

## **Interest Groups, Advisory Committees, and Congressional Control of the Bureaucracy**

**Steven J. Balla**

Department of Political Science  
The George Washington University  
sballa@gwu.edu

and

**John R. Wright**

Department of Political Science  
The Ohio State University  
wright.569@osu.edu

April 2000

### *Abstract*

Do the interests represented on advisory committees to federal agencies reflect the interests that participate in the congressional debate over the agencies' programs? We address this question by analyzing data on the nomination and selection of members for the National Drinking Water Advisory Council (NDWAC) in 1995-1997. We conclude that NDWAC was composed of a balanced set of stakeholders that reflects the set of interests active in the legislative debate on drinking water in 1996. EPA selection was oriented toward candidates supported by interest groups representing environmentalists, state and local regulators, and water utilities of different types. We hypothesize that advisory committee memberships will generally mirror congressional interests whenever organized interests actively lobby for membership on the committees.

Previous versions of this paper were presented at the October 1997 conference honoring Richard F. Fenno, Jr., the 1997 annual meeting of the Association for Public Policy Analysis and Management, and the 1998 annual meeting of the Midwest Political Science Association. We thank Mike Bailey, Kathy Bawn, Lee Sigelman, Paul Wahlbeck, Langche Zeng, and seminar participants at George Washington University, Ohio State University, and Washington University for advice and comments, and Charlene Shaw for assistance in data collection.

## Introduction

One of the persistent power struggles in American national politics is that between Congress and the bureaucracy. Scholars have theorized that the outcome of this struggle depends significantly on which institution has superior information about the costs and likely consequences of policy implementation (e.g., Miller and Moe, 1984; Bendor, Taylor, and Van Gaalen, 1985; Banks and Weingast, 1992; Epstein and O'Halloran, 1992). When bureaucrats have an informational advantage, agencies can often implement programs at higher costs and with different beneficiaries than Congress intended. Thus, to control federal agencies, Congress must control the information available to agencies.

McCubbins, Noll, and Weingast (1987, 1989) propose that Congress can determine the “quantity, quality, and completeness” of information available to bureaucrats through the *ex ante* design of procedures and institutions that guide agency decisions.<sup>1</sup> They offer three specific hypotheses about how Congress should design agency procedures (1989: 444):

- (1) the agency's structure and process should create a political environment that *mirrors* the politics at the time of enactment,
- (2) the structure and process of an agency should *stack the deck* in favor of those groups who, among those significantly affected by the policy, are also favored constituents of the coalition that caused the policy to be adopted, and
- (3) agency policies should exhibit an *autopilot* characteristic.

Efforts to test the *ex ante* structure and process thesis have focused almost exclusively on the second of these hypotheses—deck stacking. Empirical research provides little support for this hypothesis (e.g., Hill and Brazier, 1991; Hamilton and Schroeder, 1994; Hamilton, 1996; Balla, 1998; and Spence, 1999), raising considerable doubt about Congress's ability to control the future behavior of agencies through institutional design. However, by focusing exclusively on deck stacking, these studies may have led to overly pessimistic conclusions. An equally important part of the McCubbins, Noll, and Weingast

---

<sup>1</sup> Students of legislative-executive relations have advanced other interpretations of bureaucratic structure and process. Within positive theory, Moe (1990) argues that legislators design agencies so that they are insulated from their opponents. Among legal and public administration scholars, the prevailing view is that the aim of structure and process is to enhance the fairness, openness, and legitimacy of policy implementation (Mashaw 1990; Stewart 1975; Sunstein 1986; West 1995).

thesis is the mirror hypothesis, the first of their three hypotheses about agency design. The mirror hypothesis holds that Congress will create institutions and procedures to ensure that interests active in the legislative debate over an agency's programs will also be represented before the agency during rulemaking and implementation. Our objective in this paper is to test the mirror hypothesis, and to offer an explanation for why it should hold. We show that the mirror and deck-stacking hypotheses are substantively different—we interpret the former as a constraint on interest articulation and the latter as a condition of interest aggregation—but affirm that *both* must hold in order for Congress to control policy outcomes.

We test the mirror hypothesis by examining the appointment of members to a federal advisory committee. Advisory committees are potentially important instances of the structure and process embodied in the mirror hypothesis. Congress creates advisory committees in the originating legislation of major federal programs, charges them to provide information and advice to federal agencies, and specifies membership rights for general categories of interests. The Advisory Committee on Student Financial Assistance (ACFSA), for example, was authorized in the Higher Education Act Amendments of 1986 and charged with advising the Department of Education on student financial aid policy. Congress stipulated that ACFSA consist of 11 members representing “States, institutions of higher education, secondary schools, credit institutions, students, and parents.” Committees such as ACFSA allow Congress to determine the types of interests that participate, and hence the content of information presented, before federal agencies.

Empirically, we analyze the nomination and selection process of one active and well-known advisory committee, the National Drinking Water Advisory Council (NDWAC) within the Environmental Protection Agency (EPA). We test whether the membership of NDWAC accurately reflects congressional interests, and we offer a tentative explanation for why the mirror hypothesis should hold. Our explanation—an endorsement hypothesis—posits that interest group endorsements inform

members of Congress and agency officials about applicants' true policy interests, and that these endorsements will be influential in the appointment process. We find support in our empirical analyses for both the mirror and endorsement hypotheses. We conclude that when interest groups participate in the appointment process, Congress need not intervene to secure the representation it seeks before federal agencies.

### **The Congressional Design of Agency Procedures**

McCubbins, Noll, and Weingast (1989) formulate the mirror hypothesis as follows:

[I]nterests that are active participants in the debate over the original legislation should be given representation through the structure and process of the agency so that each will be protected against undesirable policy drift. Specifically, the enabling legislation should seek to combine sanctions with an institutional structure to create pressures on agencies that replicate the political pressures applied when the relevant legislation was enacted. Here the point of administrative procedures is not to pre-select specific policy outcomes but to create a decisionmaking environment that mirrors the political circumstances that gave rise to the establishment of the policy.

The hypothesis specifies that both majority and minority interests in the legislative process should have access to, and representation before, an agency. Figure 1 provides a simple illustration. Five policy alternatives are represented along a continuous set of policy outcomes,  $X$ , and each of these alternatives is advocated by an interest group  $G_i$ ,  $i = 1, \dots, 5$ . The majority coalition is  $M = \{G_1, G_2, G_3\}$ , and the minority coalition is  $m = \{G_4, G_5\}$ . We assume all five groups are active participants in the legislative debate, and that the legislative policy outcome is  $x = 3$ . It then follows from the mirror hypothesis that Congress should establish institutions or administrative procedures to ensure that interests  $G_1, \dots, G_5$  have representation before the agency.

Although the mirror hypothesis makes a prediction about the constellation of interests that should be represented before the agency, it makes no prediction about the location of the agency's policy outcome. McCubbins, Noll, and Weingast (1989) note that the point of administrative procedures under the mirror hypothesis is "not to pre-select specific policy outcomes." Hence, there is no guarantee, even

if the representation of interests in the bureaucracy mirrors that in the legislature, that agency policy will reflect congressional intentions. The agency could employ decisionmaking criteria that provide unequal weighting of interests, for example, and consequently implement policies that have little resemblance to the intended legislative policies.

In contrast to the mirror hypothesis, the deck stacking hypothesis offers a prediction about the location of agency policy. Specifically, the hypothesis predicts that the decisionmaking procedures of agencies will be designed so that winners in the legislative arena remain winners in the administrative arena. In terms of Figure 1, the deck stacking hypothesis predicts that the agency outcome will be within the set  $M$ . However, because deck stacking does not specify exactly which outcome within  $M$  will be selected, deck stacking alone will not necessarily prevent drift from the legislative outcome,  $x = 3$ . For example, suppose administrative procedures provide for the agency to select the median alternative from among those alternatives represented before the agency. Then, in order for the outcome  $x = 3$  to be selected, all five groups must have representation in the agency's decision process. If the minority interests are underrepresented—for example, if the agency denies access to  $G_5$ , violating the mirror condition—then the outcome drifts to  $x = 2.5$ , and if minority interests are excluded altogether, then the policy drifts to  $x = 2$ .

Together, the mirror and deck stacking conditions can prevent policy drift, but taken separately, neither is sufficient to maintain the congressional outcome. The bureaucratic outcome in Figure 1 depends not only on which interests are represented before the agency, but also on the administrative procedures that the agency employs to aggregate articulated preferences into policy. Hence, the two hypotheses are complementary, but substantively distinct. The mirror hypothesis concerns the representation of interests, whereas the deck stacking hypothesis concerns the procedures for aggregating interests. In our empirical analysis that follows, we test only the mirror condition. We investigate

whether the interests that Congress intends to be represented before the agency are in fact represented, but we do not test for policy outcomes, or drift.

### **Formal Statement of the Mirror Hypothesis**

To formalize the mirror hypothesis, we define a structure and process,  $P$ , as a law or procedure designed by Congress to influence the source, content, or use of information received by agency officials. Given our focus on advisory committees as a form of  $P$ , we are primarily concerned with how structure and process affect sources of information. We denote the set of interests that are “active participants in the debate over the original legislation” by  $L$ , and the set of interests having representation before the agency by  $A$ . We define  $P(L)$  to be a set of interests defined by  $P$  such that for each interest in  $L$  there is a corresponding interest in  $P(L)$ . We say an interest in  $P(L)$  corresponds to an interest in  $L$  when the interest in  $P(L)$  is similar in substance, and at least as inclusive as, the interest in  $L$ . In essence,  $P(L)$  is the set of legislative interests targeted by congressional procedures to be represented before the agency. A formal statement of the mirror hypothesis follows from these definitions.

*Mirror Hypothesis:* There exists a set of interests  $P(L)$  such that  $P(L) \subseteq A$

The condition  $P(L) \subseteq A$  ensures that the interests given rights under  $P$  do in fact achieve representation before the agency. We allow  $A$  to be larger than  $P(L)$  to reflect the possibility that interests other than those in  $L$  might achieve representation before the agency through means other than  $P$ . Our definition of  $P(L)$ , however, requires that there be a corresponding interest in  $P(L)$  for *each* interest in  $L$ , and thus  $P$  must ensure that all interests in  $L$  be targeted for representation before the agency.

We could require a stronger relation between  $L$  and  $P(L)$ —a mapping, for example—that would link each interest in  $L$  to a *unique* interest in  $P(L)$ . As it stands, our definition of  $P(L)$  provides a weaker statement of the mirror hypothesis, for it allows a single interest in  $L$  to correspond to multiple interests in  $P(L)$ . Thus, we risk the possibility that  $P(L)$  is overly general and that the mirror hypothesis will be

too easily satisfied. However, it is quite likely that some interests in  $L$  are truly general and encompass multiple interests, in which case a mapping from  $L$  cannot be satisfied, and the mirror hypothesis will be too easily rejected. We have settled on the weaker condition, for as we discuss below, when groups' interests are too general, we expect to reject our endorsement hypothesis. The endorsement hypothesis provides a justification for  $P(L) \subseteq A$ , and thus if the endorsement hypothesis fails, the validity of the mirror hypothesis is suspect.

By definition, for any interest  $i$ , the condition  $P(L) \subseteq A$  can be written as  $i \in P(L) \rightarrow i \in A$ . Consequently, the mirror hypothesis will be falsified whenever a set  $P(L)$  exists as we have defined it, and for some  $i$ ,  $i \in P(L)$ , but  $i \notin A$ . We explain momentarily our empirical procedures for assessing the truth or falsity of these statements, but first we describe the structure and process of advisory committees.

### **The Appointment of Advisory Committee Members**

Federal agencies consult with advisory committees in policy areas ranging from childhood vaccines to computer system security and privacy to employee welfare and pension benefit plans.<sup>2</sup> Unlike many other important institutional features of bureaucratic decision making, such as public commenting on proposed rules, advisory committees explicitly provide for the representation and participation of clearly defined interests. Whether these interests are adequately represented on advisory committees, however, depends critically on the appointment process. Although Congress typically establishes broad categories of membership on advisory committees—for example, the Commercial Fishing Industry Vessel Advisory Committee must be composed of members of the commercial fishing industry, naval architects, marine surveyors, equipment manufacturers, and so forth—agencies are

---

<sup>2</sup> See the Internet home page of the U.S. General Services Administration's Committee Management Secretariat for extensive information on advisory committees and their activities (<http://policyworks.gov/org/main/mc/linkit.htm>). The Federal Advisory Committee Act defines an advisory committee as "any committee, board, commission, council, conference, panel, task force, or other similar group, or any subcommittee or other subgroup thereof..., which is--(A) established by statute or reorganization plan, or (B) established or utilized by the President, or (C) established or utilized by one or more agencies, in the interest of obtaining advice or recommendations for the President or one or more agencies or officers of the Federal Government, except that such term excludes...any committee which is composed wholly of full-time officers or employees of the Federal Government."

usually entrusted with the authority to appoint specific members. Congress necessarily delegates the authority to agencies because of the large number of advisory committees and appointments that must be made at regular intervals. A total of 36,586 individuals served on federal advisory committees in 1997.

The delegation of appointment authority to agencies raises additional problems of congressional control. Congress simply does not possess the resources to monitor every appointment, and thus agencies may appoint members whose policy preferences do not reflect the interests envisioned by Congress. This can happen for one of two reasons: first, neither agency officials nor members of Congress are informed about the true policy interests of prospective advisory committee members; or second, agency officials are informed but members of Congress are not. The essential problem in either case is that applicants' true policy interests are often obscure, even within a single category of committee membership. Applicants claiming to have environmental policy experience, for example, may vary considerably in the strength of their commitments. Some may be ardent supporters of environmental causes, while others are more sympathetic to producers such as petroleum or mining interests. If Congress requires the agency to appoint an environmentalist, then Congress as well as the agency may be unsure about which individual should be appointed.

Agency officials are most likely to be uninformed about the policy interests of prospective advisory committee members when the number of candidates is large. In 1997, for example, fifty candidates competed for six open slots on the National Drinking Water Advisory Council. Officials at the Environmental Protection Agency explained to us that some of these applicants they knew from professional conferences and previous business with the agency, but many others they did not know. When agency officials are uncertain about applicants' policy interests, then consistent support for the mirror hypothesis is unlikely. Even if officials act sincerely to constitute the committees as Congress intends, they cannot be sure that they are appointing the correct individuals.

Even more problematic for the mirror hypothesis is the situation where the agency is informed about applicants' true interests but Congress is not. Then the usual problems of principal-agency theory arise, and bureaucrats may be able to populate the committee with interests that do not accurately reflect those that Congress targeted for representation. Agency officials could, for example, appoint an individual to the environmental category who is sympathetic to producers' interests. If misrepresentation is to be avoided, both Congress and the agency must be able to discern applicants' true policy interests.

### **The Endorsement Hypothesis**

We conjecture that both Congress and the agency become informed about the policy interests of prospective advisory committee members through interest group endorsements. Endorsements will be informative when interest groups have clearly defined agendas, and when they endorse only those individuals for advisory committee membership who accurately represent the groups' policy interests. When these conditions hold, agency officials can reliably infer applicants' true policy interests from interest group endorsements and lobbying activities, and endorsements should be influential in the appointment process. Consequently, the mirror hypothesis should not fail because of agency ignorance. Nor should it fail because of agency manipulation. Provided that members of Congress can infer applicants' true interests from interest group endorsements, an agency risks setting off fire alarms (e.g., McCubbins and Schwartz, 1984) whenever it is unresponsive to the appeals of organizations whose interests Congress has targeted for membership.

In terms of the mirror hypothesis, interest group endorsements provide a rationale for, as well as a means for testing, the condition  $P(L) \subseteq A$ . Since endorsements allow agency officials and members of Congress alike to discern the policy interests of potential advisory committee members, agencies will find it difficult to appoint advisory committees with a balance of interests significantly different from what Congress intended. In other words, the set of advisory committee members,  $A$ , should resemble  $P(L)$ . Empirically, we can evaluate the condition  $P(L) \subseteq A$  by examining whether the agency fills

vacancies in each membership category specified by *P* with individuals having endorsements from organizations legitimately representing those categories.

To summarize, our endorsement hypothesis posits the following: when interest groups with clearly defined agendas endorse individuals for advisory committee membership, then endorsements will positively influence agencies' decisions about whom to appoint. In our subsequent empirical analysis, we will reject the endorsement hypothesis if we find evidence that groups with clearly defined agendas endorsed individuals for committee membership, but find no evidence that these endorsements influenced the agency's appointment decisions. Endorsements, in other words, must be influential *ceteris paribus*. Before proceeding with our tests, we digress briefly to place our analysis of advisory committees in the context of previous research.

### **Previous Research on Advisory Committees**

Since 1972, the Federal Advisory Committee Act has governed the composition, management, and operation of advisory committees (Levine 1973; Markham 1974). One of the principal purposes of the Act was to reduce business domination of the advisory committee system and, concomitantly, to facilitate participation by environmentalists and other representatives of the public interest (U.S. Congress 1970). The Act mandates that advisory committees "be fairly balanced in terms of the points of view represented and the functions to be performed." It also requires, with several exceptions, that advisory committee meetings be open to the public and announced in advance in the *Federal Register*, and that advisory committee records be readily available to interested parties.

The balance provision of FACA has inspired most of the research on advisory committees conducted in the years following passage of the Act. The general conclusion of this research indicates that the goals of balance and openness are largely unmet (Pika 1983). Priest, Sylves, and Scudder (1984) examine corporate participation in advisory committees in 1973 and 1977. Although the percentage of large corporations with advisory committee representation declined in this period, it nevertheless

remained substantial. For example, approximately half of the largest industrial corporations and public utilities were represented on advisory committees by executive officers. Petracca's (1986) analysis of six cabinet departments also indicates that business interests continued to participate extensively in the advisory committee system. In 1977, representatives of business accounted for more than 20 percent of advisory committee members in each department. In general, this level of representation greatly exceeded that of labor, consumer, and other interests.

When and why imbalance occurs on advisory committees is unclear from the existing research. Several explanations are possible. First, some advisory committees are created under congressional authority, while others are established under agency authority. Those created under agency authority are not subject to the same membership constraints as those established by Congress, and thus agencies may have less incentive to balance the membership when not directed to do so by statute. Second, for those committees established under statute, previous studies have not taken into account the membership rights stipulated by Congress. Without examining mandated membership categories, it is impossible to determine whether the final composition is what Congress intended. Third, imbalance could result because some interests are more likely than others to seek representation on advisory committees. Business interests, for example, may be more likely than other stakeholders to possess the resources necessary to travel to meetings, conduct research, and, in general, incur the cost of advisory committee participation. Finally, there may be bias in the agency's selection process. Business interests may be advantaged here as well, in that agencies have an interest in securing the cooperation and compliance of firms and industries whose activities are targeted in regulations (Petracca 1986).

While it might be tempting to conclude that the prevalence of unbalanced advisory committees implies rejection of the mirror hypothesis, such a conclusion is clearly unwarranted. All interests are not represented equally before Congress, nor does Congress necessarily intend for all interests to be represented equally before federal agencies. The mirror hypothesis does not imply balanced

representation; it implies only that active interests in the congressional arena achieve representation before agencies. Thus, if we are to test representation before agencies through advisory committee membership, we must go beyond the existing research and investigate not only the final composition of committees, but also the composition of the committees as intended by Congress and the role of interest groups in the appointment process within the agency. One advisory committee that affords an opportunity to examine the appointment process in detail is the National Drinking Water Advisory Committee.<sup>3</sup>

### **The National Drinking Water Advisory Council**

Congress created NDWAC in the Safe Drinking Water Act of 1974. The Act charges NDWAC to “advise, consult with, and make recommendations” to the Environmental Protection Agency (EPA) in the area of drinking water policy. Although the Act delegates to EPA the authority to select NDWAC’s 15 members, it requires that NDWAC be constituted in the following manner:

Five members shall be appointed from the general public; five members shall be appointed from appropriate State and local agencies concerned with water hygiene and public water supply; and five members shall be appointed from representatives of private organizations or groups demonstrating an active interest in the field of water hygiene and public water supply.

In other words, the Act mandates equal representation of the drinking water producers, state and local officials who regulate industry activities, and consumer advocates, environmentalists, and other representatives of the public interest.

The appointment process operates as follows. Each fall, EPA publishes a *Federal Register* notice soliciting nominations of individuals for NDWAC membership. Members’ terms are staggered so

---

<sup>3</sup> We have attempted to replicate our data on the appointment process in several different agencies and various advisory committees. Through interviews with designated federal officers (DFOs) for advisory committees, we have concluded that the appointment process varies little across committees; however, we have also found that record keeping practices vary greatly across agencies and committees. One problem is that DFOs change frequently, leading to little continuity. Another problem is that some agency officials are protective of their records, and in some instances we found our requests for data stonewalled. In other instances, we were able to acquire some of the data we needed, but other critical pieces proved missing. NDWAC was an ideal committee for analysis because the DFO had been with the committee since its inception, and the committee’s records were extremely thorough and open.

that, in the absence of unexpected openings, five vacancies occur each year. EPA's Office of Ground Water and Drinking Water processes the nominations. It assigns each nominee to a membership category, in effect creating three sets of candidates in each year. In 1997, 17 candidates competed for two general public positions, 21 candidates competed for two state and local positions, and 12 candidates competed for two producer positions.<sup>4</sup> The Office selects individuals to fill vacancies, and forwards its selections to the Assistant Administrator of Water, who, after consultation with political appointees inside and outside EPA, officially determines the composition of NDWAC.

For much of its history, NDWAC played a marginal role in the making of drinking water policy (Balla and Wright 2000). In recent years, however, it has become an integral part of the process, working closely with EPA in setting priorities for the drinking water program and crafting policy in areas such as the disclosure of information about contaminants in drinking water systems. This turnaround can be attributed to two sources. First, EPA has been in the forefront of the movement toward consensual rulemaking, making more extensive use of consensus-based approaches than other agencies (Coglianese 1997; Kerwin 1999). Second, the Safe Drinking Water Act was amended in 1996, enhancing EPA's discretion over the timing and focus of drinking water regulations. EPA has used this discretion to increase stakeholder participation, not only through the vitalization of NDWAC, but also by conducting regulatory negotiations and by regularly holding other types of public meetings.

### **Testing the Mirror Hypothesis**

An empirical test of the mirror hypothesis requires that we identify an appropriate structure and process, *P*. The advisory committee—in this case, NDWAC—is particularly apt. It is an institution with formal rules and clearly defined procedures, and its purpose is to provide information to EPA.

Membership on the committee provides an objective and unambiguous measure of formal representation

---

<sup>4</sup> We collected information about NDWAC's appointment process at the Office of Ground Water and Drinking Water. The Office, located at EPA headquarters in Washington, DC, maintains extensive records on individuals nominated for NDWAC membership, including résumés and letters of support.

before federal agencies that can be linked explicitly to the set of interests Congress intends to be represented.

The first part of our formal statement of the mirror hypothesis is that there exists a set  $P(L)$  such that the interests given representation before the agency by  $P$  should include all of the interests that participated in the legislative debate. As specified in the Safe Drinking Water Act (14 U.S.C. §1446(a)), the set  $P(L)$  is to consist of representatives of the following interests: the “general public,” “state and local agencies concerned with water hygiene and public water supply,” and private organizations or groups demonstrating interest in the field of water hygiene and public water supply of which two such members shall be associated with small, rural public water systems.” Following our formal statement of the mirror hypothesis, we must first establish that the interests in  $P(L)$  correspond to the interests in  $L$ .

To construct the set  $L$  we turn to the congressional hearings on the Safe Drinking Water Act of 1996. Congressional hearings provide us with certain knowledge about which interests participated in the legislative debate. Those who offered oral testimony were invited to do so by majority and minority members of the Senate Environment and Public Works Committee and the House Commerce Committee. Typically, those invited to participate at congressional hearings involve the most prominent players in a policy area (Leyden, 1996), and thus it is unlikely that significant interests in the legislative deliberations on drinking water in 1996 were not represented at the hearings.<sup>5</sup>

Hearings were held before the Senate Environment and Public Works Committee on 19 October 1995, and before the House Commerce Committee on 31 January 1996. Listed in Table 1 are the organizations that testified at either or both hearings, together with brief organizational descriptions and a designation of each group’s interest. Testimony was collected from eight different organizations, ranging from the AWWA, the principal society of drinking water professionals, to the intergovernmental

---

<sup>5</sup> We did not employ other indicators of legislative participation such as PAC contributions or lobby registrations, because we would have likely inferred legislative participation when there was none. The motivations for campaign contributions are seldom apparent, and data on lobby registrations are often not specific enough to infer activity on a particular bill.

lobbies—NACo, NGA, and NLC—and to organizations of water utilities—NAWC, AMWA, and NRWA.

Figure 2 depicts a relationship between  $L$  and  $P(L)$  consistent with our definition of  $P(L)$ ; hence, we conclude that there exists a set  $P(L)$  consistent with the mirror hypothesis. For each interest in  $L$  there is a corresponding interest in  $P(L)$  that is similar in substance and more inclusive than that in  $L$ . The private water utility interest, for example, represented by the National Association of Water Companies (NAWC), corresponds to the water producer category in  $P(L)$ . In fact, all three producer organizations—National Association of Water Companies, Association of Metropolitan Water Agencies, and especially the National Rural Water Association—fit clearly in the category of “private organizations or groups demonstrating interest in the field of water hygiene and public water supply of which two such members shall be associated with small, rural public water systems.” The only organized interest that spans all three categories is the American Water Works Association (AWWA), the organization of drinking water professionals—producers, regulators, and environmentalists alike. Our definition of  $P(L)$ , however, does not preclude interests in  $L$  from corresponding to more than one interest in  $P(L)$ .<sup>6</sup>

The second condition of the hypothesis states that  $P(L) \subseteq A$ , or equivalently, for an interest  $i$ ,  $i \in P(L) \rightarrow i \in A$ . We interpret  $A$  to be the set of interests with representation on NDWAC. Thus, to determine the truth or falsity of the implication  $i \in P(L) \rightarrow i \in A$  we must establish which interests in  $P(L)$  successfully achieved representation on NDWAC. Empirically, this requires that we identify the policy interests of NDWAC members. This can be problematic, as we noted earlier, because the true policy interests of candidates for NDWAC are not always transparent. Our approach to this problem is use interest group endorsements as indicators of candidates’ true policy interests. For example, a candidate who is nominated and endorsed for membership on NDWAC by the National Association of Water

---

<sup>6</sup> For this reason,  $P$  obviously does not establish a mapping from  $L$  to  $P(L)$ .

Companies surely represents the interests of privately owned utilities and water producers in general. If EPA appoints this individual, then we conclude that drinking water producers have representation on NDWAC. We turn, therefore, to an analysis of interest group participation in the appointment process.

### **Interest Group Participation in the Appointment of NDWAC**

In recent years, stakeholder interest in serving on NDWAC has generally been quite high. Although drinking water policy attracts the attention of a relatively limited number of parties, more than one hundred individuals were nominated for NDWAC membership in the period under study—32 in 1995, 28 in 1996, and 50 in 1997. Many nominees possessed distinguished drinking water credentials. One candidate was the deputy general manager of the Metropolitan Water District of Southern California, a public utility that serves millions of customers. Another candidate was the chief of Michigan's Division of Water Supply, and also served as the vice president of the Association of State Drinking Water Administrators (ASDWA), an organization consisting of the lead drinking water official of each state and territory. Another candidate was a senior attorney at the Natural Resources Defense Council (NRDC), the most active environmental group in the area of drinking water policy.

Many nominees received written endorsements from individuals and organizations. In particular, interest groups supported 52 of the 110 candidates. In these instances, the groups either nominated the candidates directly by writing a letter of nomination to EPA, or else wrote EPA a letter of support for the candidate. These letters appeared in the individual files of the candidates included among the records of NDWAC at EPA.

Five groups merit particular attention, in that they represent parties with a significant stake in drinking water policy. The American Water Works Association (AWWA) was the most active group in the nomination process, endorsing 19 candidates—five in 1995, five in 1996, and nine in 1997. Two groups that represent specific segments of the drinking water industry also participated in the process. The National Association of Water Companies (NAWC) endorsed four candidates, including the vice

president of water quality of the Philadelphia Suburban Water Company. The National Rural Water Association (NRWA) endorsed three candidates, including the general manager of a New Mexico water system with 2,500 customers. The Association of State Drinking Water Administrators (ASDWA), an organization that did not testify before Congress, but nonetheless represents state and local interests in the regulation and administration of drinking water programs, endorsed six candidates. Five were the drinking water administrators of Michigan, Nevada, New York, North Carolina, and Texas. Finally, the Natural Resources Defense Council (NRDC) endorsed four candidates, including an environmental attorney at the U.S. Public Interest Research Group and a public policy associate at the Consumer Federation of America.<sup>7</sup> Only the AMWA, among the organizations that testified before Congress, did not nominate or endorse any candidates. An official of the AMWA explained that the organization has ample access to EPA officials without participating through NDWAC.

Table 2 displays the distribution of groups' nomination efforts across the three categories of NDWAC membership. Generally, groups supported candidates for positions in the particular membership categories that the organizations represent. For example, all of the candidates endorsed by ASDWA were nominated for state and local positions, and three of the four candidates endorsed by NAWC were nominated for drinking water producer positions. AWWA was the clear exception. Seven of its nominees were candidates for producer positions, seven were candidates for regulator positions, and five were candidates for general public positions. The breadth and scope of AWWA's nomination activities were likely a function of its large size and the diversity of its membership. Nevertheless, because AWWA represents virtually all interests of drinking water professionals, its agenda is somewhat ambiguous, and its endorsements therefore carry little information about applicants' true policy interests.

---

<sup>7</sup> Other groups, such as the American Council of Independent Laboratories, American Farm Bureau Federation, and National Environmental Health Association, endorsed candidates for NDWAC membership. These groups represent interests before the agency that were not represented in the congressional hearings; however, our formalization of the mirror hypothesis requires only that  $P(L) \subseteq A$ , not that  $P(L) = A$ .

Thus, by the endorsement hypothesis, we expect AWWA's endorsements to carry little weight with EPA officials.

In general, though, the organizations with clearly defined interests seldom made endorsements across multiple categories of membership. One exception was the NRDC, which in 1997 recommended a candidate for a producer vacancy. In all likelihood, this candidate, who was a health policy analyst, did not represent producer interests as authoritatively as the three candidates endorsed by NRWA, all of whom managed small, rural utilities. If EPA had selected NRDC's candidate, then it would have filled a producer position with a representative of environmental interests. Given NRDC's clear environmental interests, however, this appointment strategy would have been entirely transparent to Congress, and EPA did not make it. It is understandable, therefore, that organizations with focused interests seldom make nominations outside their categories of interest.

For the mirror hypothesis to hold, all interests in  $P(L)$  must have representation on the advisory committee; that is, for each of the three interests,  $i$ , the implication  $i \in P(L) \rightarrow i \in A$  must be true. This condition will hold if EPA appoints to each category at least one individual who has received the endorsement of an organization legitimately advocating the interests of that category. It is evident from Table 2 that this condition holds. Two of the six vacancies in the general public category were filled with nominees of the NRDC; three of the seven vacancies in the state and local category were filled with candidates nominated by ASDW; and three of the five vacancies in the water producer category were filled with individuals nominated by NAWC and NRWA. The remaining vacancies were filled with candidates who were not nominated or endorsed by any of the organizations. Whether the policy preferences of these appointees were true to their categories we cannot be sure; however, at least two members were appointed in each category who received the endorsements of organizations advocating the interests of that category. Hence, all interests in  $L$  are represented on the committee, and the mirror hypothesis is supported.

### Other Factors Affecting EPA Selection

Although the basic conditions for the mirror hypothesis are satisfied, it remains to be shown that interest group endorsements did in fact influence the agency's appointment decisions. If EPA appointed members on the basis of their professional qualifications, for example, and if by chance interest groups endorsed well-qualified candidates over this period of time, then endorsements may have had little independent impact. Unless interest group endorsements directly affected appointments *ceteris paribus*, we have no systematic explanation for why the mirror hypothesis holds. Evidence supporting the mirror hypothesis could have arisen by chance. Thus, we estimate the impact of organizational endorsements on appointments through a multivariate analysis that controls for other plausible factors.

Table 3 lists the full set of variables in our multivariate analysis. One potentially important variable is congressional support. Eight candidates received letters of support from a member of Congress. In each of these instances, legislators supported candidates who resided in their state or district. For example, Senator Feinstein (D-CA) and three California House members recommended the appointment of the general manager of the Contra Costa Water District, a public utility serving over 400,000 northern Californians. We expect that EPA generally acceded to these constituency service requests, both because of their relative infrequency and because they provided EPA with a relatively low cost way of cultivating congressional support.<sup>8</sup>

Another potentially important factor is whether agencies sought to assemble advisory committees that were balanced in terms of race, ethnicity, and gender. One objective of the Clinton administration was to increase female and minority representation in the federal government.<sup>9</sup> With this in mind, we include an indicator of whether the candidate was female, Hispanic, African American, or Native

---

<sup>8</sup> Congressional support is useful to agencies, whether their goals are budget maximization (Niskanen 1971), policy making autonomy (Ferejohn 1987), positive external signals (Noll 1985), or a combination of outcomes (Downs 1967).

<sup>9</sup> This endeavor was epitomized by President Clinton's pledge to assemble a cabinet that "looks like" the United States.

American. If EPA weighed demographic balance when making NDWAC appointments, then this variable should exert positive influence over the likelihood of selection.

Agencies also often seek geographic balance in advisory committees (Petracca 1986).

Geography is a particularly important consideration in drinking water policy, as areas of the United States vary in the way in which drinking water is procured, processed, and provided to consumers. We assess the extent to which EPA incorporated geographic considerations into the selection process through a variable measuring the number of returning NDWAC members from the candidate's region.<sup>10</sup>

NDWAC members are eligible for reappointment, and six members sought reappointment in 1995-1997. Our analysis includes a variable denoting these members, as the likelihood of their selection may have differed systematically from that of candidates seeking their first term. EPA possessed extensive information about NDWAC members, as they had attended meetings, participated in discussions, filed reports, and cast votes on a variety of issues. Reappointment of these individuals would reduce the number of positions that EPA had to fill with candidates about whom it did not possess first-hand information.

We coded various indicators of nominees' professional qualifications from their résumés. Seventy nominees possessed advanced degrees and certifications in engineering and the sciences, and some 33 nominees had experience in the operation of drinking water systems. Some of these candidates were general managers of public and private utilities, while others were municipal officials who supervised drinking water safety and supply in their jurisdictions. We measure candidate qualifications through two dummy variables, one indicating advanced training in engineering and the sciences, and the other indicating experience in operating drinking water systems. We expect that EPA was more likely to

---

<sup>10</sup> We use the following regional classification: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey (EPA Regions 1 and 2); Pennsylvania, Delaware, District of Columbia, Maryland, Virginia, West Virginia, (EPA Region 3); Kentucky, Tennessee, North Carolina, South Carolina, Mississippi, Alabama, Georgia, Florida (EPA Region 4); Minnesota, Wisconsin, Illinois, Michigan, Indiana, Ohio, Nebraska, Kansas, Iowa, Missouri (EPA Regions 5 and 7); New Mexico, Texas, Oklahoma, Arkansas, Louisiana

select these candidates, as they were particularly well equipped to inform the agency about the technical feasibility and practical consequences of drinking water policy.

## **Methods and Results**

The dependent variable in our multivariate analysis is a dichotomous variable indicating whether EPA selected a nominee for NDWAC membership. The conventional approach to estimating the determinants of a dichotomous dependent variable is logistic regression. The drawback to this approach is that it requires independent observations (Aldrich and Nelson 1984), an assumption that is not admissible given that the likelihood of selection is a function of the number of vacancies and nominees in the membership category. A more appropriate approach is a fixed effects logit model that accounts for heterogeneity across membership categories (Chamberlain 1980; Greene 1993).<sup>11</sup> The advantage of this model is that it estimates the likelihood of selection for each of the 17 general public candidates in 1997, for example, conditioned on the fact that there were two vacancies in that membership category.

Table 4 presents the results of the analysis. It reports two equations, the first of which includes all of the explanatory variables and the second of which includes only the indicators of organizational support. The second equation is reported to demonstrate that the results for the organizational support variables are not artifacts of the particular combination of explanatory variables included in the first equation. By a variety of measures, the fit of the equations is reasonably good. The likelihood ratio chi square statistics are significantly different from zero, indicating that the equations provide greater explanatory leverage over the selection of NDWAC members than their respective null models. The equations correctly predict approximately 90 percent of EPA's selections, which is substantially better than the accuracy of always predicting the modal category (i.e., the candidate was not selected for NDWAC membership).

---

(EPA Region 6); Montana, North Dakota, Wyoming, South Dakota, Utah, Colorado, Washington, Oregon, Idaho, Alaska (EPA Regions 8 and 10); California, Nevada, Arizona, Hawaii (EPA Region 9).

<sup>11</sup> The results do not differ substantially across the two approaches.

The coefficients for the interest group variables provide strong support for our endorsement hypothesis. Candidates for drinking water producer positions who were endorsed by NAWC and NRWA were significantly more likely than other candidates to be selected for NDWAC membership.<sup>12</sup> Similarly, EPA was more likely to select candidates for regulator and general public positions who were endorsed by ASDWA and NRDC, respectively. These results imply that NDWAC was composed of authoritative representatives of environmentalists, state regulators, and various segments of the drinking water industry. The results also imply that interest group endorsements were important factors, *ceteris paribus*, in EPA's selection process, and thus it is no coincidence that interest groups' nominees were appointed to NDWAC.

As anticipated, endorsements by the American Water Works Association (AWWA) were not influential. This result is understandable given that AWWA made nominations in all categories, and that it represents not only producer interests, but the interests of regulators, environmentalists, and other constituencies as well. That AWWA endorsements exerted virtually no influence, despite AWWA being the principal association of drinking water professionals, suggests that interest group endorsements must carry unambiguous information about candidates' policy interests in order for EPA to act on them. The absence of a statistically significant coefficient in the case of AWWA provides further support for the endorsement hypothesis.

Among the control variables, EPA was more likely to select candidates endorsed by members of Congress. The efficacy of congressional endorsements raises the following question: Why did so few candidates receive this type of support? One possibility is that the vast majority of candidates did not petition their members for endorsements. Another possibility is that members reserved this service for their most distinguished constituents.<sup>13</sup> That members of Congress do not intervene in the selection

---

<sup>12</sup> The NRWA result is significant in only the second equation and at only the 90 percent level.

<sup>13</sup> At least on two dimensions, candidates endorsed by members of Congress were not more distinguished, as a group, than candidates without congressional support. Congressional candidates were not more likely to have

process with great frequency suggests that there is an “autopilot” aspect to the selection process. Interest group endorsements provide sufficient information for EPA to constitute the advisory committee as Congress intended, and EPA evidently takes these endorsements seriously.

None of the other explanatory variables are significant predictors of EPA selection. These results imply that candidate characteristics, such as race, ethnicity, gender, educational background, and professional experience, did not play a central role in the selection of NDWAC members.<sup>14</sup> Rather, together with the other results, they suggest that endorsements from interest groups and members of Congress exerted the most pronounced influence over the composition of NDWAC.

### **Discussion**

Congress frequently establishes federal advisory committees in the originating legislation of federal programs. By specifying which interests must have representation on advisory committees, and by providing for their participation in agency policymaking, Congress can influence the representation and articulation of interests before federal agencies. Federal advisory committees are therefore important instances of an *ex ante* structure and processes to control the flow of information to the bureaucracy (McCubbins, Noll, and Weingast 1987, 1989).

We have examined the extent to which one advisory committee—the National Drinking Water Advisory Council—provides support for the mirror hypothesis of McCubbins, Noll, and Weingast (1989). This hypothesis asserts that Congress will create a structure and process to ensure that interests active in the legislative debate over an agency’s programs will also be represented before the agency during rulemaking and implementation. We argue, and our analysis demonstrates, that the mirror hypothesis should hold whenever interest groups actively endorse individuals for membership on advisory committees. Interest group endorsements inform both agency officials and members of

---

advanced training in engineering and the sciences, nor were they more likely to have experience in the operation of drinking water systems

<sup>14</sup> Another explanation for the absence of significant results is multicollinearity (Gujarati 1995). A variety of diagnostic tests, however, indicate that multicollinearity is not a concern.

Congress about applicants' true policy interests, and this makes it difficult for the agency, either by design or neglect, to constitute the membership of the committee contrary to congressional intents.

Our empirical analysis has provided a detailed account of the nomination and selection of NDWAC members in 1995-1997. More than one hundred candidates were nominated for 18 positions during these three years. Many nominees possessed distinguished qualifications, in that they were prominent figures in the provision of drinking water and in the making of drinking water policy. Interest groups were quite active in the nomination and selection process. As a result, EPA selection was oriented toward candidates supported by interest groups representing environmentalists, state and local regulators, and water utilities of different types. In general, we conclude that the interests represented on NDWAC mirror the interests that were active participants in the congressional hearings on the Safe Drinking Water Act of 1996. We also conclude, contrary to much of the previous research on advisory committees, that the committee was balanced in terms of the points of view represented.

The evidence we have found in support of the mirror hypothesis is based on a single case; nevertheless, we believe the result should hold more generally. We have evidence that interest group endorsements have a significant independent impact on the agency's appointments, and this fact supports our expectation that endorsements lessen the opportunities for agency officials to appoint members to advisory committees who do not reflect the policy interests represented in the legislative debate. Thus, we have a tentative explanation for why the mirror hypothesis holds in this particular case. Our understanding of the political process behind the mirror hypothesis increases our confidence that the hypothesis holds for other advisory committees and other agencies, for the process is surely not unique to this case.

The mirror hypothesis, of course, is only one aspect of the larger structure and process argument advanced by McCubbins, Noll, and Weingast (1987,1989). Since both the mirror and deck-stacking hypotheses must hold in order for their general argument to ring true, and because empirical evidence for

the deck-stacking hypothesis is scant, our results by no means constitute broad support for the structure and process perspective. However, our analysis of the mirror hypotheses should illustrate the importance of further testing of the structure and process hypotheses. By concentrating on deck-stacking, scholars may have drawn overly pessimistic conclusions about the general structure and process argument.

We suspect one reason the mirror hypothesis has received little attention is that the notice and comment process is typically recognized as the authoritative example of structure and process. Since anyone can participate in notice and comment, the question of whether legislative participants also participate in administrative decisions is not a function of agency decision making, and thus notice and comment is not relevant to the mirror hypothesis. Notice and comment may raise the transaction costs to agencies of making decisions—agencies have to issue proposed rules, sift through comments, respond to comments—but they don't provide a way to ensure the representation or influence of particular stakeholders. Mechanisms such as advisory committees, which explicitly define and limit stakeholder participation, are much more relevant to the mirror hypothesis. Thus, different structures and processes serve different purposes, and whether one finds support for the general argument will depend partly on which process has been selected for analysis. As Huber and Shipan (2000) argue, the empirical research on bureaucratic-congressional relations should not focus merely on whether Congress exercises control, but should instead explore the relationship between political environments and institutional structures and procedures.

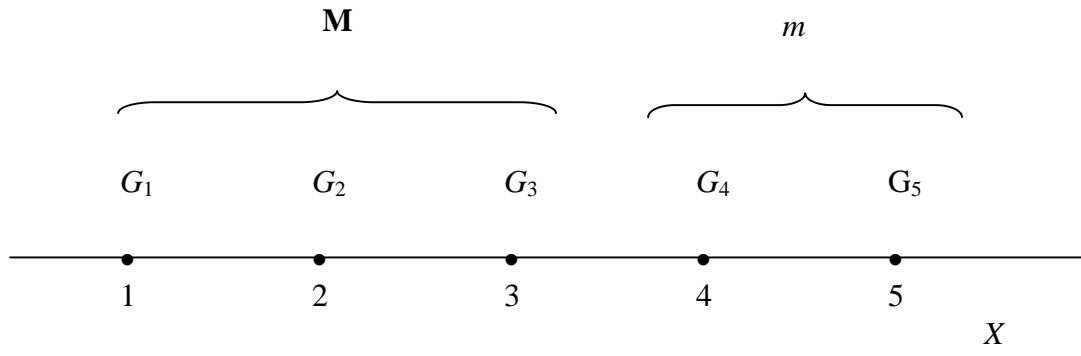
## References

- Aldrich, John H., and Forrest D. Nelson. 1984. *Linear Probability, Logit, and Probit Models*. Newbury Park, CA: Sage.
- Balla, Steven J. 1998. "Administrative Procedures and Political Control of the Bureaucracy." *American Political Science Review* 92 (September): 663-673.
- Balla, Steven J., and John R. Wright. 2000. "Can Advisory Committees Facilitate Congressional Oversight of the Bureaucracy?" In *Congress on Display, Congress at Work*, ed. William T. Bianco. Ann Arbor, MI: University of Michigan Press. Forthcoming.
- Banks, Jeffrey and Barry R. Weingast. 1992. "The Political Control of Bureaucracies Under Asymmetric Information," *American Journal of Political Science* 36: 509-524.
- Bender, Jon, Serge Taylor, and Roland Van Gaalen. 1985. "Bureaucratic Expertise vs. Legislative Authority: A Model of Deception and Monitoring in Budgeting," *American Political Science Review* 79:1041-60.
- Chamberlain, Gary. 1980. "Analysis of Covariance with Qualitative Data." *Review of Economic Studies* 47 (January): 225-238.
- Coglianesi, Cary. 1997. "Assessing Consensus: The Promise and Performance of Negotiated Rulemaking." *Duke Law Journal* 46 (April): 1255-1349.
- Downs, Anthony. 1967. *Inside Bureaucracy*. Boston, MA: Little, Brown.
- Eisner, Neil. 1984. "Regulatory Negotiation: A Real World Experience." *Federal Bar News and Journal* 31 (November): 371-376.
- Epstein, David, and Sharyn O'Halloran. 1995. "A Theory of Strategic Oversight: Congress, Lobbyists, and the Bureaucracy." *Journal of Law, Economics, and Organization* 11: 227-255.
- Ferejohn, John A. 1987. "The Structure of Agency Decision Processes." In *Congress: Structure and Policy*, ed. Mathew D. McCubbins and Terry Sullivan. New York, NY: Cambridge University Press. Pp. 441-461.
- Greene, William H. 1993. *Econometric Analysis*, 2d ed. Englewood Cliffs, NJ: Prentice Hall.
- Gujarati, Damodar N. 1995. *Basic Econometrics*, 3d ed. New York, NY: McGraw-Hill.
- Hamilton, James T. 1996. "Going by the (Informal) Book: The EPA's Use of Informal Rules in Enforcing Hazardous Waste Laws." In *Reinventing Government and the Problem of Bureaucracy*, ed. Gary D. Libecap. Greenwich, CT: JAI Press. Pp. 109-155.

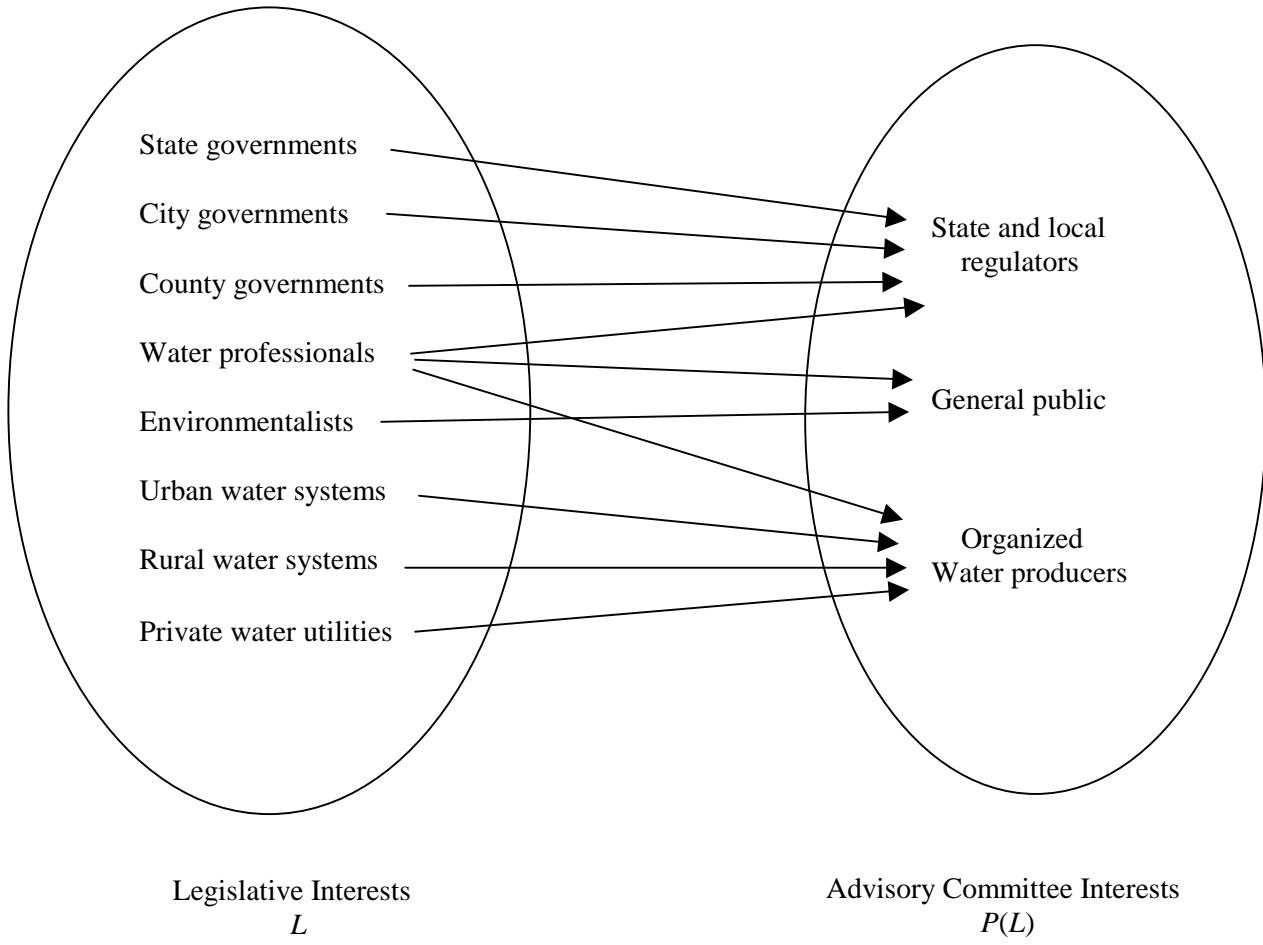
- Hamilton, James T., and Christopher H. Schroeder. 1994. "Strategic Regulators and the Choice of Rulemaking Procedures: The Selection of Formal vs. Informal Rules in Regulating Hazardous Waste." *Law and Contemporary Problems* 57(Winter): 111-160.
- Hill, Jeffrey S., and James E. Brazier. 1991. "Constraining Administrative Decisions: A Critical Examination of the Structure and Process Hypothesis." *Journal of Law, Economics, and Organization* 7 (Fall): 373-400.
- Huber, John and Charles R. Shipan. 2000. "Legislators and Agencies: A Theoretical Appraisal," *Legislative Studies Quarterly*, forthcoming.
- Kerwin, Cornelius M. 1999. *Rulemaking: How Government Agencies Write Law and Make Policy*, 2d ed. Washington, DC: CQ Press.
- Levine, Richard O. 1973. "The Federal Advisory Committee Act." *Harvard Journal on Legislation* 10 (February): 217-235.
- Leyden, Kevin M. 1995. "Interest Group Resources and Testimony at Congressional Hearings," *Legislative Studies Quarterly* 20 (August): 431.
- Markham, Jerry W. 1974. "The Federal Advisory Committee Act." *University of Pittsburgh Law Review* 35 (Spring): 557-608.
- Mashaw, Jerry L. 1990. "Explaining Administrative Process: Normative, Positive, and Critical Stories of Legal Development." *Journal of Law, Economics, and Organization* 6(Special Issue): 267-298.
- McCubbins, Mathew D., Roger G. Noll, and Barry R. Weingast. 1987. "Administrative Procedures as Instruments of Political Control." *Journal of Law, Economics, and Organization* 3: 243-277.
- McCubbins, Mathew D., Roger G. Noll, and Barry R. Weingast. 1989. "Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies." *Virginia Law Review* 75: 431-482.
- McCubbins, Mathew D., and Thomas Schwartz. 1984. "Congressional Oversight Overlooked: Police Patrols versus Fire Alarms." *American Journal of Political Science* 28: 165-179.
- Miller, Gary and Terry Moe. 1983. "Bureaucrats, Legislators, and the Size of Government," *American Political Science Review* 77: 297-322.
- Moe, Terry M. 1990. "Political Institutions: The Neglected Side of the Story," *Journal of Law, Economics, and Organization* 6: 213-253.
- Niskanen, Jr., William A. 1971. *Bureaucracy and Representative Government*. Chicago, IL: Aldine-Atherton.
- Noll Roger G. 1985. "Government Regulatory Behavior: A Multidisciplinary Survey and Synthesis." In *Regulatory Policy and the Social Sciences*, ed. Roger G. Noll.

- Berkeley, CA: University of California Press. Pp.9-63.
- Petracca, Mark P. 1986. "Federal Advisory Committees, Interest Groups, and the Administrative State." *Congress and the Presidency* 13 (Spring): 83-114.
- Pika, Joseph A. 1983. "Interest Groups and the Executive: Presidential Intervention." In *Interest Group Politics*, ed. Allan J. Ciglar and Burdett A. Loomis. Washington, DC: CQ Press. Pp. 298-323.
- Priest, T.B., Richard T. Sylvester, and David F. Scudder. 1984. "Corporate Advice: Large Corporations and Federal Advisory Committees." *Social Science Quarterly* 65 (March): 100-111.
- Spence, David B. 1999. "Managing Delegation Ex Ante: Using Law to Steer Administrative Agencies." *Journal of Legal Studies* 28 (June): 413-459.
- Stewart, Richard B. 1975. "The Reformation of American Administrative Law." *Harvard Law Review* 88(June): 1667-1813
- Sunstein, Cass R. 1986. "Factions, Self-Interest, and the APA: Four Lessons Since 1946." *Virginia Law Review* 72(\*): 271-296.
- U.S. Congress. Senate. Subcommittee on Intergovernmental Relations of the Committee on Government Operations. 1970. *Advisory Committees: Hearings on S. 3067*. 91<sup>st</sup> Cong., 2d sess., 8-9 October.
- U.S. Department of Agriculture. Food Safety and Inspection Service. 1996. "Pathogen Reduction; Hazard Analysis and Critical Control Point (HACCP) Systems." *Federal Register* 61 (July 25): 38805-38989.
- West, William F. 1995. *Controlling the Bureaucracy: Institutional Constraints in Theory and Practice*. Armonk, NY: M.E. Sharpe.

**Figure 1: Policy and Interest Group Positions for the Mirror and Deck-Stacking Hypotheses**



**Figure 2: Relation Between Legislative Interests and Advisory Committee Interests**



**Table 1: Organizational Participants at Congressional Hearings**

| <i>Organization</i>                               | <i>Description</i>   | <i>Interest</i>             |
|---|--|-----------------------------|
| American Water Works Association (AWWA)           | <ul style="list-style-type: none"> <li>• nonprofit scientific and educational society</li> <li>• 50,000 members include treatment plant operators and managers, scientists, environmentalists, manufacturers, academicians, regulators, and 4,000 utilities that supply water</li> </ul> | indeterminate               |
| Association of Metropolitan Water Agencies (AMWA) | <ul style="list-style-type: none"> <li>• membership consists of 137 metropolitan water suppliers</li> </ul>  | urban water producers       |
| National Association of Counties (NACo)           | <ul style="list-style-type: none"> <li>• 1800 member counties</li> <li>• represents county governments in Washington, DC</li> </ul>  | state and local government  |
| National Association of Water Companies (NAWC)    | <ul style="list-style-type: none"> <li>• national trade association exclusively representing the private and investor-owned water utility industry</li> <li>• membership consists of 360 privately owned water utilities</li> </ul>  | private water producers     |
| National Governors Association (NGA)              | <ul style="list-style-type: none"> <li>• members are the governors of the fifty states, the Northern Mariana Islands, Puerto Rico, American Samoa, Guam, and the Virgin Islands</li> </ul>   | state and local governments |
| National League of Cities (NLC)                   | <ul style="list-style-type: none"> <li>• represents directly 49 leagues and more than 1,500 cities, towns and villages</li> </ul>  | state and local governments |
| Natural Resources Defense Council (NRDC)          | <ul style="list-style-type: none"> <li>• 400,000 members</li> <li>• purpose is to safeguard resources of water, land, and air</li> </ul>   | environmental               |
| National Rural Water Association (NRWA)           | <ul style="list-style-type: none"> <li>• federation of 45 state rural water associations representing 19,000 water and wastewater utilities</li> </ul>   | rural water producers       |

**Table 2: NDWAC Nominations and Appointments  
by Interest Group Endorsements**

| Interest Group <sup>1</sup> | Membership Category (Vacancies) |           |                     |           |                     |           |
|-----------------------------|---------------------------------|-----------|---------------------|-----------|---------------------|-----------|
|                             | General Public (6)              |           | State and Local (7) |           | Water Producers (5) |           |
|                             | Endorsed                        | Appointed | Endorsed            | Appointed | Endorsed            | Appointed |
| ASDWA                       | 0                               | 0         | 6                   | 3         | 0                   | 0         |
| AWWA                        | 5                               | 0         | 7                   | 0         | 7                   | 1         |
| NAWC                        | 0                               | 0         | 1                   | 0         | 3                   | 2         |
| NRDC                        | 3                               | 2         | 0                   | 0         | 1                   | 0         |
| NRWA                        | 0                               | 0         | 2                   | 0         | 1                   | 1         |

<sup>1</sup> ASDWA: Association of State Drinking Water Administrators; AWWA: American Water Works Association; NAWC: National Association of Water Companies; NRDC: Natural Resources Defense Council; NRWA: National Rural Water Association

**Table 3: Overview of Variables**

| <i>Variable</i>       | <i>Description</i>  | <i>Mean</i> | <i>Standard<br/>Deviation</i> | <i>Direction of<br/>Expected Effect</i> |
|-----------------------|---|-------------|-------------------------------|---|
| EPA Selection         | candidate was selected for NDWAC membership (yes, no)                       | .16         | .37                           |   |
| AWWA Support          | Whether candidate was endorsed by AWWA                                      | .17         | .38                           | +                                       |
| NAWC Support          | Whether candidate nominated for producer position endorsed by NAWC          | .03         | .16                           | +                                       |
| NRWA Support          | Whether candidate was endorsed by NRWA                                      | .03         | .16                           | +                                       |
| ASDWA Support         | Whether candidate nominated for regulator position endorsed by ASDWA        | .05         | .23                           | +                                       |
| NRDC Support          | Whether candidate nominated for general public position endorsed by NRDC    | .03         | .16                           | +                                       |
| Congressional Support | Whether candidate received at least one congressional endorsement           | .07         | .26                           | +                                       |
| Demographic Balance   | Whether candidate was female, Hispanic, African American or Native American | .29         | .46                           | +                                       |
| Geographic Balance    | Number of returning NDWAC members from candidate's region                   | 1.33        | 1.09                          | -                                       |
| Reappointment         | Whether candidate was NDWAC member seeking reappointment                    | .05         | .23                           | +                                       |
| Science/Engineering   | Whether candidate had advanced training in engineering and science          | .64         | .48                           | +                                       |
| Water Experience      | Whether candidate had experience in operating drinking water systems        | .30         | .46                           | +                                       |

*Note:* The summary statistics are based on 110 observations, except for the science/engineering and water system experience variables. Due to incomplete information, these variables' summary statistics are based on 109 observations. The NRWA support variable is an indicator of NRWA support regardless of the position for which the candidate was nominated. The model experiences convergence problems when the variable is operationalized as NRWA support of candidates for producer positions.

**Table 4: The Determinants of EPA Selection**

| <i>Variable</i>                    | <i>Parameter Estimate<br/>(Standard Error)</i> |                   |
|------------------------------------|--|-------------------|
| AWWA Support                       | -1.40<br>(1.81)                                | -1.08<br>(1.13)   |
| NAWC Support                       | 3.54**<br>(1.95)                               | 2.36**<br>(1.31)  |
| NRWA Support                       | 2.65<br>(2.16)                                 | 2.07*<br>(1.46)   |
| ASDWA Support                      | 4.41**<br>(1.98)                               | 3.22**<br>(1.56)  |
| NRDC Support                       | 3.07**<br>(1.65)                               | 3.02***<br>(1.30) |
| Congressional Support              | 3.86***<br>(1.56)                              |                   |
| Demographic Balance                | -.28<br>(.86)                                  |                   |
| Geographic Balance                 | .53<br>(.42)                                   |                   |
| Reappointment                      | 1.89<br>(1.71)                                 |                   |
| Science/Engineering                | -.56<br>(.96)                                  |                   |
| Water System Experience            | .58<br>(1.76)                                  |                   |
| <i>Log Likelihood</i>              | -17.76   | -25.34            |
| <i>Likelihood Ratio Chi Square</i> | 33.24***                                       | 18.45***          |
| <i>Percent Correctly Predicted</i> | 90.83  | 85.79             |
| <i>Percent Reduction in Error</i>  | 44.44  | 13.17             |
| <i>Pseudo R<sup>2</sup></i>        | .48  | .27               |
| <i>Number of Observations</i>      | 109  | 110               |

*Note:* \*\*\*=statistically significant at  $p < .01$ , one tailed. \*\*=statistically significant at  $p < .05$ , one tailed.  
\*=statistically significant at  $p < .10$ , one tailed.

