaminated with mouse feeder cells)
8) Arguments/evidence of the benefits of using excess in vitro fertilization embryos for stem cell research (i.e. the embryos will be destroyed and not put to use if they are not used)
9) Opposition to ban on human embryonic/stem cell research and development
10) Refutation of arguments/evidence that the benefits of human embryonic stem cell research and development can be more effectively/ethically achieved through other methods (i.e. limiting stem cell research and development to the study of adult stem cells)
11) Arguments/evidence that stem cell research does not fall under the ban on human embryo research
12) Refutation of arguments/evidence stating the risks of/ethical arguments against stem cell research
13) Support for government funding/support of stem cell research
14) Arguments/evidence that proper safeguards have been/can be instituted to ameliorate risks of stem cell research
15) Support for lifting funding ban on human embryo research in order to allow for federal funding of stem cell research
16) Refutation of arguments/evidence stating problems and risks (ethical, religious, medical, scientific, legal, etc.) related to using human embryos in stem cell research
17) Benefits (medical, scientific, agricultural, etc.) of using human embryos in stem cell research
18) Ethical problems with not supporting stem cell research
19) Support for government funding/support of general stem cell research
20) Support for the deliberate creation of embryos for research purposes
21) Support for government funding/support of human embryonic stem cell research

D) Industrial Biotechnology Research

1) Support for industrial biotechnology research and applications
2) Benefits/practical uses (medical, commercial, scientific, environmental, etc.) of industrial biotechnology research

3) Support for making U.S. more competitive in international industrial biotechnology market
4) Support for federal funding/support of industrial biotechnology research

E) Tissue Research

1) Support for human tissue research
2) Benefits (scientific, medical, etc.) of human tissue research
3) Support for federal funding/support of human tissue research
4) Potential/realized medical benefits of fetal tissue transplantation research
5) Support for public funding/support of fetal tissue transplantation research
6) Opposition to decreased public funding/ban on public funding of fetal tissue transplantation research
7) Ethical problems with not supporting fetal tissue transplantation research
8) Criticism of arguments that express ethical problems associated with fetal transplantation research (i.e. research will encourage women to get abortions, claims of the sanctity of the lives of unborn fetuses, etc.)
9) Refutation of arguments/evidence stating risks of fetal tissue transplantation research
10) Arguments/evidence that proper safeguards have been/can be instituted to guard against risks of fetal tissue transplantation research
11) Arguments/evidence stating risks of not funding fetal tissue transplantation research
12) Arguments/evidence that fetal tissue transplantation research provides uniquely superior medical benefits than alternative methods
13) Opposition to ban on fetal tissue transplantation research

F) Somatic Cell Nuclear Transfer Research

1) Support for somatic cell nuclear transfer research
2) Benefits (scientific, medical, ethical, etc.) of somatic cell nuclear transfer research
3) Support for federal funding/support of somatic cell nuclear transfer research
4) Opposition to bans on somatic cell nuclear transfer research and development
5) Arguments/evidence that somatic cell nuclear transfer research and development is not synonymous with human cloning/will not necessarily lead to human cloning
6) Refutation of arguments/evidence that benefits of somatic cell nuclear transfer research and development can be more effectively/ethically achieved by other means
7) Refutation of arguments/evidence stating risks and dangers of somatic cell nuclear transfer research
8) Arguments/evidence that proper safeguards have been/can be instituted to guard against risks of somatic cell nuclear transfer research and development

G) Economic/Commercialization Issues

1) Support for making biotechnology products more accessible to the public

2) Arguments/evidence of importance of biotechnology research and development to economic development
3) Support for making U.S. more competitive in international biotechnology market
4) Support for commercialization of biotechnology
5) Anticipated/realized biotechnology commercial applications
6) Support for/need to overcome barriers to biotechnology commercialization
7) Support for federal stimulation of biotechnology commercialization
8) Support for international cooperation to speed up development of commercial applications of biotechnology research and development

H) Genetic Sequencing Research and Development

1) Support for public and private human genome research
2) Support for genomic invention
3) Successes of human genome project
4) Arguments/evidence that gene therapy will not lead to more ethically objectionable biotechnology research and development (i.e. human cloning, positive eugenics, etc.)
5) Support for federal funding/support of human genome project
6) Potential/realized benefits (medical, societal, scientific, economic, environmental, agricultural, etc.) of human genome project
7) Support for human genome project
8) Support for international cooperation in human genome project implementation
9) Support for patterning gene sequences
10) Refutation of ethical arguments against patterning gene sequences
11) Support for human genome diversity project
12) Benefits (scientific, medical, societal, etc.) of human genome diversity project
13) Support for gene therapy
14) Opposition to stricter regulation of gene therapy
15) Benefits (scientific, medical, agricultural, etc.) of gene therapy and gene transfer applications
16) Arguments/evidence that genetic information will be kept confidential
17) Remedies for discriminatory uses of genetic information
18) Benefits (medical, scientific, societal, etc.) of using genetic tests to predict diseases
19) Arguments/evidence of safety of genetic testing/human genome research/recombinant DNA research
20) Support for recombinant DNA research
21) Benefits (scientific, medical, societal, etc.) of recombinant DNA research
22) Refutation of arguments/evidence stating risks (ethical, scientific, medical, environmental, legal, etc.) of genetic engineering
23) Arguments/evidence of benefits (medical, societal, scientific, agricultural, etc.) of genetic engineering
24) Refutation of arguments/evidence stating risks (ethical, scientific, medical, environmental, legal, etc.) of recombinant DNA research and development
25) Arguments/evidence that genetic exchange is a natural process

26) Benefits (medical, scientific, agricultural) of embryonic transfer
27) Support for the use of genetic biotechnology research and development for enhancement purposes
28) Refutation of arguments/evidence stating risks (ethical, scientific, medical, environmental, legal, etc.) of gene therapy and gene transfer applications
29) Support for genetic screening programs
30) Refutation of concerns that biotechnology research and development will lead to the genetic manipulation of human behavior
31) Support for making U.S. more competitive in human genetic research
32) Refutation of arguments/evidence stating risks involved with human genome project
33) Benefits of using DNA information to law enforcement activities
34) Refutation of arguments/evidence stating dangers (medical, societal, ethical, safety, etc.) of using genetic tests to predict disease

I) Patent/Privacy Issues

1) Need for genomic invention patents
2) Support for protection of patent rights of biotechnology researchers
3) Opposition to moratorium on patenting of genetic structures
4) Support for patenting of genetic structures
5) Support for expediting private sector patent applications arising from biotechnology research/support for a more efficient patent application process
6) Support for protection of trade secret data generated by biotechnology research
7) Opposition to exempting certain groups from genetic structure patent liability
8) Refutation of arguments/evidence stating risks of patenting genetic structures
9) Support for patenting stem cells
10) Support for allowing the Patent and Trademark Office to keep its user fees in order to ensure a higher quality patent process for biotechnology research and development
11) Benefits (medical, ethical, economic, legal, etc.) of patenting genetic structures/protection of patent rights for biotechnology researchers/risks (economic, medical, legal, etc.) of not protecting patent rights for biotechnology researchers
12) Arguments/evidence of the constitutionality of patenting genetic structures
13) Refutation of arguments/evidence stating problems (ethical, legal, etc.) involved with patenting of genetic structures/protection of proprietary biotechnology information
14) Refutation of arguments/evidence that legislation is not necessary to provide necessary patent protection to entities engaging in biotechnology research and development
15) Arguments/evidence of delays in patent approvals for products developed through biotechnology research and development/problems involved with patent delays
16) Refutation of arguments/evidence that delays in patent approval for products developed through biotechnology research and development are the fault of

biotechnology companies (i.e. excessive litigation, not using means available to them to reduce patent time, etc.)

17) Arguments/evidence that biotechnology research and development is sufficiently open to the public

J) General Biotechnology Research and Development

1) Benefits (agricultural, economic, scientific, medical, etc.) of biotechnology research and development
2) Support for biotechnology research and development
3) Support for preserving freedom of scientific inquiry
4) Arguments/evidence of progress made by biotechnology research
5) Arguments/evidence of the practical application of biotechnology research
6) Support for overcoming barriers impeding biotechnology research and development
7) Opposition to considering the immediate benefits to the public of all scientific research
8) Need for more manpower/training for biotechnology research
9) Arguments/evidence that traditional methods of solving problems are not as effective as biotechnology research and applications could be/are in solving these problems
10) Opposition to precautionary principle when considering whether or not to conduct biotechnology research and development
11) Refutation of arguments/evidence stating risks (agricultural, scientific, medical, societal, safety, environmental, etc.) of biotechnology research
12) Support for making U.S. more competitive in basic biotechnology research
13) Concerns that definitions of biotechnology-related concepts are overly negative toward the biotechnology industry
14) Criticism of the qualifications of those critiquing biotechnology research and development
15) Arguments/evidence of the need to educate the public to understand the benefits/safety of biotechnology research and development
16) Need for/support for more basic research in biotechnology
17) Support for/need for better technology to assist biotechnology research and development efforts
18) Concerns that the anti-biotechnology side in the debate is hiding information from the pro-biotechnology side
19) Arguments/evidence of the harm done to the biotechnology industry by groups exaggerating the risks associated with biotechnology research and development

K) General Guidelines and Regulation of Biotechnology Research and Development

1) Opposition to stricter governmental guidelines on biotechnology research
2) Support for more lenient/more flexible/simpler governmental guidelines on biotechnology research

3) Arguments/evidence that necessary safeguards are used when conducting biotechnology research
4) Adequacy/overly restrictive nature of current guidelines/regulatory structure for protection against dangers of biotechnology research
5) Opposition to interim and total bans on biotechnology research and development
6) Arguments/evidence that researchers in public and private sector entities will voluntarily comply with federal guidelines
7) Arguments/evidence that researchers in public and private sector entities can engage in self-regulation
8) Opposition to rigorous monitoring and enforcement mechanisms to govern biotechnology research
9) Support for looser penalties for violating federal biotechnology research and development guidelines
10) Opposition to stricter penalties for violating federal biotechnology research and development guidelines
11) Opposition to allowing states/localities to have the priority to enact statutes beyond federal biotechnology regulatory standards
12) Arguments/evidence of the dangers of over-regulation of biotechnology research
13) Arguments/evidence of the difficulty of ensuring scientific accountability to the public
14) Arguments/evidence that regulating biotechnology research is unconstitutional
15) Adequacy of scientific community self-regulation in mitigating biotechnology risks
16) Opposition to strict regulation of biotechnology techniques applied to human beings
17) Support for more lenient regulation of biotechnology techniques applied to human beings
18) Concerns about/opposition to banning new technologies
19) Arguments/evidence of sufficient containment procedures
20) Opposition to considering human values in scientific policymaking
21) Opposition to involving the public in all scientific safety decisions
22) Opposition to state, local, and federal governmental involvement in/control over/regulation of biotechnology research
23) Opposition to the precautionary principle when designing/considering regulation of biotechnology research and development
24) Opposition to holding scientists liable for damages of research that are not their fault
25) Support for regulations that only require voluntary compliance
26) Opposition to bans on biotechnology techniques applied to human beings
27) Opposition to requiring licensing to undertake biotechnology research and development
28) Opposition to international standards regulating biotechnology research
29) Opposition to strict liability standards
30) Opposition to international agreements regulating biotechnology research
31) Opposition to allowing any citizen to sue a biotechnology researcher for perceived violations of biotechnology regulations

32) Arguments/evidence of sufficient monitoring and enforcement of biotechnology research guidelines
33) Opposition to regulating biotechnology research and applications as "tools" or "processes"/support for regulating the effects of biotechnology research and applications on a case by case basis
34) Importance of having scientific assessments back up regulatory guidelines of biotechnology research and development so that no regulatory delays occur
35) Support for having regulation of biotechnology carried out by a friendly administrative agency to biotechnology (i.e. Department of Agriculture, NIH, etc.)
36) Opposition to having regulation of biotechnology carried out by an unfriendly administrative agency to biotechnology (i.e. Environmental Protection Agency)
37) Support for exempting certain biotechnology applications from regulatory review
38) Opposition to regulations requiring biotechnology researchers and developers to obtain insurance before conducting biotechnology research and development
39) Arguments/evidence of the dangers of over-complexity/insufficient clarity of regulatory environment/support for clarifying regulatory environment
40) Arguments/evidence of public opinion noting the popularity of biotechnology research and development/lack of need for regulation of biotechnology research and development
41) Need for more funding of regulatory agencies to ensure that biotechnology products can be evaluated and make their way to the market more quickly
42) Support for allowing groups sympathetic to biotechnology (i.e. scientists, farming groups, etc.) to serve on advisory committees governing biotechnology regulation/funding
43) Arguments/evidence that regulation can cause delay in biotechnology research and development/need to overcome regulatory delays in biotechnology research and development
44) Opposition to price controls placed on biotechnology products
45) Opposition to applying biotechnology regulations to all entities engaging in biotechnology research and development
46) Support for more lenient trade barriers on biotechnology products (i.e. allowing the export of unapproved new drugs)/benefits of applying more lenient trade barriers to biotechnology products
47) Opposition to stricter trade barriers on biotechnology products (i.e. not allowing the export of unapproved new drugs)/risks of applying stricter trade barriers to biotechnology products

L) Support/Investment in Biotechnology Research and Development

1) Support for private sector support/investment in biotechnology research and development
2) Support for tax credits to encourage private sector investment in biotechnology research and development
3) Support for public funding/support of biotechnology research and development

4) Need to/support for overcoming capital access problems of biotechnology companies
5) Support for longer, more sustained, and more easily accessible federal monetary support of biotechnology research and development
6) Need for/support for greater funding of public sector biotechnology research and development
7) Benefits of public sector support/investment in biotechnology research and development
8) Support for diverting federal funds/support from other scientific endeavors into biotechnology research and development
9) Refutation of arguments questioning the constitutionality of federal efforts to assist the biotechnology industry
10) Arguments/evidence that the costs of conducting biotechnology research and development can be cut down
11) Refutation of claims that funds for biotechnology funds divert funds from other scientific endeavors
12) Need for infrastructure to be put in place for biotechnology industry to flourish
13) Support for federal stimulation of private sector investment in biotechnology research and development

M) General Health

1) Potential of biotechnology research to reduce health care costs
2) Arguments/evidence of medical benefits of biotechnology research
3) Arguments/evidence that biotechnology applications are not likely to cause an epidemic
4) Arguments/evidence of biotechnology research's ability to assist in curing diseases, especially genetic diseases
5) Potential/realized pharmacological benefits of biotechnology research
6) Arguments/evidence of potential and realized health benefits of biotechnology techniques applied to human beings
7) Arguments/evidence that many diseases are genetic and may be able to be solved through genetic methods
8) Arguments/evidence that proper guidelines are in place to ensure the protection of the rights of subjects of medical biotechnology research and development
9) Opposition to informing all subjects of the potential commercial applications of the donations that are making/giving these subjects proceeds from the research
10) Arguments/evidence of potential uses of biotechnology to test the health and safety of food
11) Arguments/evidence of the potential ability of biotechnology to diagnose diseases
12) Support for insurance company/Medicare coverage of drugs/therapies/etc. produced by biotechnology research and development
13) Arguments/evidence placing the blame for rising biotechnology costs on pharmaceutical companies

N) Environmental

1) Arguments/evidence that biotechnology research is not environmentally harmful
2) Arguments/evidence of potential advantages of biotechnology applications to hazardous waste disposal
3) Support for taking/need to take biotechnology applications seriously as a potential method for hazardous waste disposal
4) Arguments/evidence that biotechnology research and development may help solve certain environmental problems
5) Arguments/evidence that biotechnology research may be used to develop renewable energy sources
6) Support for government funding/support of environmental biotechnology research and development
7) Refutation of arguments/evidence stating risks of biotechnology applications to hazardous waste disposal

O) General Risks and Dangers

1) Arguments/evidence of safety of biotechnology research
2) Lack of scientific basis for public concern regarding harmful effects of biotechnology research
3) Proof of occupational safety of biotechnology research
4) Capability of researchers to safely conduct biotechnology research
5) Refutation of arguments/evidence stating risks of biotechnology research and development
6) Presentation of risk-benefit analyses showing that benefits outweigh risks of biotechnology research
7) Evidence that rights of subjects of biotechnology research are respected
8) Arguments/evidence that researchers must be sufficiently trained to engage in biotechnology research
9) Arguments/evidence that sufficient scientific research has already been conducted on risks of biotechnology research/sufficient funds have been spent on research on risks
10) Arguments/evidence that sufficient consideration of risks were considered prior to constructing regulations of biotechnology research and development
11) Opposition to placing the burden of proving the safety of biotechnology research and development on those who are profiting from the research and development

P) Psychological/Behavioral Biotechnology Research and Development

1) Arguments/evidence that concerns about the capacity of biotechnology techniques to manipulate human behavior are overstated
2) Arguments/evidence of the potential of biotechnology techniques to treat psychological disorders

Q) Private Sector-University-Public Sector Cooperation

1) Support for cooperation between university and private sector in biotechnology research and development

2) Benefits (societal, health, scientific, economic, etc.) of industry-university biotechnology research and development collaboration
3) Support for government stimulation of industry-university biotechnology research and development
4) Examples of innovation as the result of industry-university cooperation
5) Merits of cooperation between federal government, universities, and the private sector
6) Refutation of arguments/evidence stating the dangers (ethical, societal, etc.) of federal support/funding of industry-university biotechnology research and development
7) Refutation of arguments/evidence stating the dangers (ethical, societal, etc.) of industry-university biotechnology research and development
8) Arguments/evidence that sufficient controls are put in place to guard against the risks/dangers of industry-university biotechnology research and development
9) Arguments/evidence that industry-university biotechnology research and development collaboration does not inhibit universities to conduct research as they please
10) Opposition to regulation of industry-university biotechnology research and development
11) Refutation of arguments/evidence that graduate students are exploited when conducting industry-university biotechnology research and development
12) Support for/need for technology/information transfer programs/need to overcome barriers to technology transfer/evidence that companies that patent biotechnology will share their information with others
13) Need for coordination among actors conducting/overseeing biotechnology research and development in order to ensure that research goals are more quickly achieved
14) Support for federal stimulation of interdisciplinary research
15) Support for/benefits of university-government biotechnology research and development collaboration
16) Support for/benefits of cooperation between federal government, universities, and the private sector
17) Support for industry-government biotechnology research and development
18) Benefits (societal, health, scientific, economic, etc.) of industry-government biotechnology research and development
19) Support for collaboration between U.S. scientists and scientists from other countries

R) Marine Biotechnology

1) Support for marine biotechnology research and development
2) Benefits (medical, scientific, food, environmental, economic, etc.) of marine biotechnology research and development
3) Support for government funding/support of marine biotechnology research and development
4) Support for improving U.S. competitiveness in international marine biotechnology market

S) Biological Weapons

1) Support for use of biotechnology research in biological weapons development
2) Benefits (national defense, etc.) of use of biotechnology research in biological weapons development
3) Refutation of concerns about the use of biotechnology research in biological weapons development
4) Arguments/evidence that biotechnology research and development can be successfully utilized to defend against biological weapons

T) Reproductive Biotechnology Research and Development

1) Refutation of concerns about the use of genetic information to inform reproductive decisions
2) Refutation of arguments/evidence stating the dangers (ethical, medical, health, etc.) of biotechnology research and development utilized for reproductive purposes
3) Support for biotechnology research and development utilized for reproductive purposes
4) Benefits (agricultural, medical, etc.) of biotechnology research and development utilized for reproductive purposes

U) Animal Biotechnology Research

1) Arguments/evidence stating benefits (agricultural, medical, economic, pharmaceutical, etc.) of transgenic (genetically altered) animal research and development
2) Refutation of arguments/evidence stating risks (ethical, economic, environmental, health, ethical, etc.) of transgenic (genetically altered) animal research and development
3) Refutation of concerns about the welfare of animals that are the subject of transgenic (genetically altered) animal research and development
4) Opposition to stricter regulation of transgenic (genetically altered) animal research and development
5) Support for transgenic (genetically altered) animal research and development
6) Benefits (medical, societal, scientific, economic, agricultural, etc.) of animal genome projects
7) Support for animal genome projects
8) Support for federal funding/support of transgenic (genetically altered) animal research and development
9) Benefits (agricultural, economic, health, etc.) of using bovine growth hormone
10) Support for the use of bovine growth hormone
11) Refutation of arguments/evidence stating risks (health, environmental, ethical, safety, economic, agricultural, etc.) of using bovine growth hormone
12) Support for government funding/support of bovine growth hormone research and development

13) Support for/benefits (educational, economic, health, agricultural, etc.) of research on bovine growth hormone

Neutral

1. Support for interdisciplinary communication in developing biotechnology regulations and standards
2. Statement of technical/explanatory information about biotechnology/debate over biotechnology without any conclusive finding
3. Description of efforts to understand biotechnology without any conclusive findings or recommendations
4. Statement of both sides of the argument on the biotechnology issue without taking a firm side on the issue
5. Quest for more information about the topic of biotechnology/support for more research on biotechnology risks and benefits
6. Statement of proposed/current guidelines/regulatory structure governing biotechnology research without advocacy/opposition of the guidelines
7. Contradictory comments that suggest both support for and opposition to certain provisions of legislation concerning biotechnology research and development
8. Support for educating the public about biotechnology
9. Arguments/evidence that risk-benefit analyses would be inconclusive in determining the risks and benefits of biotechnology research/presentation of inconclusive risk-benefit analyses concerning biotechnology research
10. Arguments/evidence that there is no clear precedent supporting either side in the debate over first amendment protection of biotechnology research
11. Support for regulation of biotechnology applications while opposing regulation of biotechnology basic research
12. Need for balance between safety of research and freedom of scientific inquiry
13. Support for licensing institutions to engage in biotechnology research while opposing licensing of individuals to engage in biotechnology research
14. Need for balance between safety concerns and protection of proprietary information
15. Need to balance benefits and risks of cooperation between university and private sector in biotechnology research and development
16. Statement on the timetables in which biotechnology applications can be reasonably expected to be realized
17. Statement of how violators of biotechnology guidelines have been dealt with
18. Need to produce policies that balance risks and benefits of biotechnology research
19. Need to balance risks and benefits of biotechnology research
20. Statement of consequences of biotechnology research and development that are neither positive nor negative effects
21. Statement of information on the economic impacts of biotechnology on the agricultural industry without taking a stance on the desirability of these impacts
22. Concerns about the priorities of biotechnology research (still seems to be optimistic about the benefits of the research, but is concerned that the tool is not utilized in the right ways)
23. Description of methodology of biotechnology studies/risk assessments
24. Support for funding of basic research but not applied research

25. Arguments/evidence of public opinion stating the need to balance risks and benefits of biotechnology research and development
26. Need for more communication amongst different actors in biotechnology research, development, and regulation
27. Need to question where to place biotechnology research in terms of federal funding priorities
28. Need for restructuring of relationships amongst different agencies concerning biotechnology research and development
29. Arguments/evidence that biotechnology will make a large impact on society without saying whether this impact will be good or bad
30. Support for funding of biotechnology research and development up until no progress is evident, at which time funding is revoked
31. Arguments/evidence that biotechnology advisory bodies giving advice over regulatory decisions should be populated with many different sets of actors with different vested interests in the biotechnology debate
32. Information on the federal government's investment in biotechnology research and development without any commentary on the suitability of this funding
33. Information on the economic status of biotechnology research and development without commentary on whether the development in the biotechnology industry should be encouraged
34. Information about current patent situation in biotechnology industry without any commentary on the suitability of the situation
35. Need for definitions of biotechnology concepts
36. Statements by agency officials noting that they are considering shifting funding to support biotechnology research, but no firm commitment
37. Need to balance risks and benefits of protecting patent rights for biotechnology research and development
38. Support for reducing the costs of biotechnology research and development
39. Support for policies prohibiting insurance companies from denying coverage based on information obtained from genetic tests
40. Support for policies that ensure the confidentiality of genetic information
41. Arguments/evidence of the need to educate the public to understand both the risks and benefits of biotechnology research and development
42. Support for standard that genomic inventions must be useful for them to be patentable
43. Support for clarification of patent law concerning biotechnology application
44. Support for policies prohibiting the discriminatory use of genetic information
45. Description of alternative methods of obtaining stem cells without taking stance on whether these methods should replace traditional methods of obtaining stem cells
46. Need to run studies to assess the effectiveness of regulatory framework
47. Concerns about the validity of techniques that claim to not destroy human embryos (focus more on the intent behind the remarks)
48. Support for legislation seeking to provide funding for embryonic stem cell research that does no harm to the human embryo (focus more on the intent behind the remarks)

49. Lack of need for/opposition to policies prohibiting insurance companies from denying coverage based on information obtained from genetic tests
50. Lack of need for/opposition to policies that ensure the confidentiality of genetic information
51. Need to balance risks and benefits of patent protection for biotechnology research and development
52. Concerns about the validity/ethical nature of specific studies using biotechnology techniques (need to look at whether this information is used to defend or attack biotechnology research and development)
53. Lack of need for/opposition to policies prohibiting the discriminatory use of genetic information

Anti-Biotechnology

A) Agricultural Biotechnology/Genetically Modified Organisms

1) Support for stricter regulation of GMO's/agricultural biotechnology research/food products
2) Opposition to more lenient regulation of GMO's
3) Problems and risks (ethical, environmental, health, scientific, economic, etc.) associated with GMO's/agricultural biotechnology research/food products
4) Concerns about safety of GMO consumption
5) Opposition to federal funding/support of GMO's/agricultural biotechnology research/food products
6) Opposition to improving U.S. competiveness in international GMO market
7) Support for international agreements regulating GMO's
8) Opposition to more lenient trade barriers on GMO's
9) Support for stricter trade barriers on GMO's
10) Arguments/evidence that the benefits of GMO's/agricultural biotechnology are overstated
11) Arguments/evidence that benefits of agricultural biotechnology research can be achieved more effectively through the use of alternative methods
12) Opposition to private sector support/investment in agricultural biotechnology research and development
13) Support for bans on GMO's/agricultural biotechnology research/food products
14) Refutation of arguments/evidence that biotechnology research and development will actually reduce harm to the environment
15) Arguments/evidence that biotechnology research will hurt the agricultural industry
16) Refutation of arguments/evidence that genetically modified organisms must be released into the environment to test their effects
17) Refutation of arguments/evidence stating benefits (agricultural, health, economic, etc.) of plant genome project
18) Opposition to federal funding/support of plant genome project
19) Need for/support for requiring the placement labels on agricultural products produced by biotechnology methods
20) Need for/support for requiring biotechnology companies to pay for testing programs to separate genetically engineered products from natural products
21) Support for classifying biotechnology products as plant pesticides for regulatory purposes
22) Arguments/evidence stating risks of deliberately introducing GMO's into the environment

B) Cloning

1) Religious and ethical arguments against human reproductive cloning
2) Opposition to human reproductive cloning research and development
3) Concerns that cloning of other species/therapeutic cloning will lead to reproductive cloning of humans

4) Support for cuts/total ban on public funding/support of human reproductive cloning research
5) Support for total prohibition of human reproductive cloning research
6) Support for strict governmental guidelines/regulations governing cloning research
7) Concerns that cloning of any kind will lead to human reproductive cloning
8) Safety risks associated with human reproductive cloning
9) Opposition to using cloning to produce embryonic cells for use in medical research
10) Risks (ethical, scientific, medical, environmental, legal, etc.) of cloning in general
11) Support for ban on general cloning research
12) Refutation of arguments/evidence stating benefits of human reproductive cloning research and development
13) Refutation of arguments/evidence stating benefits of general cloning research and development
14) Support for permanent ban on cloning research and development
15) Opposition to cloning of human embryos
16) Arguments/evidence stating risks and dangers (ethical, safety, medical, etc.) of cloning of human embryos
17) Arguments/evidence that cloning of human embryos is human reproductive cloning
18) Support for ban on cloning human embryos
19) Refutation of arguments/evidence stating benefits of cloning research and development using human embryos
20) Arguments/evidence stating benefits of cloning can be more effectively/ethically achieved through alternative methods
21) Environmental arguments against human reproductive cloning
22) Opposition to public funding/support of general cloning research and development
23) Opposition to public funding/support of embryonic cloning research and development

C) Stem Cell Research

1) Opposition to stem cell research and the practical use of stem cells
2) Problems and risks (ethical, religious, medical, scientific, legal, etc.) related to stem cell research
3) Support for ban on/cuts in government funding/support of stem cell research
4) Lack of necessity of/opposition to embryonic stem cell research
5) Arguments/evidence that stem cell research will lead to human cloning
6) Lack of need/opposition to the federal approval of more cell lines for embryonic stem cell research
7) Arguments against using excess in vitro fertilization embryos for stem cell research (i.e. embryos can be adopted by parents)
8) Support for ban on human embryonic/stem cell research and development

9) Arguments/evidence that the benefits of human embryonic stem cell research and development can be more effectively/ethically achieved through other methods (i.e. limiting stem cell research and development to the study of adult stem cells)
10) Arguments/evidence that stem cell research does fall under the ban on human embryo research
11) Opposition to the deliberate creation of embryos for research purposes
12) Opposition to lifting funding ban on human embryo research in order to allow for federal funding of stem cell research
13) Problems and risks (ethical, religious, medical, scientific, legal, etc.) related to using human embryos in stem cell research
14) Arguments/evidence that the benefits of embryonic stem cell research and development have been overstated
15) Arguments/evidence that proper safeguards have not been/cannot be instituted to ameliorate risks of stem cell research

D) Industrial Biotechnology Research

1) Opposition to industrial biotechnology research and development
2) Problems (ethical, medical, scientific, etc.) associated with industrial biotechnology research and development
3) Opposition to making U.S. more competitive in international industrial biotechnology market
4) Opposition to federal funding/support of industrial biotechnology research

E) Tissue Research

1) Support for ban on/decreased federal funding/support of fetal tissue transplantation research
2) Statement of problems (ethical, legal, social, scientific, etc.) associated with fetal tissue transplantation research
3) Arguments/evidence of potential increases in voluntary abortions associated with fetal tissue transplantation research
4) Opposition to human tissue research
5) Risks (ethical, medical, etc.) of human tissue research
6) Opposition to federal funding/support of human tissue research
7) Refutation of arguments stating benefits of fetal tissue transplantation research
8) Arguments/evidence that the health benefits of fetal tissue transplantation research can be more effectively/ethically/safely achieved by other methods
9) Arguments/evidence that proper safeguards are not/cannot be followed to guard against the risks of fetal tissue transplantation research
10) Refutation of arguments/evidence stating ethical concerns with not supporting fetal tissue transplantation research
11) Support for ban on fetal tissue transplantation research

F) Somatic Cell Nuclear Transfer Research

1) Opposition to somatic cell nuclear transfer research

2) Risks (ethical, medical, environmental, safety, etc.) of somatic cell nuclear transfer research
3) Opposition to federal funding/support of somatic cell nuclear transfer research
4) Support for bans on somatic cell nuclear transfer research and development
5) Refutation of arguments/evidence that somatic cell nuclear transfer research and development is not synonymous with human cloning/will not necessarily lead to human cloning
6) Arguments/evidence that benefits of somatic cell nuclear transfer research and development can be more effectively/ethically achieved by other means
7) Arguments/evidence that benefits of somatic cell nuclear transfer research and development have been overstated

G) Economic/Commercialization Issues

1) Opposition to commercialization of biotechnology
2) Potential/realized problems associated with biotechnology commercialization
3) Anticipated increased risks in the event of commercialization of biotechnology
4) Refutation of arguments/evidence of importance of biotechnology research and development to economic development

H) Genetic Sequencing Research and Development

1) Opposition to federal funding and support of human genome project
2) Statement of problems (ethical, legal, social, safety, etc.) associated with human genome project
3) Opposition to human genome project
4) Opposition to international cooperation in human genome project implementation
5) Opposition to public and private human genome research
6) Opposition to patterning gene sequences
7) Problems (ethical, scientific, medical, etc.) with patterning gene sequences
8) Potential/realized problems (ethical, medical, economic, etc.) with human genome project
9) Support for stricter regulation of gene therapy
10) Opposition to more lenient regulation of gene therapy
11) Opposition to gene therapy
12) Potential problems (ethical, medical, safety, etc.) associated with gene therapy and gene transfer applications
13) Concerns about confidentiality of genetic information (only if these concerns are used to attempt to stultify development of biotechnology)
14) Concerns about potential discriminatory use of genetic information (only if these concerns are used to attempt to stultify development of biotechnology)
15) Dangers (medical, societal, ethical, safety, etc.) of using genetic tests to predict disease
16) Opposition to genomic invention
17) Failures of human genome project
18) Arguments that gene therapy/genetic engineering will lead to human cloning

19) Risks (ethical, scientific, medical, environmental, legal, etc.) of genetic engineering
20) Opposition to recombinant DNA research
21) Risks (environmental, safety, ethical, scientific, etc.) of recombinant DNA research
22) Arguments/evidence that the benefits of genetic biotechnology research (recombinant DNA research, gene therapy, genetic engineering, human genome project, etc.) are overstated
23) Arguments/evidence of monetary/opportunity costs of conducting genetic biotechnology research (recombinant DNA research, gene therapy, genetic engineering, human genome project, etc.)
24) Risks (environmental, safety, ethical, scientific, etc.) of gene transplantation
25) Refutation of arguments/evidence that genetic exchange is a natural process
26) Opposition to the use of genetic biotechnology research and development for enhancement purposes (i.e. positive eugenics, growth hormones, etc.)
27) Opposition to genetic screening programs
28) Concerns that biotechnology research and development will lead to the genetic manipulation of human behavior
29) Risks (ethical, medical, etc.) of using genetic biotechnology research and development for enhancement purposes (i.e. positive eugenics, growth hormones, etc.)
30) Opposition to making U.S. more competitive in human genetic research
31) Opposition to human genome diversity project
32) Risks (scientific, medical, societal, etc.) of human genome diversity project

I) Patent/Privacy Issues

1) Opposition to protection of patent rights of biotechnology researchers
2) Problems (ethical, legal, economic, agricultural, etc.) involved with patenting of genetic structures/protection of proprietary biotechnology information
3) Support for moratorium of patenting of genetic structures
4) Opposition to patenting of genetic structures
5) Opposition to expediting private sector patent applications arising from biotechnology research/opposition to a more efficient patent application process
6) Support for giving the public full information about biotechnology research
7) Concerns that biotechnology has contributed to secrecy of scientific research
8) Support for exempting certain groups from genetic structure patent liability
9) Refutation of arguments/evidence of the constitutionality of patenting genetic structures
10) Support for policies that would loosen protections of patent rights of biotechnology researchers and developers
11) Arguments/evidence that legislation is not necessary to provide necessary patent protection to entities engaging in biotechnology research and development
12) Arguments/evidence that delays in patent approval for products developed through biotechnology research and development are the fault of biotechnology

companies (i.e. excessive litigation, not using means available to them to reduce patent time, etc.)

J) General Biotechnology Research and Development

1) Support for/need for accountability of scientific community to the public
2) Risks (agricultural, scientific, medical, societal, safety, ethical, environmental, etc.) of biotechnology research
3) Opposition to governmental biotechnology research
4) Support for considering the immediate benefits to the public of all scientific research
5) Need to question importance of freedom of scientific inquiry
6) Arguments/evidence that benefits of biotechnology research can be achieved more effectively through the use of alternative methods
7) Support for precautionary principle when considering whether or not to conduct biotechnology research and development
8) Concerns that definitions of biotechnology-related concepts are overly positive toward the biotechnology industry
9) Criticism of the qualifications of those defending biotechnology research and development
10) Arguments/evidence of lack of public confidence with biotechnology industry
11) Criticism of efforts to make U.S. more competitive in international biotechnology market
12) Arguments/evidence of the need to educate the public to understand the risks of biotechnology research and development
13) Concerns that the pro-biotechnology side in the debate is hiding information from the anti-biotechnology side
14) Arguments/evidence that the benefits of biotechnology research and development are overstated

K) General Guidelines and Regulation of Biotechnology Research and Development

1) Support for strict governmental guidelines for biotechnology research
2) Concerns that proper safeguards are not used when conducting biotechnology research
3) Concerns about guidelines for public protection against dangers of biotechnology research
4) Support for interim or total bans on biotechnology research
5) Pessimistic outlook for voluntary compliance with guidelines by biotechnology researchers in public and private entities
6) Support for rigorous monitoring and enforcement procedures to govern research
7) Support for state, local, and federal governmental involvement in/control over/regulation of biotechnology research
8) Inadequacy of guidelines/regulatory framework governing biotechnology research
9) Support for strict penalties for violating federal guidelines

10) Viewed insufficiency of present containment procedures/need for better containment procedures
11) Arguments/evidence of lack of monitoring and enforcement of biotechnology research guidelines
12) Support for giving states/localities the priority to enact biotechnology regulations beyond federal regulatory standards
13) Support for considering human values in scientific policymaking
14) Support for stricter regulation on biotechnology techniques applied to human beings
15) Opposition to more lenient regulation of biotechnology techniques applied to human beings
16) Refutation of arguments/evidence that researchers in public and private sector entities can engage in self-regulation
17) Support for involving the public/workers in scientific safety decisions
18) Support for applying biotechnology regulations to all entities engaging in biotechnology research and development
19) Support for stricter governmental guidelines/regulations on biotechnology research
20) Opposition to more lenient/more flexible governmental guidelines/regulations on biotechnology research
21) Support for precautionary principle when designing/considering regulation of biotechnology research and development
22) Opposition to regulations that only require voluntary compliance
23) Support for bans on biotechnology techniques applied to human beings
24) Support for requiring licensing to undertake biotechnology research and development
25) Support for international standards regulating biotechnology research
26) Support for strict liability standards
27) Arguments/evidence that regulation of biotechnology research is not unconstitutional
28) Support for international agreements regulating biotechnology research
29) Support for allowing any citizen to sue a biotechnology researcher for perceived violations of biotechnology regulations
30) Refutation of arguments/evidence of the dangers of over-regulation of biotechnology research
31) Dangers of under-regulation of biotechnology research and development
32) Support for having regulation of biotechnology carried out by an unfriendly administrative agency to biotechnology (i.e. Environmental Protection Agency)
33) Opposition to having regulation of biotechnology carried out by a friendly administrative agency to biotechnology (i.e. Department of Agriculture)
34) Arguments/evidence that regulatory agencies have not been active enough in attempting to regulate biotechnology research and development
35) Opposition to exempting certain biotechnology applications from regulatory review
36) Support for regulations requiring biotechnology researchers and developers to obtain insurance before conducting biotechnology research and

development/concerns that biotechnology researchers and developers are unable to obtain insurance
37) Support for regulating biotechnology research and applications as "tools" or "processes"/opposition to regulating the effects of biotechnology research and applications on a case by case basis
38) Arguments/evidence of public support for regulation of biotechnology research and development
39) Support for price controls placed on biotechnology products
40) Support for limiting availability of biotechnology products
41) Arguments/evidence that the regulatory approval process for biotechnology research and development is sufficiently quick
42) Opposition to more lenient trade barriers on biotechnology products (i.e. allowing the export of unapproved new drugs)/risks of applying more lenient trade barriers to biotechnology products
43) Support for stricter trade barriers on biotechnology products (i.e. not allowing the export of unapproved new drugs)/benefits of applying stricter trade barriers to biotechnology products

L) Support/Investment in Biotechnology Research and Development

1) Opposition to private sector support/investment in biotechnology research and development
2) Opposition to tax credits to encourage private sector investment in biotechnology research and development
3) Opposition to public funding/support of biotechnology research and development
4) Opposition to overcoming capital access problems of biotechnology companies
5) Concerns that funding for biotechnology research will divert funds from more important research efforts
6) Support for placing limits on the amount of money spent on biotechnology research
7) Arguments/evidence of the dangers of too much governmental support/investment of biotechnology research and development
8) Arguments that enough is already being done to support biotechnology research and development despite contrary claims and no more needs to be done
9) Arguments questioning the constitutionality of federal efforts to assist the biotechnology industry

M) General Health

1) Concerns about patients using products developed through biotechnology research
2) Dangers (ethical, medical, etc.) of biotechnology techniques applied to human beings
3) Arguments/evidence that biotechnology applications are likely to cause an epidemic

4) Concerns about the violation of the rights of subjects of medical biotechnology research and development
5) Support for informing all subjects of the potential commercial applications of the donations that are making/giving these subjects proceeds from the research
6) Concerns that biotechnology research and development will lead to increases in uninsured and uninsurable individuals in society
7) Arguments/evidence that the medical benefits of biotechnology research and development are overstated
8) Concerns that biotechnology may drive up the costs of health care

N) General Environmental

1) Concerns about environmental hazards of biotechnology research
2) Risks of using biotechnology research and development to clean up hazardous waste

O) General Risks and Dangers

1) Concerns about the rights of subjects of biotechnology research
2) Concerns about the safety of biotechnology research
3) Concerns about occupational hazards of biotechnology research
4) Arguments/evidence of domestic and international public interest in biotechnology research containment
5) Criticism of scientific evidence showing minimal risks of biotechnology research
6) Presentation of risk-benefit analyses showing that the risks outweigh the benefits of biotechnology research
7) Concerns that researchers are not sufficiently trained to engage in biotechnology research
8) Support for encouraging whistleblowers to speak out about dangers of biotechnology research
9) Concerns about the safety of workers engaging in biotechnology research and development
10) Concerns about the lack of research/lack of funding for research studying the risks and dangers of biotechnology research while allowing biotechnology research and development to continue/support for more research studying the risks and dangers of biotechnology research
11) Concerns that risks of biotechnology research and development are not adequately considered before engaging in the research and development (i.e. tests of potential risks of biotechnology products are not conducted before releasing them on the market)
12) Support for placing the burden of proving the safety of biotechnology research and development on those who are profiting from the research and development
13) Concerns about the exploitation of animals who are subjects of biotechnology research

P) Psychological/Behavioral Biotechnology Research and Development

1) Concerns about the capacity of biotechnology techniques to manipulate human behavior

Q) Private Sector-University -Public Sector Cooperation

1) Opposition to cooperation between university and private sector in biotechnology research and development
2) Arguments/evidence stating the dangers (ethical, societal, etc.) of industry-university biotechnology research and development collaboration
3) Opposition to government stimulation of industry-university biotechnology research and development
4) Opposition to federal support/funding of industry-university biotechnology research and development
5) Arguments/evidence stating the dangers (ethical, societal, etc.) of federal support/funding of industry-university biotechnology research and development
6) Arguments/evidence of insufficient controls put in place to guard against the risks/dangers of industry-university biotechnology research and development
7) Arguments/evidence that industry-university biotechnology research and development collaboration inhibits universities to conduct research as they please
8) Support for regulation of industry-university biotechnology research and development
9) Arguments/evidence that graduate students are exploited when conducting industry-university biotechnology research and development
10) Support for giving the public full information about industry-university biotechnology research and development collaboration
11) Arguments/evidence stating the dangers (ethical, societal, etc.) of industry-university-government biotechnology research and development collaboration
12) Arguments/evidence stating the dangers of technology transfer programs

R) Marine Biotechnology

1) Opposition to marine biotechnology research and development
2) Risks (scientific, environmental, health, etc.) associated with marine biotechnology research and development
3) Opposition to federal funding/support of marine biotechnology research and development

S) Biological Weapons

1) Opposition to/support for bans on the use of biotechnology research and applications in biological weapons development
2) Risks (technology falling into wrong hands, national defense, etc.) of use of biotechnology research in biological weapons development
3) Concerns that biotechnology research and development is likely to be used to develop biological weapons

4) Refutation of arguments/evidence that biotechnology research and development can be utilized develop a defense mechanism against a biological weapon attack
5) Criticism of suspension of biotechnology regulations when the research will be used for national security purposes

T) Reproductive Biotechnology Research and Development

1) Concerns about the use of genetic information to inform reproductive decisions
2) Dangers (ethical, medical, health, etc.) of biotechnology research and development utilized for reproductive purposes
3) Opposition to biotechnology research and development utilized for reproductive purposes
4) Support for bans on biotechnology research and development utilized for reproductive purposes

U) Animal Biotechnology Research

1) Refutation of arguments/evidence stating benefits (agricultural, medical, economic, etc.) of transgenic (genetically altered) animal research and development
2) Arguments/evidence stating risks (ethical, economic, environmental, health, ethical, etc.) of transgenic (genetically altered) animal research and development
3) Concerns about the welfare of animals that are the subject of transgenic (genetically altered) animal research and development
4) Support for stricter regulation of transgenic (genetically altered) animal research and development
5) Opposition to transgenic (genetically altered) animal research and development
6) Opposition to federal funding/support of transgenic (genetically altered) animal research and development
7) Refutation of arguments/evidence stating benefits (agricultural, economic, health, etc.) of using bovine growth hormone
8) Opposition to the use of bovine growth hormone
9) Risks (health, environmental, ethical, safety, economic, agricultural, etc.) of using bovine growth hormone
10) Opposition to government funding/support of bovine growth hormone research and development