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## *Attention to Issues in a System of Separated Powers: The Macrodynamics of American Policy Agendas*

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Theories of agenda setting ignore the macrodynamics of shifts in attention to policy issues in the American system of separated powers. Changes in attention to issues emerge from interactions between the three branches of government, as well as interactions between the government and the public. To map these complexities, we use vector autoregression methods to sort out the causal sequences and macrodynamics of issue attention over time between systemic and institutional agendas for three broad issue areas. The analyses reveal significant interactions among the institutional agendas and between the systemic and institutional agendas, but provide more support for a top-down pattern of issue attention than for the bottom-up pattern suggested by most past literature. Reductionist theories positing either a linear, unidirectional sequence of issue movement or randomness should be viewed cautiously in light of these findings, which point to the need for more holistic views of agenda setting.

**T**he dynamics of issue attention in the American system of separated powers is a neglected aspect of agenda politics. This neglect is surprising since attention is a necessary precondition for choice processes and policymaking, and because the dynamics of attention are closely intertwined with the selection of problems for active consideration on governmental agendas and the stability of policy systems. Over 20 years ago March and Olsen urged agenda theorists to realize that choice processes depend on “who is attending to what and when” and that “the core reality” of agenda dynamics is the organization of attention (March and Olsen 1976). Baumgartner and Jones (1993) more recently argued that shifts in attention to issues disrupt policy subsystems because they widen public and elite concern about particular problems and lead to broader participation in the policy process through an expansion in the scope of conflict (Schattschneider 1960). Fluctuations in attention, then, alter policymaking routines by disrupting the in-

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cremental and stabilizing tendencies of the underlying policy systems. Attention is thus a fundamental feature of agendas and policy processes.

In this study we consider the macrodynamics of attention as a central feature of what Redford terms "macro-politics" which he defined as "the politics that arises when the community at large and the leaders of the government as a whole are brought into the discussion and determination of issues" (Redford 1969, 107). More specifically, we adopt Bryan Jones's (1994, 19) perspective of agenda politics as about the "temporal policy choice made by whole political systems" and his argument that agenda theorists should be concerned with "shifts in collective attention in policy-making bodies from one constellation of policy issues to another." We accordingly focus on the macrodynamics of attention in three broad issue areas over the period 1954–90 to determine how shifts in attention in what Cobb and Elder (1972) call the institutional and systemic agendas interact with one another. Agendas include those political controversies the polity deems worthy of attention. The institutional agenda, however, includes the specific, concrete issues being attended to by the government while the systemic agenda is more general in its domain and can be taken to refer to the concerns of the public (Cobb and Elder 1972, 14). It follows that a fundamental question in democratic theory and one of the important questions of this study is the nature of the linkage between the two agendas.

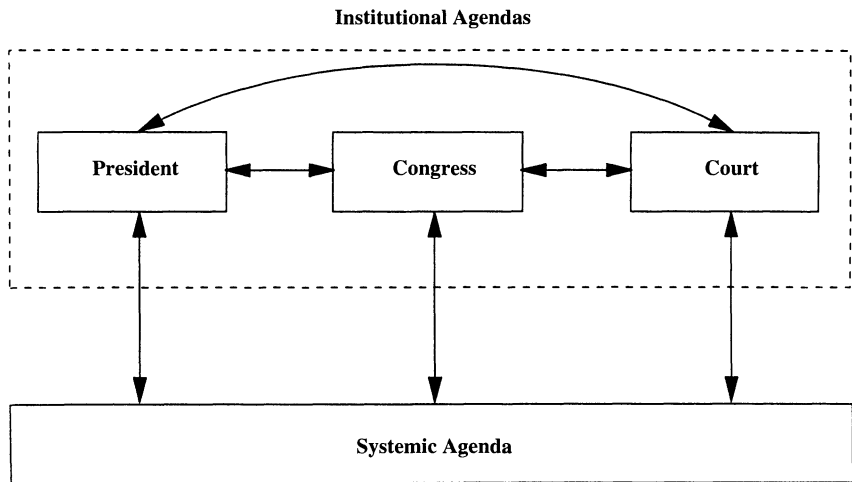
### The Macrodynamics of Issue Attention

Theoretical and empirical work on the macrodynamics of issue attention is limited. This means we have few clues as to what the structure of attention linking the various agendas might look like. In a system of separated powers in a democratic polity, myriad patterns of attention dynamics might exist. Figure 1 provides a simple illustration of what is a complex analytic problem. Institutional agendas may or may not be linked in a horizontal fashion as in Figure 1. If they are, the next question is whether the interactions are unidirectional or not, as indicated by the arrows in this figure, and whether there are feedback loops between the agendas. The systemic agenda may be linked to the institutional agendas in a bottom-up or top-down vertical fashion, plus relations may be bidirectional.

We can begin to think about these complexities by using March and Olsen's (1976) three "pure types" of attention patterns as starting points. Their first type is an "unsegmented structure" in which "anyone may attend to anything" because no formal or informal restrictions regulate who pays attention when or to what. Attention structures become "specialized" if rules or expectations partition problems and choices among participants so that they attend to different matters over time. The third type is "hierarchical" in which attention to issues is divided among participants according to their rank or standing. March and Olsen's basic patterns have some parallels in the literature on American public policymaking.

FIGURE 1

## Potential Horizontal and Vertical Patterns of Attention in the U.S. System



March and Olsen's "hierarchical" pattern, for example, resembles the sequential pattern of issue attention in the theoretical perspectives of Anderson (1975) and C. Jones (1977), who adapted Lasswell's (1966) decision-making model. According to these perspectives, issues typically appear first on the systemic agenda before moving onto an institutional agenda. Anderson and Jones portray the process as a series of linked stages, often with feedback loops; their models implicitly assume issues must pass increasingly higher thresholds of attention at each successive stage. As a result, few matters of concern become issues; few issues become public problems; few public problems reach the public agenda; and few problems reaching the public agenda find solutions in public policy. Cobb and Elder (1972) suggest that one result of this process is that the institutional agendas typically lag behind changes in the systemic agenda.

This hierarchical, sequential model, which posits that attention moves in bottom-up vertical fashion from the systemic to institutional agendas, portrays the movement of issue attention as a linear, incremental, and unidirectional phenomenon. A contrasting view is that the macrodynamics of issue attention are unsegmented—that they are disorderly and unpredictable with no simple relationship between agendas. Kingdon (1984), using a "garbage can" model of organizational choice (Cohen, March, and Olsen 1972), claims that policymaking in the American system is analogous to a system of "organized anarchy" with "problematic preferences," "limited rationality," and "fluid participation." Under these conditions the structure of attention to issues is unstable and stochastic (March and Olsen 1976, 45). Attention wanders over time according to the vari-

able participation of actors who come and go because of personal preferences, elections, appointments, unexpected events, and opportunities to participate in other venues. Problems, solutions, and politics are separate streams moving randomly over time that become coupled primarily as a matter of chance and fortuitous circumstance. In this unsegmented model, the vertical links between the systemic and institutional agendas as well as the horizontal connections between the three institutional agendas are highly attenuated.

Previous research on agenda setting slights consideration of interactions between institutional agendas that may lead to specialized patterns of attention or to sequential patterns between the three branches. For example, presidential attention may direct congressional attention because of the jointly coupled nature of the policymaking process and contemporary expectations regarding presidential leadership. All presidents come to office with an issue agenda and attempt to implement that agenda through legislative processes (Fishel 1985). Presidential influence also extends to the Supreme Court's agenda through the solicitor general, whose recommendations regarding writs of certiorari carry considerable weight with the justices as they prepare the Court's docket (Caldeira and Wright 1988, 1990; Salokar 1992). As a result, presidential concerns may shape the agendas of the other two branches.

On the other hand, congressional priorities may affect presidential agendas. For example, presidents borrow issues from Congress for their legislative packages (Light 1991). Congressional entrepreneurs also initiate attention processes followed by increased presidential attention through either cooperation (Kingdon 1984) or competition (C. Jones 1975). And, in the broadest sense, Congress, through the passage of laws, ultimately shapes the composition of cases heard by the Supreme Court. Over the long term, both the president and Congress jointly influence the Court's agenda by changing policy preferences on the bench through appointments (Pacelle 1991, 1995). The Court's influence on the elected branches' agendas has been less thoroughly explored. Yet, the historical record reveals many Court opinions forced issues into the Oval Office, onto the floors of Congress (Fisher 1988), and into the consciousness of the American public—abortion being a prime example of the Court's influence (Craig and O'Brien 1993). The Court's decisions can also alter the attention paid by the media to issues (Flemming, Bohte, and Wood 1997).

In summary, theory and research on agendas point to several possible patterns of issue attention in the United States. One pattern could be hierarchical in which attention to issues moves over time in a nonrandom sequence between the systemic and institutional agendas. These movements, however, could occur in a democratic, bottom-up fashion or in an elitist, top-down fashion. A specialized pattern of institutional attention might also exist between the president, Congress, and Supreme Court with each more or less tending to different issue areas, or the pattern could be sequential with shifts in attention by one branch leading to similar shifts for the other two branches. Whether the movement of issue

attention for either of these patterns is bottom-up or top-down, however, is a moot question. An alternative image to these various patterns is that attention moves stochastically through unsegmented structures in which agenda setting exhibits no particular dependence either vertically between the systemic and institutional agendas or horizontally across the three institutional agendas.

### Research Design and Measurement

Our measures of attention to issues assume that paying attention to something consumes time. The ability to attend to many different things is limited by the cognitive capabilities of human beings, who typically process information in a serial fashion (B. Jones 1994). The process of paying attention therefore entails opportunity costs for individuals; time spent on one thing precludes attending to another. Organizations try to overcome these limitations by multiplying the resources required for attention. Even here—as Simon (1945), March and Simon (1958), Allison (1971), and March and Olsen (1989) emphasize—organizations are unlikely to process optimally the information that comes from attending to many things at once.

Congress, the president, and the Supreme Court, we assume, use their limited time for matters they consider important. Our measure of congressional attention accordingly is the number of days of hearings devoted to an issue area as a proportion of all hearing days reported by the *Congressional Information Service Index (CIS)*. We conducted keyword searches of *CIS* to identify when hearings were held and screened the hearings carefully so that only the days actually focused on topics germane to the agenda items were counted. We excluded hearings involving appropriations, nominations, or reauthorizations so our measures would not be inflated by routine matters (Walker 1977). Our other measures of attention are less direct indicators of how presidents and the Court allocated their time among policy areas.

Presidents reveal their priorities through State of the Union addresses, budget messages, statements on pending legislation, speeches, letters, briefings, and comments or remarks at press conferences. The frequency with which they discuss certain topics in these ways offers an indirect measure of White House attention to and the emphasis placed on particular policy areas. To create a measure along these lines, we used *The Public Papers of the Presidents*. For the various headings in the subject index corresponding to the different aspects of our issue areas, we counted the number of pages during each year under each heading as indicators of presidential attention. We normed the number of pages devoted to each issue area by dividing by the total pages during each year. Thus, the presidential measure is a surrogate for the proportion of the president's time allocated to specific issues.

For the Supreme Court, we adopted Pacelle's (1991) notion of "agenda space"—i.e., the total number of cases decided during a term—as an approximation of the Court's available attention. We used the *Supreme Court Judicial*

*Database* (Spaeth 1993) to identify keywords in each of our issue areas. We then selected all cases considered by the Court using the keywords. The measure of attention is the proportion of cases heard in each of the three issue areas in each Supreme Court term.<sup>1</sup> Because the Court's time and resources to hear and decide cases are finite, the proportions of cases involving these issue areas are a good surrogate for the relative attention and importance the Court gives to these issues.

The selection of issue areas for this study confronted us with a complex problem. How can we select issues that are likely to be objects of attention by all *three* institutions as well as the systemic agenda over a 39- year period? Some issues and policy areas are so institutionally specific or so lacking in public salience that minimal interaction occurs among the agendas. If we ignored this problem and randomly sampled issues, our analysis very likely would understate the degree of interaction. Policy typologies offer little help since they tend to have a congressional focus and have had limited empirical verification (Heckathorn and Maser 1990). Another consideration is that the issue area cannot be narrowly defined or overly specific; otherwise the chances are that the issue will not retain its salience or visibility over the years of our study. We proceeded on the assumption that agenda interaction occurs when issues are generally politically important over time. This necessarily narrows our range of options, however, because of the Supreme Court's narrower range of concerns, plus the fact that the Court often deals with questions of very low salience to the general public and media.<sup>2</sup> We chose three broad issue areas—civil rights, civil liberties, and environmental matters—for this study.

<sup>1</sup> This measure includes both plenary decisions and per curiam decisions. Because per curiam or summary dispositions are processed more quickly than plenary decisions (Perry 1991), the inclusion of per curiams could be seen as inflating the attention measure especially since they are often numerous (Epstein et al. 1994, 72–73). This decision can be justified with respect to how the Court's "interpreting population" (Johnson and Canon 1984) perceives plenary and per curiam decisions. Stern and his colleagues (1993, 250–58), in their guide for lawyers who practice before the Supreme Court, point out that per curiam decisions often deal with the merits of cases; that they can be controversial; and that they may carry policy weight or have precedential value. Even per curiams issued without oral argument are not merely procedural in nature (Wasby et al. 1992). Finally, during the 1960s and 1970s, the Court used per curiams with some frequency in the hotly contested terrains of civil rights and civil liberties (Wasby et al. 1992). While the visibility of these opinions to the mass public or media may be lower than for plenary decisions, it would be a mistake to dismiss per curiam opinions as lacking significance for understanding the interaction between the Court's agenda and other agendas.

<sup>2</sup> Important case studies of policy agendas have focused more narrowly on specific matters such as child abuse (Nelson 1984), race (Carmines and Stimson 1989), smoking (Fritschler 1969), pesticides (Bosso 1987), health and transportation (Kingdon 1984), or a range of issues ranging from drug abuse and nuclear power to urban problems (Baumgartner and Jones 1993). One feature all of these issues share in common is that they virtually preclude any chance of determining whether the Supreme Court shapes the institutional or systemic agendas in any systematic way. Issues like these rarely appear on the Supreme Court's agenda unless the focus turns to the implementation phase of the policy process. Melnick's (1994) study of welfare rights and policies offers a recent example of this well-established genre. During the early phases of the policy process, however, the Court seems to stand in the wings, out of the limelight, waiting to make its appearance. This portrayal of the Supreme Court may be deceptive simply because the customary sampling frame of issues is inappropriate and inadequate.

Civil rights as a general issue includes matters dealing with racial, gender, and age discrimination. (See the appendix for the specific keywords used to define this policy area.) These clearly important policy problems have evolved over the past 40 or more years through the interplay of decisions by all three branches. More important from our perspective, the selection of this issue does not preordain the outcome of our analysis; all three branches at various times have made major decisions that affected the others (e.g., Eskridge 1991; Graham 1992; Rosenberg 1991). The civil liberties issue pertains to church–state relations, obscenity, and libel and freedom of the press. At first glance, it may seem that the Supreme Court dominates this area, focusing or redirecting the attention of other institutions and the systemic agenda. For example, the Court’s school prayer decisions sparked intense debate in Congress, opposition from presidents, and disfavor by many citizens both at the time the decisions were handed down and for many years afterward (Keynes 1989; Moen 1989; Reichley 1985). However, it may well be that systemic and institutional reactions to the Court create feedback relations that beget future judicial attention as Congress, the president, and public seek to mitigate the effects of controversial decisions. The environmental issue area focuses on matters relevant to pollution, conservation, clean air, clean water, toxic waste, and the environment more generally. The Congress has been more attentive to these issues than either the president or Supreme Court. However, there have been periods of intense presidential interest, especially during the 1970s. Since the passage of the National Environmental Policy Act of 1969 and other legislation that liberalized standing on environmental issues (Melnick 1983), the Court has also been more active. Figure 2 portrays the attention time series for the three institutional agendas for the three issue areas. Rising proportions indicate greater attention, while falling proportions mean declining attention; the note at the bottom of the figure provides a sense of the raw numbers associated with the different proportions.

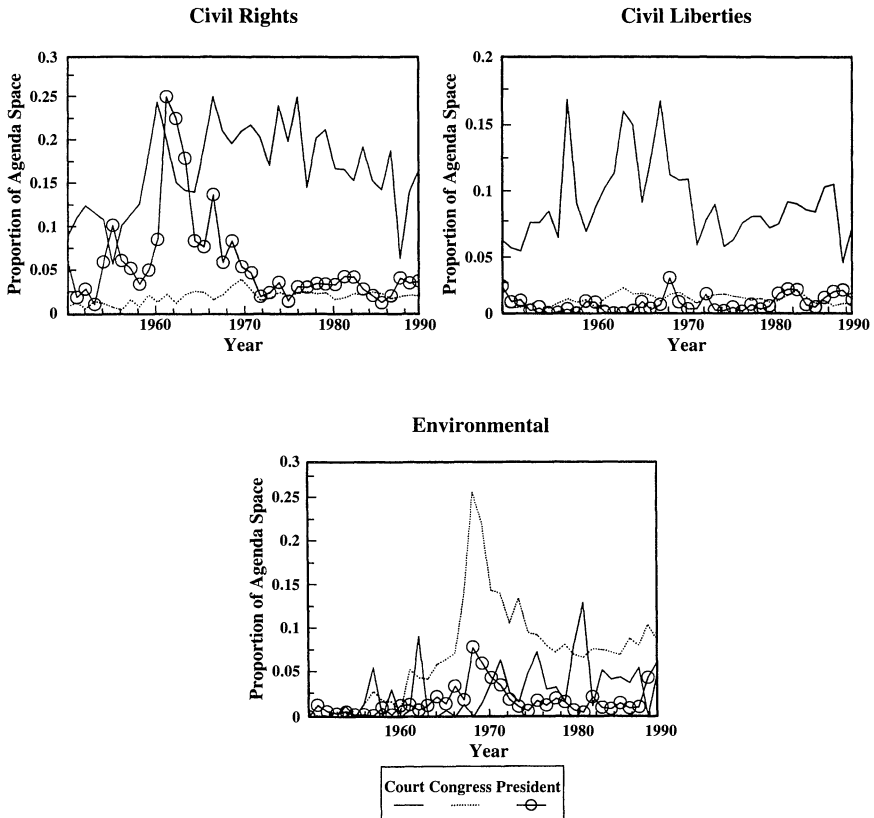
The higher proportions for the Supreme Court shown in the civil rights and civil liberties domains point to the importance the Supreme Court has given these issues areas, but as a methodological issue they also reflect the Court’s restricted agenda space compared to Congress and the president. Likewise, for environmental issues the higher proportion for congressional attention suggests that Congress has been more attentive than the other two institutions to these issues. While suggestive, these time series also illustrate the complex nature of the relationships between the agendas, for they reveal no simple or obvious temporal patterns.

Systemic attention is measured on the basis of the print media’s attention to the three issue areas. Because the study period extends over almost four decades, there is insufficient public opinion data for each of the issue areas to track the public’s concerns over time. We therefore followed the lead of Baumgartner and Jones (1993), who relied extensively on counts of periodical articles using *The Reader’s Guide to Periodical Literature* to trace changes in issue agendas. Our measures are necessarily approximations of the entire print media’s attention to



FIGURE 2

Presidential, Congressional, and Supreme Court Attention to Civil Rights, Civil Liberties, and Environmental Issues, 1952–1990

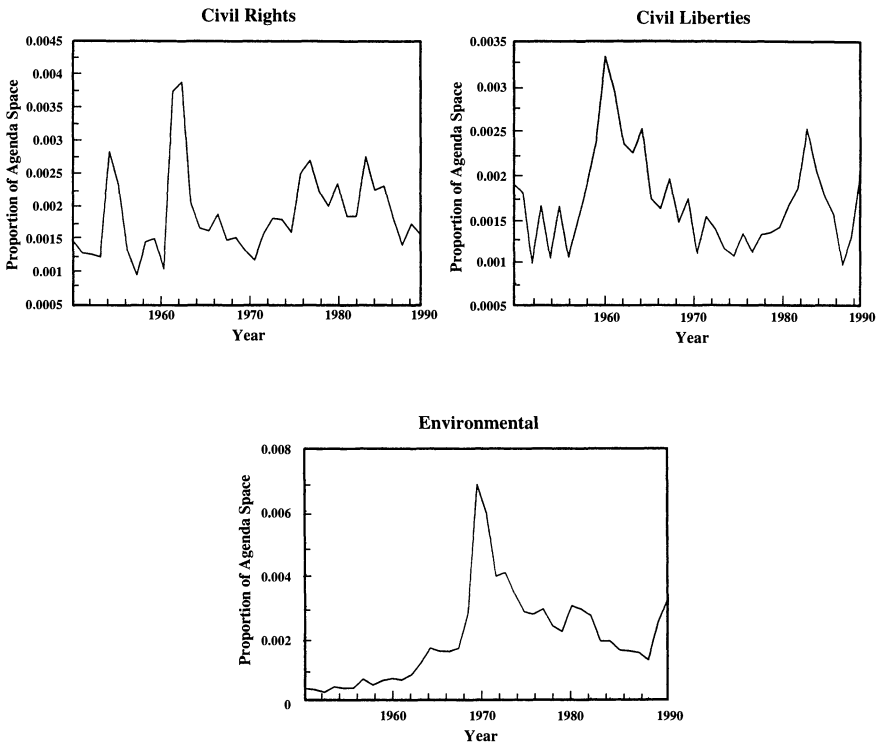


*Note:* Supreme Court attention is the proportion of total cases per term on the issue. Congressional attention is the proportion of total hearing days annually on the issue. Presidential attention is the proportion of total pages in *The Public Papers of the Presidents* annually on the issue. Annual numerical averages are as follows: Civil Rights—Supreme Court (25.54 cases); Congress (49.18 hearing days); president (79.44 pages); Civil Liberties—Supreme Court (13 cases); Congress (34.44 hearing days); president (11.31 pages); Environmental—Supreme Court (4.54 cases); Congress (111.26 hearing days); president (27.36 pages).

issues, although similar measures are highly correlated with the attention paid by the *New York Times* to issues (e.g., Baumgartner and Jones 1993, 257–59). Our measures, moreover, are indicators of media attention, not the public's attention to issue areas. Nevertheless, the relationship between media coverage of issues and the public's concerns, while complex and interactive, has been found in other

FIGURE 3

## Systemic Attention to Civil Rights, Civil Liberties, and Environmental Issues, 1952–1990



Note: Systemic attention is the proportion of total articles annually in the *Reader's Guide to Periodical Literature* devoted to each issue. Annual numerical averages are as follows: Civil Rights (219.85); Civil Liberties (148.36); Environmental (176.31).

studies to be sufficiently correlated that the measures are reasonable surrogates for systemwide attention (e.g., MacKuen and Coombs 1982).

Keywords from the searches pertaining to the institutional agendas were matched with comparable keywords in the *Reader's Guide*. The appendix shows these codes, the keywords, plus the chief "see also" headings in the *Reader's Guide* used to track attention to our issue areas. Simple numerical measures of attention, it should be noted, could rise or fall with the number of periodicals listed, giving a false impression of changes in issue attention. To avoid this problem, samples of pages from each volume were taken and the total number of articles for each year estimated from these samples. As with the measures of attention for the institutional agendas, the media measure was normed to these annual totals. Figure 3 shows the time series for systemic attention to each of the three issue areas.

### Method of Analysis

As Figure 1 and our theoretical discussion suggest, the dynamics of issue attention may be structured in different ways. If attention is patterned in a sequential, bottom-up manner, the causal path would run from the systemic agenda to one or more of the three institutional agendas. It is also possible that one or more of the institutional agendas drives systemic attention to issues, implying a top-down process. Both views ignore the likelihood of feedback, which would imply joint causality between the two sets of agendas. Adding to this complexity, the three institutional agendas could interact among themselves in diverse ways. In short, this system of agendas may be composed entirely of endogenous variables in which oscillations in attention on one agenda cause shifts in attention on every other agenda. The null hypothesis for our analyses is that the agendas are not linked in any nonrandom way. Instead, each agenda, decoupled from the others in an unsegmented system, is propelled over time by its own dynamic characteristics.<sup>3</sup> These contrasting theoretical expectations, when combined with the absence of previous research on this topic, mean there are few guidelines for specifying a well-identified structural equation model. Under these circumstances a vector autoregressive (VAR) approach is appropriate.

VAR models impose fewer and weaker restrictions on model specification and estimation than do structural equation models (Freeman, Williams, and Lin 1989). In particular, VAR models assume that all causal influences are equally important in all directions until it can be shown empirically to be otherwise. VAR models take the following form:

$$y_t = v + \Theta_1 y_{t-1} + \dots + \Theta_p y_{t-p} + v_t,$$

where  $y$  is a vector of potentially endogenous variables,  $\Theta$  is a vector of regression parameters whose elements are associated with lags of each variable in the system,  $p$  is the number of included lags of each variable,  $v$  is a vector of constants for each equation, and  $v_t$  is a vector of disturbances for each equation. A VAR system consists of  $M$  equations associated with each of the  $M$  potentially endogenous variables. In this case we have four potentially endogenous variables, and therefore four equations. The disturbances in a VAR system have the same stochastic properties as those of an unrestricted reduced form simultaneous equation model (Judge *et al.* 1988, 753). That is, they have zero means, are nonautocorrelated, and have the same covariance matrix ( $\Sigma_v = E[v_t v_t']$ ). The difference is that VAR operationalizes admitted ignorance by imposing no restrictions on the coefficients of variables or lags of variables in the system. VAR is a time-series method in which lags of the endogenous variables are added to the equation system until an infinite order vector ARMA process is approximated. The goal is to produce white noise disturbances ( $v_t$ ) and, therefore,

<sup>3</sup> According to B. Jones's (1994) argument about democratic decision making, such a pattern would resemble "parallel processing" in which the streams of attention do not routinely intermingle.

consistent estimates of the error variance for hypothesis testing and simulations.<sup>4</sup> Lagging the system variables also effectively controls for the system's inertia, which could otherwise produce spurious inferences if left uncontrolled. By controlling for history, VAR is also less prone to specification error than more commonly used structural equation approaches.<sup>5</sup>

<sup>4</sup>The issue of time-series stationarity is relevant to whether estimates of the error variance do in fact produce valid hypothesis tests. Contrary to Box-Jenkins or regression analysis, the common wisdom in the VAR literature has always been that time series should *not* be differenced (e.g., see Doan 1996: 8-3; Harvey 1990: 83; Sims, Stock, and Watson 1990). This is because differencing throws away important information about the long-term dynamics of the system, and also fails to capture possible cointegrating relationships. Additionally, the result in Fuller (1976, Theorem 8.5.1) shows that differencing produces no gain in asymptotic efficiency, even if it is appropriate. Recently, however, it has been suggested that VAR hypothesis tests with integrated data in levels may reject the null hypothesis of no causal relation too often (e.g., see Ohanian 1988; Phillips 1992). Freeman et al. (1998) use Monte Carlo analysis to evaluate these claims, as well as to assess the statistical properties of an alternative estimator, FM (Fully Modified)-VAR (Phillips 1995). Freeman et al. (1998) show that with integrated and near-integrated data, standard OLS VAR methods do in fact falsely reject the null hypothesis more often than the FM estimator (about 11–12% of the time, compared with from 1–9% for the FM estimator). However, the probability of Type II error is also much larger for the FM estimator. For samples of 100, the OLS estimator correctly found causal relations with integrated data about 87–88% of the time, while the FM estimator found them only about 28–49% of the time. Thus, the choice of which estimator to use obviously depends on one's research philosophy. OLS-VAR is more liberal and marginally prone to Type I error; FM-VAR is more conservative, but is significantly more prone to Type II error. In this study we use conventional OLS-VAR methods for several reasons. First, there is a reasonable statistical rationale for sticking with the traditional estimator. Sims (1988; see also Sims and Uhlig 1991) notes that under specific Bayesian assumptions OLS-VAR *p* values for VARs in levels are fine. Furthermore, the behavior of the likelihood function is undeniably described by the test statistic values (Freeman et al. 1998). Second, it is nearly impossible for the variables of our analysis to be integrated from a substantive theoretical standpoint, so the traditional estimator is more appropriate. Shocks to an integrated series cumulate and remain forever in the time-series sequence. However, shocks in issue attention are unlikely to remain forever in the time-series sequence, due to the brief attention span and restricted agenda spaces of institutional and media actors. Moreover, issue attention cannot have infinite variance, because the particular issues examined here will never occupy all of the agenda spaces at any one time period. Finally, we report different types of evidence beyond the Granger tests in reaching conclusions about the relationships, including moving average responses and forecast error variance decompositions. These are not subject to the critique discussed above, and in most cases confirm the results of the standard hypothesis tests. When they do not confirm, we report and discuss the anomaly.

<sup>5</sup>With respect to statistical inference, too much control should be avoided because the number of lags affects the statistical power of hypothesis tests. Too many lags can produce Type II inference error (failing to reject the null hypothesis when it is actually false), while including too few lags may produce Type I inference error (falsely rejecting the null hypothesis when it is true). Accurate VAR lag length is often critical to hypothesis tests, but less so to simulation analysis. The literature on VAR offers two different approaches to choosing the proper lag length. Sims (1980, 17–18) recommends a hypothesis testing approach and a modified likelihood ratio test. This approach begins with an upper lag length and then omits lags until an omitted lag is nonsignificant using the test statistic.  $\chi^2 = (T - c)[\log |\Sigma_r| - \log |\Sigma_u|]$ .  $|\Sigma_r|$  and  $|\Sigma_u|$  are the determinants of the restricted and unrestricted covariance matrix of disturbances, *T* is the degrees of freedom (which is simply the total number of omitted lags for all variables in all equations), and *c* is the multiplier correction factor (which is the

With VAR there are a range of useful tools for evaluating relations between variables. One perspective is that these models are a multivariate extension of the Granger (1969) approach to causal analysis. Each dependent variable is regressed on lagged values of itself, as well as on lagged values of the other dependent variables in the system. Hypothesis tests are then performed to evaluate the joint exogeneity of the lags for each variable. Granger causality means that, controlling for the history of the left side variable (by including lags) and all other dependent variables in the system, a variable (i.e., its lags) has a statistically significant effect on the equation time path. Because of the typically high collinearity that exists among the variables in such systems, however, we can place little reliance on the actual regression coefficients and their standard errors. Rather, we use F-tests for evaluating the joint significance of blocks of lags on each variable. Here, however, caution is required when drawing inferences about causality. The problem is that the F-tests obscure the individual coefficient signs, which have little meaning anyway because of collinearity. Additionally, the F-tests contain no information about the dynamics of the VAR system, often missing feedback relationships. Thus, the Granger tests provide only cursory information about *which* variables might be related and *how*.

To determine the nature of VAR relationships, the analyst does “innovation accounting.” Innovation accounting is a simulation analysis that tracks the dynamics of the VAR system through time by computing a forecast error variance decomposition and moving average response based on the autoregressive coefficient matrix. Forecast error variance decomposition partitions the error variance from simulations at each time period into proportions accounted for by its own innovations as opposed to innovations in the other variables in the system.

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number of variables in each restricted equation). The test statistic is distributed  $\chi^2$  with T degrees of freedom. In contrast, Judge et al (1988, 761–64) suggest using an information criterion approach, in particular Akaike’s (1974) criterion (AIC) and/or Schwarz’s (1978) Bayesian criterion (SC). The information criterion approach is to minimize AIC or SBC. AIC is computed:

$$AIC = \log[\Sigma_r] + \frac{2k}{T},$$

where  $T$  is the number of time points and  $k$  is the number of omitted lags in all equations. SBC is computed:

$$SC = \log[\Sigma_r] + \frac{k \log[T]}{t}.$$

We employed both approaches in determining an appropriate lag length. Both indicated that a one-year lag was the appropriate control for history in the VARs for civil rights and civil liberties issues, while two years of lags were appropriate for environmental issues. We evaluated the residuals from all final equations using correlograms and hypothesis tests. In all cases there were no significant lag coefficients in the first three, and we were unable to reject the null hypothesis that residuals were white noise. Therefore, all VARs met the criterion of producing vector white noise and an infinite-order autoregressive process.

If a variable is exogenous to the rest of the system, then it should account exclusively for the changes in its own explained variance through time, and the proportion accounted for should approach unity. There should be little effect from the other variables in the system. On the other hand, if the variable is caused by one or more of the other variables in the system, then some of its forecast error variance will be explained by other variables as the system dynamics evolve through time.<sup>6</sup>

The moving average response is the simulated response of the other variables in a system over a period of time to a unit shock in a variable of interest. If a variable causes other variables, then a simulated shock to that variable should produce responses in the caused variables. We present results from the moving average responses in graphical/tabular form, with the shocked variables arrayed along the diagonal of the figures, and with the responding variables arranged in the corresponding rows.<sup>7</sup> The rows in the figures enable readers to discern which agenda in a particular row responded to the shocked variable. We standardized all variables prior to the analysis in order to facilitate interpretation of the simulations.<sup>8</sup>

## Results

In this section we report results of the VAR analyses that reveal the interdependence of attention for the three major U.S. institutional actors and system.

<sup>6</sup>We used a Choleski factored orthogonalization for all simulations. Such simulations are always sensitive to the ordering of variables, because the orthogonalization matrix is different for each different ordering of the variables. Variables that are exogenous and affect other variables (exogenous causers) are useful in sorting out dynamic relations since there is no feedback, while variables that are exogenous with no accompanying effect on other variables (exogenous noncausers) are irrelevant to causal relations. In this research report we follow the rule of reporting exogenous causers, when they exist, first in the ordering, with exogenous noncausers last. Changing the ordering of the variables can provide clues as to the nature of system dynamics; we examined all possible orderings of the variables. Because of space limitations, we report only one ordering. Other orderings are available from the authors on request.

<sup>7</sup>Following the lead of Sims (1980) in economics and Freeman, Williams, and Lin (1989) in political science, we do not report standard errors on either the forecast error variance decompositions or moving average responses. In practice, these simulations are highly nonlinear functions of the estimated parameters, with a large number of terms that have large standard errors due to collinearity. This makes calculating confidence intervals by linearization infeasible. It is possible to generate standard errors by Monte Carlo integration or bootstrapping (e.g., see Hamilton 1994, 336–40). In practice, however, these simulated standard errors for dynamic inferences are often extremely large (e.g., see Lutkepohl 1990; Runkle 1987). Commenting on Runkle's approach to computing such standard errors, Sims (1987) suggests that they have only an asymptotic justification, and then require *extremely* large samples to be valid.

<sup>8</sup>It may also be of interest to evaluate the diagonality of  $\Sigma_v$ , which provides evidence of contemporaneous relations between variables. A lack of Granger causality, combined with contemporaneous correlation between variables, is sometimes taken as evidence of "rational expectations," with correlated actors anticipating one other's behavior (e.g., see Williams and McGinnis 1988).

*Civil Rights*

American politics has been intensely concerned over civil rights issues for the last four decades. Our analysis is consistent with this widespread and long-standing concern; it suggests both horizontal and vertical patterns of civil rights issue attention involving the Supreme Court, Congress, the president, and the media. There is reciprocal interdependence of Supreme Court and congressional attention, with both actors unresponsive to presidential or systemic attention. The Court affects presidential attention, but not the reverse. The analysis also shows that the Supreme Court causes shifts in systemic attention to these issues, but not the reverse. Presidential and systemic attention are contemporaneously related, but do not cause one another in a Granger sense. There is evidence from the dynamic simulations, however, that the president strongly affects systemic attention. Congress is unresponsive to systemic or media attention to civil rights issues. This points to a top-down pattern of vertical attention driven primarily by the Supreme Court, and subsequently affected by the president. Table 1 contains the Granger tests for civil rights issues. Table 2 has the associated forecast error variance decompositions. Figure 4 graphs the simulated moving average responses.

Table 1 shows the strong importance of the Supreme Court to civil rights attention for the two other institutions and system. Supreme Court attention

TABLE 1

## Vector Autoregression Exogeneity Tests for Civil Rights Issues

Equation	Coefficient Block	F statistic	p value
Court	← Court	6.66	0.01
	← Congress	5.40	0.03
	President	0.17	0.68
	System	2.44	0.13
Congress	← Court	2.81	0.10
	← Congress	5.92	0.02
	President	0.05	0.82
	System	0.10	0.75
President	← Court	3.24	0.08
	Congress	1.96	0.17
	← President	28.96	0.00
	System	0.25	0.62
System	← Court	3.55	0.07
	Congress	0.25	0.62
	President	0.00	0.98
	← System	5.14	0.03

*Note:* The arrows indicate probable Granger causal relations from the block of coefficients to the equation-dependent variable shown in the left column. Based on a Sims (1980) test, one lag of each variable is included in the VAR. The residuals from all equations are white noise.

TABLE 2

## Forecast Error Variance Decomposition for Civil Rights Issues

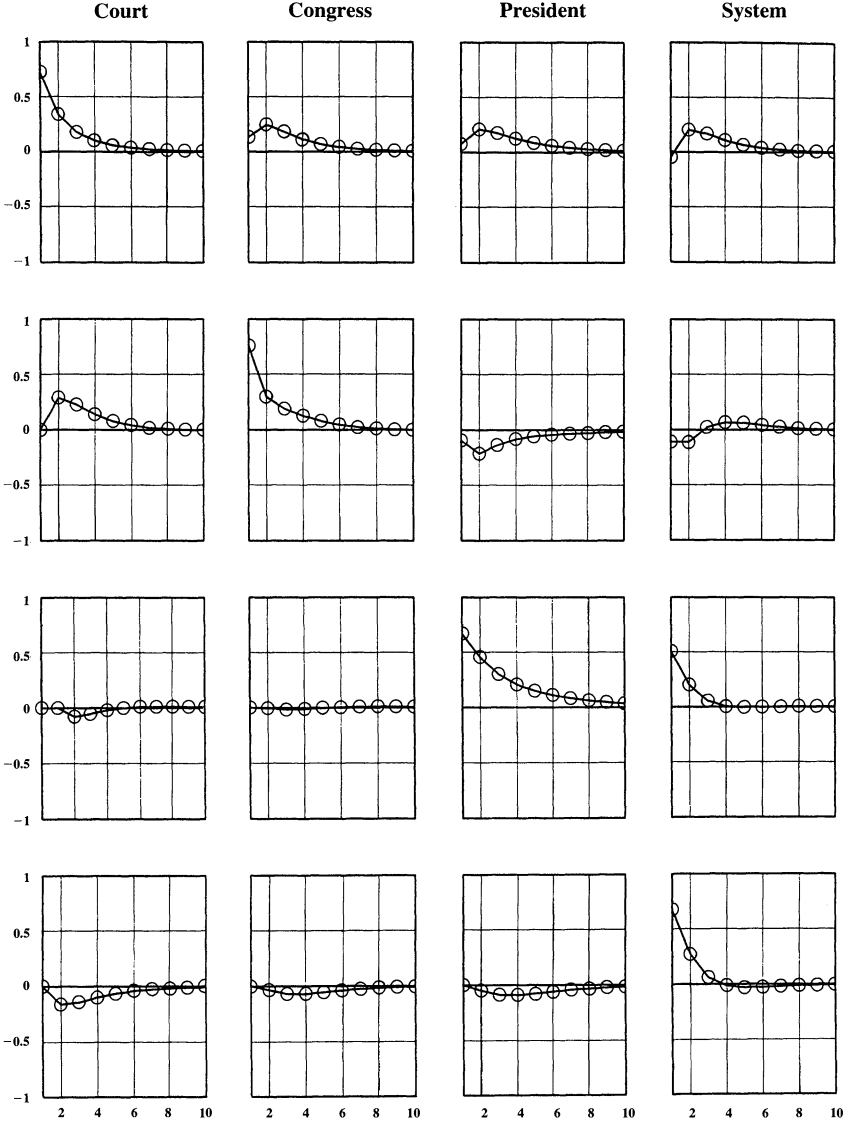
Equation	t	Court	Congress	President	System
Court	1	100.00	0.00	0.00	0.000
	2	85.00	10.84	0.82	3.34
	3	78.35	15.45	1.01	5.18
	4	76.09	16.90	1.01	6.00
	5	75.38	17.28	0.99	6.34
	6	75.15	17.36	1.00	6.49
	7	75.07	17.37	1.01	6.55
	8	75.04	17.36	1.03	6.58
	9	75.02	17.35	1.04	6.59
	10	75.01	17.35	1.05	6.59
Congress	1	3.01	96.99	0.00	0.00
	2	10.56	89.27	0.00	0.16
	3	13.61	85.60	0.03	0.76
	4	14.60	84.05	0.05	1.30
	5	14.92	83.40	0.05	1.63
	6	15.04	83.12	0.05	1.79
	7	15.08	83.00	0.06	1.86
	8	15.10	82.94	0.07	1.90
	9	15.11	82.91	0.07	1.91
	10	15.11	82.89	0.08	1.92
President	1	1.17	1.96	96.86	.000
	2	6.54	7.08	86.08	.298
	3	8.85	7.96	82.12	1.074
	4	9.78	8.05	80.38	1.785
	5	10.15	8.06	79.55	2.251
	6	10.29	8.06	79.13	2.516
	7	10.35	8.08	78.92	2.657
	8	10.37	8.10	78.80	2.729
	9	10.38	8.11	78.74	2.767
	10	10.38	8.12	78.72	2.786
System	1	0.32	1.711	35.27	62.70
	2	4.93	2.791	33.15	59.13
	3	7.80	2.738	32.19	57.27
	4	8.92	3.151	31.63	56.30
	5	9.29	3.502	31.34	55.87
	6	9.42	3.672	31.21	55.71
	7	9.46	3.734	31.15	55.66
	8	9.47	3.752	31.13	55.64
	9	9.48	3.756	31.13	55.64
	10	9.48	3.757	31.13	55.64

*Note:* Each cell entry is the percentage of forecast error (t years ahead) in the corresponding row that is due to innovations in the column variable.



FIGURE 4

### Moving Average Response for Civil Rights Agendas



*Note:* The graphs contain the simulated responses in attention over 10 years by the Supreme Court, Congress, president, and system after a one-standard deviation shock to the actor on the diagonal. All responses are in standard deviation units.

Granger causes attention by the two other institutional actors, as well as shifts in the systemic agenda. The forecast error variance decompositions in the Court column of Table 2 confirm dynamically the effects of the Supreme Court on civil rights attention. Five years after a shock to the other variables, the Court explains substantial proportions of the forecast error variance for Congress, the president, and systemic attention, respectively. The top row of graphs in Figure 6 tracks the dynamics and temporal sequence of these relations. Congress and the president respond to a one-standard deviation shock in Supreme Court attention with relatively similar magnitude and temporal timing. Congressional and presidential attention increase for about two years and decline exponentially after that. The systemic agenda lags the institutional responses, occurring one year after an initial increase in Supreme Court attention. The sequence of these relations suggests a pattern in which the Supreme Court alters attention by elected institutions, which in turn produces greater media attention to civil rights. This pattern also implies that Supreme Court attention may increase the level of conflict, subsequently drawing the president, Congress, and larger system into the fray.

The Granger tests in the first panel of Table 1 show that the Supreme Court's attention is inertial and path dependent, but it also depends on past changes in congressional attention. That is, there is a reciprocally causal relationship between Supreme Court and congressional attention to civil rights. The first two panels of Table 2 confirm these joint dynamics. Five periods after a shock to Supreme Court attention, congressional attention explains about 17.28% of the Court's forecast error variance. Five periods after a shock to Congress, the Supreme Court explains about 14.92% of the congressional forecast error variance. Using Figure 4, we can further track the dynamics of this interrelationship by focusing on the first two graphs in the first and second rows. A one-standard deviation shock to Court attention produces about a 0.25-standard deviation increase in congressional attention spread over the first and second years. In the other direction, a one-standard deviation shock in congressional attention to civil rights is followed by a 0.29-standard deviation increase in Supreme Court attention to these same issues. Supreme Court and congressional attention trail off exponentially in subsequent years toward normal levels. These relationships hold for all possible orderings of the variables.

Substantively, we might ask why Supreme Court attention to civil rights should produce increased congressional attention in subsequent years. One story might be that Congress seeks to institutionalize, add emphasis to, or refine recent Supreme Court rulings. More often, however, we suspect that members of Congress seek to overturn Supreme Court decisions such as occurred with the Civil Rights Restoration Acts of the late 1980s and early 1990s, which followed Supreme Court decisions making civil rights litigation more difficult to pursue. According to this latter interpretation Supreme Court decisions on civil rights are controversial, escalating systemwide conflict, drawing Congress into the fray.

Turning the relation around, we might also ask why later congressional attention should affect subsequent Supreme Court attention. The story might be that congressional activity leads to law, which in turn results in litigation to either challenge or work out details of the law or its implementation. The time lag is consistent with this interpretation, since it takes time for litigation to work its way through the appellate courts. Alternatively, the mutual relationship between Congress and the Court could be evidence of a positive feedback system, and a larger struggle occurring external to these institutions. In either case, over the period from 1954 through 1990 the Supreme Court's civil rights agenda depended systematically on the degree to which Congress attended to these issues in prior years.

Supreme Court attention also produces greater presidential attention to civil rights. Increased presidential attention is natural since presidents execute law and are largely responsible for implementing judicial decisions. As with Congress, presidents may also disagree with the Court, leading to presidential initiatives to question or challenge its decisions. Tables 1 and 2 show, however, that a reciprocal relation does not exist between the president and Supreme Court. Under all possible orderings of the variables, the president did not lead attention to civil rights by either the Court or Congress. Relative to Congress, this is counterintuitive and surprising in light of the Johnson presidency's assumed leadership role on civil rights.

It could be that a different type of analysis that relies on discrete interventions would find more impact for the president on congressional attention to civil rights. The Johnson presidency and consequent legislation had policy impacts that lasted for many years. However, Figure 2 above shows that the Johnson era of presidential activism on civil rights was atypical of other presidencies; the Eisenhower, Nixon, Ford, Carter, Reagan, and Bush administrations were relatively inattentive to civil rights issues, suggesting that most of our study period was dominated by passive presidencies.

While the president did not lead congressional or Supreme Court attention to civil rights, the chief executive *did* affect systemic attention, and with greater magnitude than the Court. The fourth graph of the third row of Figure 4 shows that a one-standard deviation surge in presidential attention produced a large 0.5-standard deviation increase in media attention. If we reverse the ordering of these two variables, we also find that systemic attention affects presidential attention with approximately the same magnitude and temporal dynamic. This is evidence of a simultaneous relationship between the president and media; the contemporaneous correlation matrix also shows an unlagged correlation of about 0.60 between the media and presidential attention. When the president speaks on civil rights issues, the media quickly hear and respond; when the media speaks, the president is equally attentive and responsive. Indeed, the president may even anticipate systemic attention and respond accordingly.<sup>9</sup>

<sup>9</sup>The absence of Granger causality between these two variables, combined with the strong contemporaneous correlation, suggests "rational anticipation" on the part of one or both actors (Williams and McGinnis 1988).

This empirical evidence is consistent with scholarly commentary by Peterson (1981) that elected politicians operate more in a ritualistic than an instrumental mode on civil rights due to the potentially divisive nature of the problem. The argument is that civil rights is an explosive issue that places elected politicians in a "no-win" situation. Activism in any direction is likely to alienate some constituents, suggesting that presidents would operate in a reactive, rather than activist mode. The results reported here that presidents are highly attentive to the Court, anticipative of media coverage, and command systemic, but not legislative attention, are consistent with such a model. Presidents seemingly manipulate symbols on civil rights, but seldom gain the legislative or judicial attention that is necessary to attain positive action on civil rights problems.

It is also important to highlight what the analysis does not show for civil rights. Under any ordering of the variables, the analysis provides no evidence of causal relations running from either the systemic agenda or president to Congress or the Supreme Court. This absence of bottom-up flow from systemic attention to Congress and the Supreme Court, either directly or indirectly through the president, challenges the conventional understanding of how civil rights issues arose in the United States.

### *Civil Liberties Issues*

As with civil rights, some civil liberties issues are quite controversial (e.g., flag burning or restrictions on school prayer), producing an expectation that shifts in attention by the political institutions and the systemic agenda might interact because of conflict expansion. However, we expect that the Supreme Court's specialization in this issue area might lead attention to civil liberties issues. The VAR results confirm these expectations, but also reveal another complex pattern of horizontal and vertical interactions involving the Supreme Court, Congress, and the systemic agenda. Table 3 reports Granger tests for civil liberties issues. Table 4 contains the associated forecast error variance decompositions. Figure 5 reports the simulated moving average responses.

To obtain a true picture of these interactions, we interpret the results reported in Tables 3 and 4 and Figure 5 together, rather than separately. Because they are dynamic, the forecast error variance decompositions and moving average responses provide a more complete image of causal relations than the Granger tests.<sup>10</sup> Beginning with the Supreme Court once again, the Court column of Table 4 shows a pattern of dynamically increasing influence by the Court on both

<sup>10</sup>Granger tests do not take into account effects due to dynamic feedback. Therefore, they can be misleading. However, one problem with forecast error variance decompositions is that the ordering of the variables in a VAR can sometimes make a difference. The ordering reported here takes into account the most systematic relations across all orderings. Again, interested readers may contact the authors to obtain results from different orderings. In any case, the different orderings make no difference to our substantive interpretations reported here.

TABLE 3

## Vector Autoregression Exogeneity Tests for Civil Liberties Issues

Equation	Coefficient Block	F statistic	p value
Court	Court	1.44	0.24
	← Congress	2.98	0.09
	System	1.58	0.22
	President	0.85	0.36
Congress	Court	0.13	0.72
	← Congress	12.61	0.00
	System	1.87	0.18
	President	0.00	0.97
System	Court	0.14	0.71
	Congress	0.39	0.54
	← System	22.98	0.00
	President	0.51	0.48
President	← Court	3.61	0.07
	← Congress	3.98	0.05
	System	0.41	0.53
	← President	8.30	0.01

*Note:* The arrows indicate probable Granger causal relations from the block of coefficients to the equation-dependent variable shown in the left column. Based on a Sims (1980) test, one lag of each variable is included in the VAR. The residuals from all equations are white noise.

Congress and the president; the evidence concerning the systemic agenda's response to the Court is somewhat weaker. The graphs in the first row of Figure 5 bolster this evidence concerning the leadership of the Court. A one-standard deviation shock in Supreme Court attention produces an increase in congressional and systemic attention; presidential attention responds to the Court one period later. The response by Congress is larger and more protracted than that for either the president or system.

The Supreme Court prompts increased attention by the other institutions and on the systemic agenda, but it also subsequently responds to Congress and media attention as well. The first panel of Table 4 shows that a feedback relation exists between the Supreme Court and Congress. Five periods after a shock to the Court, Congress explains about 7.54% of the Court's forecast error variance, while the system explains about 9.28%. The graphs in Figure 5 track out these joint dynamics. The second graph of the first row shows that a one-standard deviation surge in Supreme Court attention produces about a 0.14-standard deviation increase in congressional attention; the first graph of the second row shows that a one-standard deviation surge in congressional attention produces about a 0.17-standard deviation increase in Supreme Court attention. The reciprocal dynamic between the Court and Congress is smaller in magnitude than that for civil rights above, but similar in sequence. As to why this joint dynamic

TABLE 4

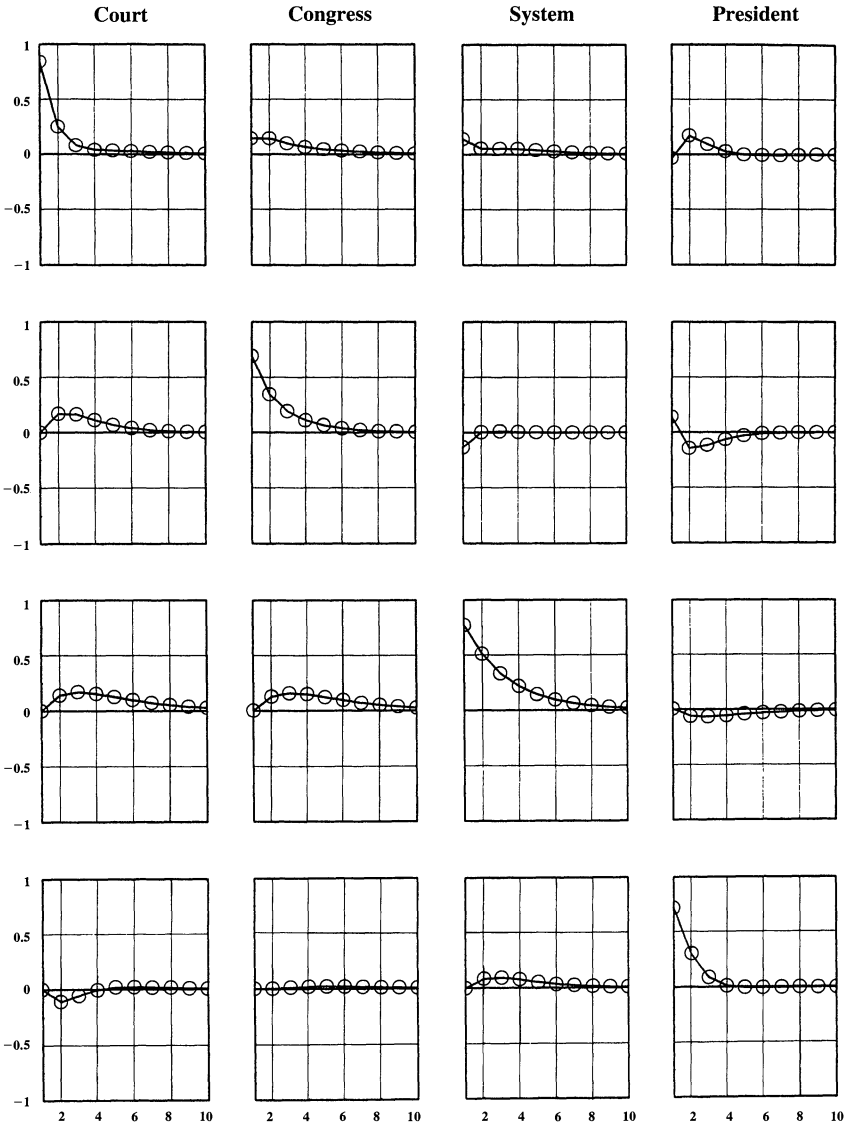
## Forecast Error Variance Decomposition for Civil Liberties Issues

Equation	t	Court	Congress	System	President
Court	1	100.00	0.00	0.00	0.000
	2	92.84	3.38	2.36	1.43
	3	86.83	6.11	5.44	1.62
	4	83.42	7.23	7.80	1.56
	5	81.62	7.54	9.28	1.55
	6	80.68	7.60	10.14	1.58
	7	80.20	7.60	10.60	1.61
	8	79.95	7.59	10.84	1.62
	9	79.83	7.58	10.96	1.63
	10	79.77	7.58	11.02	1.64
Congress	1	4.16	95.84	0.00	0.00
	2	6.29	91.17	2.53	0.00
	3	7.00	87.18	5.80	0.02
	4	7.20	84.32	8.41	0.07
	5	7.27	82.50	10.10	0.13
	6	7.29	81.43	11.10	0.18
	7	7.30	80.83	11.64	0.22
	8	7.30	80.52	11.93	0.25
	9	7.31	80.35	12.08	0.26
	10	7.31	80.27	12.15	0.27
System	1	3.12	2.77	94.11	0.00
	2	2.49	1.95	94.85	0.71
	3	2.46	1.73	94.35	1.46
	4	2.57	1.64	93.89	1.90
	5	2.66	1.60	93.63	2.11
	6	2.71	1.59	93.51	2.19
	7	2.73	1.58	93.46	2.23
	8	2.74	1.58	93.44	2.24
	9	2.75	1.57	93.43	2.25
	10	2.75	1.57	93.42	2.25
President	1	0.25	3.65	0.01	96.10
	2	4.37	6.01	0.53	89.09
	3	5.34	7.73	1.12	85.81
	4	5.38	8.20	1.53	84.89
	5	5.36	8.29	1.78	84.59
	6	5.36	8.30	1.91	84.44
	7	5.36	8.29	1.98	84.36
	8	5.36	8.29	2.02	84.33
	9	5.36	8.29	2.03	84.31
	10	5.36	8.29	2.04	84.30

*Note:* Each cell entry is the percentage of forecast error (t years ahead) in the corresponding row that is due to innovations in the column variable.

FIGURE 5

# Moving Average Response for Civil Liberties Agendas



*Note:* The graphs contain the simulated responses in attention over 10 years by the Supreme Court, Congress, system, and president after a one-standard deviation shock to the actor on the diagonal. All responses are in standard deviation units.

might exist, the rationale is similar to that for civil rights: the two institutions compete for control over policy in this highly conflictual area.

Reciprocally causal relations also exist between the Supreme Court and the systemic agenda. The third graph of the first row of Figure 5 shows that a one-standard deviation shock in Supreme Court attention produces about a 0.14-standard deviation increase in media attention; and the first graph of the third row shows that a one-standard deviation shock in systemic attention to civil liberties issues produces about a 0.17-standard deviation increase in Supreme Court attention. It is easy to explain why increased Supreme Court attention to civil liberties issues might spark increased systemic attention. Many of these decisions are countermajoritarian, arousing the passions of religious groups, patriotic organizations, other groups, and citizens alike. As these actors mobilize, media coverage intensifies, producing increased Supreme Court attention. Perhaps the turmoil over these issues increases the amount of litigation, subsequently resulting in more cases before the Supreme Court. Alternatively, public controversy may cause the Court to open its docket more toward these types of cases. In either instance, the responsiveness of the Court to both Congress and the systemic agenda belies the textbook image of the Supreme Court as an insular institution.

Increased systemic attention also produces increased congressional attention. The second panel of Table 4 shows that five periods after a shock to Congress, the system explains about 10.1% of the congressional forecast error variance. Consistently, the second graph in the third row of Figure 5 reveals that a one-standard deviation shock in systemic attention produces about a 0.16-standard deviation increase in congressional attention to civil liberties issues. The responsiveness of Congress to this external surge in attention is consistent with the idea of Congress as a representative institution. However, the more general image of Congress resulting from this analysis is of congressional attention responsive to both horizontal and bottom-up vertical influences. There is no ordering of the variables showing congressional attention affects systemic attention. This suggests again that the Supreme Court leads issue attention in this area.

The president is the least influential of the three institutions for civil liberties issues. As noted above, the chief executive responds to increased Supreme Court attention. However, under no ordering of the variables does the chief executive significantly affect the attention of the other institutions. The third row of Figure 5 illustrates this lack of presidential influence. A one-standard deviation shock in presidential attention to civil liberties produces no change in congressional attention and a slightly negative response by the Court. The systemic agenda's response to presidential attention is also quite weak, even when the president is placed first in the variable orderings. This lack of presidential influence on civil liberties is consistent with the notion that presidents tend to specialize in other areas, such as foreign policy and economic matters. Due to issue specialization, we would not expect the president to be very influential in this policy area.



*Environmental Issues*

The agendas of Congress, the president, and the media reflect intense interest by these actors in environmental issues over time; the Supreme Court, while less attentive early in the series, became more attentive following passage of the National Environmental Policy Act of 1969. Our analysis of attention to environmental issues suggests, however, a top-down pattern of horizontal and vertical attention driven primarily by Congress. Congress has systematically affected both presidential and systemic attention to environmental issues, but has not, in turn, been systematically affected by these same actors. These results are consistent with the case study evidence developed by Charles O. Jones (1975), who argued that the environment is a peculiarly congressional domain. Again, the temporal patterns also illustrate the horizontal and vertical complexity of issue attentiveness in the U.S. system. Table 5 presents the Granger tests, Table 6 provides the forecast error variance decompositions, and Figure 6 graphs the moving average responses.

The first panel of Table 5 shows that congressional attention to environmental issues is exogenous, and fairly independent of presidential, Supreme Court, and systemic attention. None of these actors Granger cause congressional attention to environmental issues. The first panel of Table 6 confirms the strong exogeneity of congressional attention to the president and Supreme Court. Five periods

TABLE 5

**Vector Autoregression Exogeneity Tests for Environmental Issues**

Equation	Coefficient Block	F statistic	p value
Congress	← Congress	6.80	0.00
	System	0.90	0.42
	President	0.75	0.48
	Court	0.43	0.66
System	← Congress	3.32	0.05
	System	1.23	0.31
	President	1.01	0.38
	Court	0.10	0.90
President	← Congress	3.74	0.04
	← System	5.02	0.01
	President	2.18	0.13
	Court	0.98	0.39
Court	Congress	0.06	0.94
	System	1.27	0.30
	President	1.38	0.27
	Court	0.41	0.66

*Note:* The arrows indicate probable Granger causal relations from the block of coefficients to the equation-dependent variable shown in the left column. Based on a Sims (1980) test, two lags of each variable are included in the VAR. The residuals from all equations are white noise.

TABLE 6

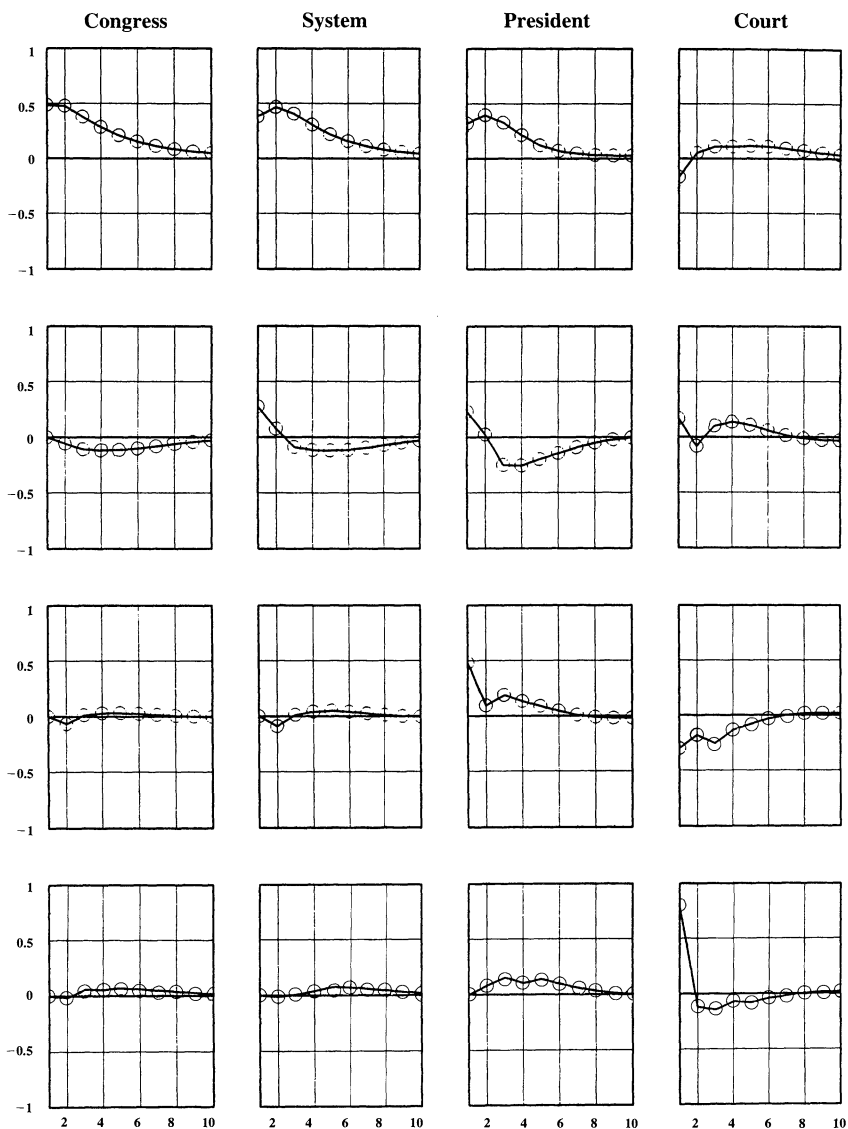
## Forecast Error Variance Decomposition for Environmental Issues

Equation	t	Congress	System	President	Court
Congress	1	100.00	0.00	0.00	0.00
	2	98.29	0.68	0.98	0.05
	3	96.26	2.42	0.76	0.57
	4	94.29	4.01	0.77	0.93
	5	92.37	5.30	0.83	1.49
	6	90.97	6.29	0.86	1.88
	7	90.11	6.90	0.86	2.12
	8	89.66	7.23	0.85	2.25
	9	89.45	7.38	0.85	2.32
	10	89.37	7.44	0.85	2.34
System	1	65.70	34.30	0.00	0.00
	2	80.17	18.01	1.80	0.03
	3	84.42	14.22	1.32	0.03
	4	84.51	13.91	1.34	0.24
	5	83.05	14.47	1.53	0.95
	6	81.63	15.24	1.65	1.49
	7	80.67	15.82	1.67	1.84
	8	80.16	16.15	1.65	2.03
	9	79.94	16.29	1.64	2.12
	10	79.87	16.34	1.64	2.15
President	1	26.54	13.95	59.51	0.00
	2	46.35	9.76	42.73	1.16
	3	46.39	14.90	34.90	3.81
	4	44.34	19.74	31.56	4.36
	5	42.24	22.04	29.81	5.90
	6	41.20	23.26	28.95	6.58
	7	40.84	23.74	28.58	6.84
	8	40.76	23.86	28.47	6.91
	9	40.77	23.86	28.46	6.92
	10	40.79	23.84	28.46	6.91
Court	1	3.65	3.57	11.47	81.30
	2	3.71	4.08	14.61	77.60
	3	4.52	4.70	19.86	70.93
	4	5.39	6.35	20.66	67.60
	5	6.44	7.27	20.53	65.75
	6	7.45	7.50	20.28	64.78
	7	8.18	7.46	20.11	64.26
	8	8.60	7.44	20.03	63.94
	9	8.80	7.47	20.00	63.73
	10	8.89	7.54	19.98	63.60

*Note:* Each cell entry is the percentage of forecast error (t years ahead) in the corresponding row that is due to innovations in the column variable.

FIGURE 6

# Moving Average Response for Environmental Agendas



*Note:* The graphs contain the simulated responses in attention over 10 years by the Congress, president, and Supreme Court after a one-standard deviation shock to the actor on the diagonal. All responses are in standard deviation units.

after an initial shock to congressional attention, the Congress still explains about 92% of its own forecast error variance. The president and Court explain only minuscule proportions, while media attention explains barely 5% after five periods. The first column of Figure 6 illustrates graphically the absence of causal dynamics between these agendas and congressional attention. One-standard deviation shocks to presidential and Supreme Court attention respectively produce no congressional responses of any magnitude; a similar shock to systemic attention produces only a weak negative response by Congress. It seems reasonable to conclude from the statistical evidence that Congress operates in an insular mode with respect to other institutions and the larger system.

In the other direction, the analysis reveals that the presidential and media agendas respond rapidly and strongly to changing congressional attention. The second and third panels of Table 5 demonstrate that congressional attention Granger causes presidential and systemic attention to environmental issues. The Congress column of Table 6 bolsters this result, since congressional attention explains very large proportions of the respective presidential and systemic forecast error variances five periods after a shock to each. The temporal dynamics of these responses to Congress can be tracked further by looking at the first row of graphs in Figure 6. A one-standard deviation shock in congressional attention produces about a 0.47-standard deviation increase in systemic attention spread over multiple years and a corresponding 0.40-standard deviation increase in presidential attention with a similar sequence and pattern. These responses to Congress are immediate, very large, and protracted, suggesting the extreme importance of Congress to systemic and presidential attention to environmental issues over time.

The preceding analysis depicts the relationship of Congress to the rest of the system as entrepreneurial. Congressional attention is unresponsive to systemic, presidential, and judicial attention, yet strongly affects the first two of these actors. One explanation for this entrepreneurial relationship might lie in the increasing professionalization of Congress with respect to environmental issues, as well as the institutionalization of environmental interests in the committee and subcommittee structure of Congress. C. Jones (1975) describes this process in great detail, as well as the emergence of individual congressional leaders such as Senator Edmund Muskie (D-ME) and others who spurred public interest in the environment (e.g., through the organization of Earth Day in 1970). Jones's case study evidence also suggests that Richard Nixon, president when much environmental legislation was passed, did not become attentive to environmental issues until after it became known that his major challenger in the 1972 presidential election would be Senator Muskie, an environmental leader in Congress. More recently, Kraft and Vig (1990; see also Rosenbaum 1985; Wood 1988; Harris and Milkis 1989) detail the continuing congressional dominance in environmental policy after the Reagan administration sought to diminish enforcement. In the early 1980s, congressional hearings focused public and media attention, ultimately forced the resignation of an EPA administrator, produced increased

environmental funding, and resulted in significant new environmental legislation during an administration openly hostile to the environment.

While the vertical pattern between congressional and systemic attention is top-down, presidential attention may (or may not) be permeable to bottom-up attention. The Granger tests in the third panel of Table 5 report that both congressional and systemic attention cause presidential attention. The third panel of Table 6 also shows that systemic attention explains substantial proportions of the forecast error variance for the president five periods after an initial shock. However, the moving average response reported in the third graph of the second row of Figure 6 suggests some ambiguity in this result. A one-standard deviation positive shock in systemic attention produces an initial increase in presidential attention of about 0.23 standard deviations, followed two periods later by a consistently negative pattern of simulated innovations. Thus, the extent to which the president responds to systemic attention on environmental issues remains uncertain.

### Conclusions

The macrodynamics of issue attention are an important aspect of agenda setting in American politics. Methodologically, our analysis shows how to study the macrodynamics of issue attention shaped by the vertical and horizontal patterns of attention in the American system. Future research should employ these or similar methods to examine a broader range of issues. From the standpoint of inductive theory building, the number of issues examined here is too small to allow definitive conclusions about which, if any, of the patterns is most dominant. Additionally, the particular issues examined were intentionally selected to be salient to all three major institutions of government. This skews generalizations toward more horizontal interactions than if we had selected the issues randomly and in particular may emphasize the importance of the Supreme Court as an agenda setter in the American system of separated powers. In future theory building, researchers should consider such intermediary factors as issue salience and complexity, institutional specialization, and the jointly coupled nature of the U.S. policymaking process. While our findings are limited for these reasons, the three analyses of this study nevertheless are suggestive of likely patterns in the evolving theory of issue attention and agenda setting.

Given these caveats, we found substantial complexity in how issue attention is structured in the United States; reductionist models positing *purely* bottom-up, top-down, or horizontal patterns of issue attention are likely to be misleading. Evidence from our three issue areas failed to support a *purely* bottom-up model, as implied by the early work of Cobb and Elder (1972), Anderson (1975), C. Jones (1977), and others. In the areas of civil rights and the environment, we saw some evidence that presidential attention was responsive to systemic attention, but no evidence that either the Supreme Court or Congress were permeable to such influences. On civil liberties issues, there was evidence that both the Supreme Court and Congress responded to systemic attention, but no evidence

that the president responded. However, these upward responses by the Supreme Court and Congress to the system were part of a larger set of reciprocal relations between the two institutions and system.

In all three issue areas, we found top-down attention movements from some particular institution to the system. In the areas of civil rights and civil liberties, movements were from the Supreme Court to the system; for environmental issues, movement was from Congress to the system. However, in the first two issue areas, the evidence for a *purely* top-down model is also wanting. In both civil rights and civil liberties, the Supreme Court and Congress are involved in a set of reciprocally causal relations in which their respective concerns and priorities drive one another through time. We also found evidence of horizontal interactions among institutions, but the preceding interpretations preclude a *purely* horizontal pattern of issue attention. We conclude from this evidence that the macrodynamics of issue attention are best described as a *hybrid* of both vertical and horizontal interactions.

Our results highlight the importance of institutions to agenda setting for particular issues. Consistent with past research, we find that Congress is very important in determining the amount and distribution of attention to environmental issues. The Supreme Court appears extremely important in the areas of civil rights and civil liberties policy. Interestingly, past theory and research have neglected the Supreme Court as an agenda setter for the system as a whole; this is a serious shortcoming of the literature. In the area of civil liberties, Supreme Court influence may result from issue specialization, but for civil rights the president and Congress have also been important participants. In either case, the Court is naturally a major player for issues involving substantive rights and constitutional interpretations. If issue specialization determines the relative importance of institutions in the agenda-setting process, then the Court may also be influential for other issues. Future work should concentrate on fleshing out those issues that are driven by Supreme Court attention, or other types of issue specialization by the president and Congress.

More generally, our results suggest that future models of agenda setting should adopt a holistic perspective to consider relations among multiple institutions and the system as a whole. Past theory and research have favored the study of agendas for single institutions more or less in isolation. Yet, American political institutions by design are inextricably linked in a continuing dialogue. Congress and the president are connected through political parties, executive platforms, and the dependencies created by separated powers. The president and the Court are connected through the Justice Department, solicitor general, and the selection of justices. Congress and the Court are connected through judicial review and the Senate's approval of judicial appointments. Consistent with these linkages, we find substantial evidence of attention interdependence among the three national institutions. Future work should consider the linkages between institutions, as well as adopt a more systemwide perspective on the nature of the U.S. agenda-setting processes.

## Appendix

### *Keywords Used in Data Searches*

<i>Issue</i>	<i>CIS Index</i>	<i>Public Papers</i>	<i>Judicial Database</i>	<i>Reader's Guide</i>
Civil Rights	Civil Rights; Discrimination; Desegregation; Segregation; Voting Rights; Equal Opportunity; Affirmative Action; Lynching (early years)	Civil Rights; Desegregation; Segregation; Integration; Voting Rights; Discrimination; Equal Employment Opportunity; Affirmative Action	Desegregation, schools (221); Employment Discrimination (222); Sex Discrimination (284)	Public Schools, desegregation; Public Schools, integration; Consolidation for Integration; Busing for integration; Busing; Magnet Schools; Blacks (Negroes), Segregation (exc. School); Blacks (Negroes), Equal rights; Blacks (Negroes), employment; Women, Equal Rights; Women, Equal Pay; Women, Maternity Leave; Women, Employment; Mothers, Employment; Civil Rights, general; Employment Discrimination, General
Civil Liberties	Censorship; Obscenity; Pornography; Libel; Slander; Free Speech; Freedom of the Press; Church and State; Freedom of Religion	Censorship; Pornography; Obscenity; Church and State; Freedom of Religion	Libel and Defamation (415/416); Church-State Relations (455/461/462); Obscenity (471/472)	Freedom of the Press; Libel and Slander; Church and State; Prayer in Schools; Public Schools and Religion; Taxation, Exemption; Censorship; Immoral Literature; Obscenity; Obscenity, trials
Environment	Pollution; environment, environmental; conservation; toxic waste; clean air; clean water	Pollution; environment; conservation; clean air; clean water	Natural Resources— environmental protection (638); Natural Resources (933); Pollution, Air or Water (934)	Pollution (air, water, oil, toxic, and all subheadings); Environment (all subheadings); Conservation

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