

# **Rational Behavior or the Norm of Cooperation?: Filibustering Among Retiring Senators<sup>1</sup>**

L. Marvin Overby  
Department of Political Science  
303 Professional Building  
University of Missouri  
Columbia, MO 65211  
Voice: 573.882.2130  
Fax: 573.884.5131  
e-mail: [overby@missouri.edu](mailto:overby@missouri.edu)

and

Lauren C. Bell  
Department of Political Science  
Randolph-Macon College  
Ashland, Virginia 23005  
Voice: 804.448.0523  
e-mail: [lbell@rmc.edu](mailto:lbell@rmc.edu)

**[Published in *The Journal of Politics*, August 2004, 66: 906-924.]**

---

<sup>1</sup> We wish to acknowledge the assistance and counsel of many individuals, without whom this project would not have been possible. We are particularly grateful for the support of Richard Beth at the Congressional Research Service, and the very wise comments of Professors David Rohde and Scott Ainsworth on an earlier draft of this project, which was presented at the 2002 annual meeting of the American Political Science Association in Boston, Massachusetts. Finally, we are indebted to the several anonymous reviewers whose comments contributed immeasurably to the quality of this research. We alone are responsible for any remaining errors of fact or interpretation.

## **Abstract**

This paper contributes to the growing empirical literature on filibusters by examining factors that are associated with individual-level filibustering behavior. We focus particularly on the behavior of senators in the latter part of their careers, using impending retirement as analytical leverage to determine whether decisions to engage or not in dilatory parliamentary practices are driven more by narrowly drawn considerations of instrumental utility or by compliance with institutional norms of deference and cooperation. Using data from 1975 to 1993 and employing multivariate models that allow us to control for other relevant factors, we find only limited support for a narrowly rational model of Senate “followership.” In the course of our enquiry, we clarify the notion of legislative norms, integrate our study with recent interdisciplinary scholarship on the evolution of cooperative behavior, and consider how leadership can be exercised in environments largely bereft of formal leadership resources.

In recent years, filibustering activity in the U. S. Senate has received considerable attention from various quarters. Textbooks note the increasing frequency of the practice and the increasing triviality of matters subject to filibusters (Davidson and Oleszek 2002, 256; Sinclair 2001). Senators themselves now appear to expect filibusters on controversial bills and routinely seek to preempt such dilatory tactics by submitting petitions for cloture in advance of the menace (Stewart 2001, 364). Media coverage of Senate action often includes discussion of such efforts to forestall or break filibusters, either threatened or actual.<sup>2</sup> Congressional staffers have tried to summarize what we know — and don't know — about filibusters (Beth 1994; 1995). And scholars have attempted to account for changes in the nature and extent of the practice over time (see, especially, Binder and Smith 1997; Binder, Lawrence, and Smith 2002). Unfortunately, almost all of this scrutiny has been focused on the aggregate level, attempting either to make sense of the development of the filibuster (and, concomitantly, efforts to limit its use), to explain variance in its rate of deployment, or to assess its impact on policy. Relatively little attention has been paid to the individual-level question of what prompts any given senator to filibuster in some cases, but not in others. Since filibustering decisions are ultimately individual ones and since the ability of each individual senator to obstruct the chamber's business through "extended debate" lies at the heart of what makes leadership in the chamber so problematic, this is a significant issue for anyone who wishes to understand how the Senate operates.

In this paper, we take a first step toward addressing this issue by examining some of the individual determinants of filibuster behavior during the 1975-1993 time period. We are especially interested in the behavior of one particular group of senators --- those on the verge of

---

<sup>2</sup>See, *e.g.*, Dewar and Goldstein (2002) on parliamentary maneuverings related to recent attempts to expand Medicare to include prescription drug coverage.

retirement. Focusing on senators facing retirement will give us unique analytical leverage to examine whether decisions to engage or not in dilatory parliamentary activities are influenced more by considerations of instrumental utility or by commitment to the chamber's norms of cooperation and deference. When the shackles of impending considerations are removed and senators are released from concerns about future retaliations for current actions, do they behave differently? This is a question that has significant implications reaching far beyond our understanding of the dynamics of filibustering to speak, more generally, to how we conceive of political leadership in the Senate. In the sparse environment of the Senate, where individual latitude is great and formal leadership resources severely constrained, leaders' ability to utilize the scheduling prerogative to capitalize on their colleagues' instrumental desires concerning the future has been posited as one of the few compelling accounts of how leadership may be exercised effectively.

Our enquiry will require us to think critically about exactly what a norm is and to be more explicit about exactly what differentiates a norm --- which may well have roots in rational considerations --- from more instrumental determinants of human behavior. In turn, this will lead us to integrate our study into recent inter-disciplinary scholarship on the development of cooperative behavior.

Our initial finding that retiring senators are only minimally more prone to filibuster than their colleagues --- and then only under certain model specifications --- indicates that leaders' scheduling prerogatives are probably only of marginal importance to the leadership enterprise, that considerations of personal utility are not necessarily dispositive even when the shadow of the future is foreshortened, and that legislative behavior is constrained by internalized norms even when the rational reasons for abiding by these norms has waned.

## Time Horizons, Filibusters, and Rational Considerations

As Binder, Lawrence, and Smith (2002, 419) note, “[t]ime pressures, however created, seem intricately linked to the strategic choice to filibuster.” Citing Oppenheimer’s general observations (1985) about the importance of legislative time, Binder and colleagues observe that

[w]hen the Senate schedule provides ample time to consider legislation on the Senate floor, senators calculating whether to launch a filibuster have little leverage on their colleagues. There are simply too few incentives for other senators to concede to an obstructive senator. All else equal, we should see few filibusters when legislative time is ample. As time grows scarce, senators, in particular Senate leaders, would have an incentive to yield to filibustering senators, so as to proceed to the rest of the floor agenda. Under such conditions, filibustering should increase, as it becomes a more effective strategy for securing one’s policy or political demands (p. 410).

Employing a Poisson regression model and using a time series of data from the eight decades after the adoption of Rule XXII in 1917 (when cloture first became possible in the Senate), Binder and her colleagues (2002, 415) find empirical support for this proposition, showing that filibusters were significantly more likely to be launched in the last session of a Congress than in the first.<sup>3</sup>

An analogy may be drawn here to the individual level. While the Senate faces the institutional constraint of the end of a biennial Congress (after which, of course, all pending legislation dies, at least until it might be resurrected when the subsequent Congress convenes), individual senators face other, personal time horizons that might affect their private calculations regarding the costs and benefits of engaging in filibusters. Perhaps foremost among these is retirement. While every six years senators endure the uncertain prospect of facing the voters, a large majority of incumbent senators who seek re-election are successful, in some years

---

<sup>3</sup>On the other hand, these authors find no evidence that, *ceteris paribus*, filibusters were more common during the 1917-1935 period, when an automatic adjournment date of March 4<sup>th</sup> in odd-numbered years should have increased end-of-Congress time pressures.

outstripping even the storied return rates of House members.<sup>4</sup> Retirement is considerably more certain. Unlike their colleagues who will either certainly or very probably be returning to the chamber in the next Congress, retiring senators face a decidedly different calculation when deciding whether or not to engage in a filibuster. Rather than being infinite, or indefinite, their time horizons shorten, approaching the immediate.

In theory, at least, this should make filibustering more attractive, since a shortening time horizon should decrease the perceived costs involved. While, to the best of our knowledge, no one has yet explored this in much detail, Binder and Smith (1997) do touch on it, at least obliquely. In a section of their book titled “Why Are There Not More (Trivial) Filibusters?,” they speculate that an individual senator’s decision whether or not to filibuster “likely stems from self interest” (p. 111). As they put it, “[f]or individual senators, opportunity costs, the loss of political capital, fear of retribution, and reputational effects may counterbalance the incentives to filibuster.” While retirement should not, *ipso facto*, affect opportunity costs, it should influence the others. Concerns about political capital, fear of political reprisals, and consideration of one’s reputation in the chamber should all diminish as retirement grows nearer. After all, once a senator has left the chamber, he probably has far less reason to fret about the future utility of his prestige on the Hill, fewer opportunities to use his accumulated political capital, and greatly diminished worries regarding any sort of retaliation.<sup>5</sup> The point here about

---

<sup>4</sup>The average rate of victory for senators seeking re-election during the 50-year period 1950-2000 was over 80 percent (see Davidson and Oleszek 2002, 62); in 1960, 1982, and 1992, Senate re-election rates exceeded those of incumbent House members.

<sup>5</sup>That should certainly be true of those senators who retire fully from politics when they leave the Senate and is likely true — to a somewhat lesser degree — even for those senators who remain active in politics (*e.g.*, as lobbyists, executive-branch appointees, or candidates for other elective office) after they depart the Senate.

individual retirements is very similar to the observation that Binder, Lawrence, and Smith (2002, 419) make at the aggregate level about institutional adjournment dates:

[t]he incentive to filibuster when the last day is known is consistent with the differing game theoretic results for finite-horizon and infinite-horizon versions of repeated games.... Although it is possible to sustain cooperation in repeated games with infinite horizons, once the horizon is fixed, the incentives for defecting on the last play of the game increase.

Krehbiel (1986) has explored and explicated some of the logic of such a “repeated game” perspective on the Senate. Citing Axelrod’s pioneering works (1981, 1984), Krehbiel argues that leadership is possible in an increasingly individualistic Senate because party leaders use their scheduling prerogatives to capitalize on the iterative nature of the legislative process.<sup>6</sup> While any individual senator has the right to object to any bill and to mire the chamber down until his individual concerns are completely cared for, every senator also has legislation somewhere in the pipeline that he prefers to pass. Modeling the process as an iterated prisoner’s dilemma game, Krehbiel shows that most senators can be made to acquiesce to unanimous consent agreements (UCAs<sup>7</sup>) that they would not otherwise favor for fear that if they obstruct the progress of legislation they oppose, they open themselves to subsequent retaliation from colleagues who

---

<sup>6</sup>This perspective is broadly consistent with recent work on the historical development of the Senate that has stressed the importance of agenda control gained by Senate leaders in the early decades of the 20<sup>th</sup> century (see Gamm and Smith 2002).

<sup>7</sup>Unanimous consent agreements function much like special orders in the House of Representatives, superseding the standing rules of the Senate and establishing the guidelines under which a bill will be considered on the floor. UCAs outline the rules for debate, control of the allotted time, the sequence of bills and amendments to be taken up, germaneness restrictions (if any), and time limits for consideration of bills and amendments. Unlike rules in the House, however, UCAs are negotiated informally by Senate leaders with all senators who have any significant interest in the bill at hand. This is necessary because, as the name suggests, any individual senator can object to a unanimous consent agreement and impede the progress of legislation on the floor, perhaps up to the point of initiating a filibuster.

oppose their bills. In game-theoretic terms, despite short-term incentives to “defect” today (and seek to obstruct any bill they dislike from coming to a vote), senators agree to “cooperate” because they fear “tit-for-tat” retaliation on bills they care about tomorrow.<sup>8</sup>

While Krehbiel’s model offers a solution to the “theoretical puzzle” (Stewart 2001) of why senators often forgo the opportunity to block bills they oppose, and while it provides a rare and compelling account of how leadership can be exercised in an environment virtually bereft of institutional leadership resources, it is offered with very little in the way of empirical support. Krehbiel offers only two case studies in evidence<sup>9</sup> and notes that a “direct and large N test of the theory” would be difficult, largely because negotiation of UCAs cannot be observed directly.

### **Norms, Filibusters, and Internalized Behavior**

An alternative to the individually-based, instrumentally-oriented, utility-maximizing perspective outlined above posits that it is informal, even inchoate, norms of behavior that account for senators’ willingness to forego dilatory action on measures they oppose. Froman (1967, 118) describes the “informal pressures” that lead senators to abide by the chamber’s “loose formal rules.” Similarly, in a history of UCAs, Keith (1977, 151) argues that they must be considered within the context of “the [Senate’s] longstanding practice of mutual respect and

---

<sup>8</sup>In his recent autobiography, Senator Orrin Hatch makes the same point from his perspective as a participant in the legislative trenches. “[M]ost members have learned to use the tactic [of filibustering] sparingly.... It is well understood that what you do to another member’s legislative priority can be done to you” (Hatch 2002).

<sup>9</sup>Both of these cases come from the fall of 1983 and involved Majority Leader Howard Baker (R-TN). One concerns the sequencing of votes on S. 1529 (which dealt with allotment issues in the federal dairy and tobacco programs) and subsequent agricultural commodity price targets, which was used to leverage the cooperation of senators from dairy and tobacco producing states. The other involved the sequencing of votes on a bill to make the Rev. Martin Luther King’s birthday a national holiday and a subsequent vote on the Dairy and Tobacco Act, which was used to gain the cooperation of Senator Jesse Helms (R-NC).

consideration." And Baker (1995) contends that the conventional wisdom regarding the ardently individualistic behavior of senators has been exaggerated, noting that even in recent years the norms of collegiality, deference, and reciprocity are important in the Senate "club."<sup>10</sup> As one senator put it, "[t]here is a great pressure to conform in the Senate. It's like living in a small town" (quoted in Matthews 1973, 92). This view holds that senators' behavior is not simply determined by instrumental calculations of individual personal advantages or costs, but rather is mediated by experience in the institution and concern for its smooth operation, and embedded in a history of interaction with colleagues.

It has become commonplace to consider these two perspectives as offering competing rationales on filibustering. After noting that a senator's individual decision regarding a filibuster "likely stems from self interest" (p. 111), Binder and Smith (1997, 113) argue that "[a]n alternative explanation is that adherence to Senate norms, rather than calculated self-interest, accounts for the absence of truly ubiquitous filibustering." Similarly, Stewart (2001, 357) contrasts the view of "[t]raditional scholars and observers of Congress [who] have attributed the lack of objection to a 'norm' of consensus" to the perspective of "[m]odern students of congress [who] tend to explain the observed lack of objection ... through the lens of individual utility maximization."

Unfortunately, while the political science literature is rich with descriptions of legislative norms,<sup>11</sup> the term remains a slippery one, lacking clarity and specificity of usage. As Grafstein

---

<sup>10</sup> Speaking specifically to the reciprocity norm, former Senator Fred Harris agrees: "The reciprocity norm has been weakened in the Senate. But it is not dead. Senators can still go too far with obstructionism, and those who do lose respect" (Harris 1993, 119-120).

<sup>11</sup>For a classic account of institutional norms in the pre-reform era Senate, see Matthews (1973); for an update on norms in the modern era see Baker (1999).

(1999, 138) has pointedly noticed: “it is by no means clear what norms are.... In regression analysis, after all, a norm would be called the residual.” Most political science treatments of norms offer only the vaguest of definitions. Asher (1973, 500), for instance, defines a norm merely as “a rule or standard of conduct appropriate to a person in a specified situation within a group.” Similarly, Baker (1999, 54) cites a definition from the *Dictionary of the Social Sciences* (Gould and Kolb 1964): “a standard shared by the members of a social group to which the members are expected to conform, and conformity to which is enforced by positive and negative sanctions.”

The problem with such elastic definitions is that they can be invoked to explain virtually any pattern of behavior (Barry 1970). What is more, such definitions make it difficult to draw analytical distinctions between behavior that is motivated by accession to norms and behavior that is driven purely by self interest. Indeed, in his work on the Senate, Krehbiel (1986, 562) argues that there is no real distinction to be made. “[N]orms,” he says, “are not merely collective and regular standards of conduct; more specifically, they are products of individual and variable strategic decisions. Congressmen have reasons for choosing to conform to norms and neither more nor less selfish reasons for choosing to deviate.”<sup>12</sup>

---

<sup>12</sup>Similar arguments have been made in the sociology and economics literatures. See, for instance, Granovetter (1985) who argues for an “embedded” understanding of rationality: “What looks to the analyst like nonrational behavior may be quite sensible when situational constraints, especially those of embeddedness, are fully appreciated.... That such behavior is rational or instrumental is more readily seen, moreover, if we note that it aims not only at economic goals but also at sociability, approval, status, and power. [But e]conomists rarely see such goals as rational....” In economics, see especially works by Kuran (1995, 1998) that distinguish among “intrinsic utility” (which refers to direct, instrumental outcomes), “reputational utility” (which refers to how one’s actions are regarded by others), and “expressive utility” (which refers to satisfaction received from following one’s personal preferences without regard to outcomes).

The conflation of these concepts in the political science literature is unfortunate and misleading. Scholars in the law and economics tradition have long distinguished between the two, noting that while norms may have their roots in appraisals of individual instrumentality, they are more than simply the aggregate manifestations of personal utility. In particular, it is improper to speak of a real norm until patterns of behavior have become internalized, so that they survive to influence conduct even when considerations of individual utility are no longer operative. Cooter (1996), for instance, puts the point bluntly: “a social norm is ineffective in a community and does not exist unless people internalize it.” In a recent articulation of this point in the political science literature, Chong (2000) contrasts dispositions (which are individually internalized through socialization processes) with incentives (which are rooted in rational calculations of utility). The classic example from economics involves tipping for restaurant service. Americans have rational reasons for tipping the wait staff in local restaurants they plan on re-visiting; a good tip today may lead to good service tomorrow. However, for most Americans this behavior has become internalized to the extent that they routinely tip waiters in restaurants they have no intention of re-visiting even though there is no rational, instrumental reason for doing so (see Azar, forthcoming, for an excellent overview of the economic literature on tipping).<sup>13</sup>

This distinction is important for the current research since the different perspectives imply that we should have different expectations of senators’ behavior depending upon whether we are more favorably predisposed toward a narrow, instrumental view of individual rationality or a broader, more inclusive perspective that may well be grounded in rational considerations but that operates via personally internalized institutional norms. As Chong (2000, 63) has noticed, in

---

<sup>13</sup> Grafstein (1999, 140) has humorously noted that even “most rational choice theorists tip at restaurants.”

reality it is often difficult to distinguish between dispositions and incentives. “[I]f these dispositions are formed originally to adapt to the environment . . . , then they contain a built-in instrumental rationality, and the habitual response is indistinguishable from the consciously calculated choice, so long as the environment remains unchanged.” At the end of a Senate career, however, the environment changes; expectations of on-going professional relationships collapse and concerns about future cooperation diminish. To use Chong’s terminology, this “end game” provides the analytical leverage necessary to examine the relative importance of dispositions versus incentives, by capitalizing on the changes in individual senators’ political environments brought on by impending retirement. If, on the one hand and as Krehbiel suggests, senators’ individual filibustering decisions are rooted in narrowly based, individual assessments of rationality, we would expect to see filibustering activity increase as retirement looms. When the last play of an individual senator’s career appears over the time horizon, the logic outlined above suggests that the shadow of the future shortens, a senator should employ much higher discount parameters for possible future gains, and incentives to “defect” increase significantly, which should lead such individuals to exercise their parliamentary rights more fully, seeking to delay, alter, or kill non-preferred legislation.

On the other hand, if senatorial behavior is fundamentally embedded in internalized norms of cooperation and consent, we would not necessarily expect to see more dilatorious behavior from retiring senators. In fact, there are reasons to suspect that we might see *less* confrontational behavior. Since internalization does not happen immediately, but takes time to develop,<sup>14</sup> more senior senators are more likely to have thoroughly internalized Senate norms

---

<sup>14</sup>McAdams (1997, 380) argues that rational concern for the esteem of colleagues comes first to produce the norm and “internalization operates as a later reinforcing mechanism.”

such as cooperation and, therefore, be less likely to engage in obstreperous parliamentary tactics. It is worth observing in this regard that a common finding in the literature of management science is that older workers are more loyal to their employers and the corporate ethos of their place of employment than are younger workers (see, *e.g.*, Hogarth and Barth 1991; McNaught and Barth 1992; American Association of Retired Persons and Society of Human Resource Managers 1993; Barth, McNaught, and Rizzi 1993; American Association of Retired Persons 1995; Hassell and Perrewé 1995).<sup>15</sup>

As noted above, the highly personal nature of the Senate and the concomitant fact that much business is transacted amongst senators in private makes a precise test of Krehbiel's argument regarding objections to UCAs virtually unachievable. It is possible, however, to gain some greater purchase on Krehbiel's conclusions by examining filibuster behavior. Since filibustering is the logical conclusion of objecting to a UCA, the "end game" logic should be the same; since filibustering is an activity undertaken in public on the Senate floor, it is observable and amenable to empirical analysis. Observing the filibustering behavior of retiring senators, then, should allow us not only to examine some of the individual-level factors that motivate this parliamentary tactic, but also give us additional insight into the dynamics of leadership (and "followership") in the Senate.

---

<sup>15</sup>While retiring senators are not necessarily older or more experienced, in practice they usually are. For instance, of the 58 senators who retired between 1976 and 1992, the average length of service in the Senate was 15.6 years. That average goes up to over 16 years if we exclude the five senators who were appointed to fill unexpired terms, who served less than a full six-year term, or who did not seek election to a full term (*i.e.*, Norris Cotton [R-NH], Muriel Humphrey [D-MN], Kaneaster Hodges [D-SC], Nicholas Brady [R-NJ], and Jocelyn Burdick [D-ND]). This is considerably greater than the average tenure in the Senate during this time period, which was 8.67 years (Ornstein, Mann, and Malbin, 1998, 21).

In the sections that follow, we first outline the data we will use to examine these competing perspectives, then present our findings concerning the filibustering behavior of senators between 1975 and 1993. Finally we discuss the implications these findings hold for our understanding of both parliamentary procedure and leadership in the Senate, as well as for our broader understanding of cooperative human behavior.

## **Data and Methods**

To examine the relative filibustering propensity of retiring senators, we began by compiling a list of all senators who served in the U.S. Senate during the period under investigation, 1975-1993. We limit our analysis to this period for two reasons. First, the last major change in Senate rules regarding filibusters was made in 1975,<sup>16</sup> after which several studies have documented a dramatic increase in filibusters (see Binder and Smith 1997; Monroe 2001; Binder, Lawrence, and Smith 2002). And, second, a definitive list of identifiable filibusters exists only through 1993 (Beth 1994; Binder and Smith 1997).<sup>17</sup>

Using the *Biographical Directory of the United States Congress, 1774-Present*,<sup>18</sup> we gathered data on the 227 senators who served in the Senate during this period, in particular

---

<sup>16</sup> In 1975, the number of senators needed to invoke cloture was reduced from two-thirds of senators present and voting to three-fifths of the entire membership.

<sup>17</sup> We should note that while filibusters are easy to define, they are not so easy to identify. Burdette (1965) points out that

insurmountable difficulties confront an attempt to compile a complete and unchallengeable list of instances in which the Senate of the United States has been subjected to the tactics of delay. With motives hidden in the give and take of parliamentary battle, who can say whether a prolonged speech is a concealed design for obstruction or a sincere effort to impart information, whether garrulousness is more cunning than it seems? Undoubtedly, there will be filibusters which will forever go unrecognized (p. vii).

Congressional Research Service (CRS) legislative politics specialist Richard S. Beth adds that “the first thing we don’t know about filibusters is how many there are” (Beth 1995, 8).

identifying the 58 senators who retired voluntarily from the chamber.<sup>19</sup> Examining all 58 retirees from this period has both advantages and disadvantages. The principal advantage is that it increases the number of cases for analysis. The principal disadvantage is that it complicates the comparison of career filibuster averages with end-of-career filibuster behavior. Many of the 227 senators during this period had served for years (even decades) before the beginning of our time-series. For those who retired at or near the beginning of the series, our computations of career filibuster behavior and end-of-tenure filibuster behavior are either identical or very similar. For this reason, we supplement our analysis of all 58 retirees by also examining the behavior of the sixteen senators who retired after completing their entire Senate service between 1975 and 1993.<sup>20</sup>

We collected data on filibusters during this period using various issues of *Congressional Quarterly Weekly Reports*. For each filibuster identified by Beth (1994), we attempted to locate a specific mention in *CQ Weekly Reports*. In a large majority of cases (149 of 173), we could clearly identify a leader or set of leaders with this source, although in 24 cases no senator/s could be identified as the leader/s. Through subsequent examination of various issues of *CQ Almanac* and various Congressional Research Service reports, we were able to identify the leaders of five additional filibusters. Thus, of the 173 filibusters identified by Beth (1994), we are able to

---

<sup>18</sup> This source is available at [http://www.senate.gov/learning/bioguide\\_intro.html](http://www.senate.gov/learning/bioguide_intro.html).

<sup>19</sup> We include as retirees those who voluntarily departed to pursue other office, but exclude those who were defeated in either primary or general elections, or who were expelled from the Senate.

<sup>20</sup> In chronological order of retirement, these are Senators Hayakawa, Tsongas, Hart, Laxalt, Evans, Quayle, Tribble, Armstrong, Humphrey, Wilson, Adams, Garn, Gore, Rudman, Symms, and Wirth. We exclude Senator Jocelyn Burdick who served for less than a year, filling a “widow’s mandate,” and Senators Kaneaster Hodges and Nicholas Brady, who also served appointments of less than a full Congress.

examine the individual behavior of filibuster leaders in 154 cases (89 percent) over the nineteen-year period.

We crafted our dependent variables using these data, calculating for each senator in the dataset a variable recording the number of filibusters he led per Congress. Since the number of filibusters per Congress per senator varied from 0 to 7, we use ordered logistic regression as our estimation technique.<sup>21</sup>

Our independent variable of greatest theoretical interest taps retirement. For each of the 58 senators who retired during the time period of the study, we code the Congress immediately prior to retirement 1; all other Congresses are coded 0. If senators' cooperative behavior is fundamentally based upon narrow calculations of personal utility (and, by extension, Senate leadership is rooted in the scheduling prerogative to capitalize on repeated iterations of the legislative game), we would expect to see senators substantially increase their filibuster participation in the pre-retirement Congress, all other factors held constant. If this variable generates an insignificant coefficient (or one with a negative sign) that would be evidence that internalized norms dampen filibuster behavior, even when the shackles of rational considerations are loosened.

Filibusters, of course, do not occur in a vacuum; in the real world, considerations beyond impending retirement are certain to influence the filibustering decisions of individual senators. Unfortunately, since previous research on filibusters has focused exclusively on the aggregate rather than the individual level, there is little in the literature to guide our selection of control variables to include on the right hand side of our equations. Utilizing our own instincts and

---

<sup>21</sup> We also ran each of the models using a variety of other MLE estimators and in OLS. The findings were generally robust, with the choice of estimator making little difference in terms of either statistical or substantive significance, or overall model fit.

judgment, however, we believe there are at least three factors that might significantly influence individual filibuster behavior. First, by definition filibusters are undertaken by minorities in order to derail the preferences of a legislative majority. We code each senator as to whether he was a member of the majority party in the Senate for each Congress we examine. Those in the majority party are coded 0, those in the minority 1; as a result, we expect this variable to generate a positively signed coefficient.

Second, even casual examination of the raw data reveals that senators with more ideologically extreme reputations tended to filibuster more than did their moderate colleagues during this period. Therefore, we generated a “folded” ideological extremism measure, calculated by taking the absolute value of the difference between each senator’s mean Americans for Democratic Action (ADA) score and the ADA midpoint of 50. Senators with more ideologically extreme voting patterns --- be they liberal or conservative --- generate larger values on this measure, with moderate senators scoring closer to 0. *Ceteris paribus*, we expect this variable to produce a positively signed coefficient, indicating a greater willingness to filibuster by ideological extremists.

Third, following the work of Lee (1998) and Lee and Oppenheimer (1999) on “the unequal consequences of equal representation,” we suspect that senators from small states might take greater advantage of filibuster opportunities to achieve in the Senate what small delegation size often precludes in the House. While there are numerous ways in which to operationalize “small state size”, we chose a dichotomous measure in which we coded senators from the 19

least populous states as 1 and all others as 0.<sup>22</sup> Again, our expectations are straightforward; if senators from smaller states are systematically more likely to initiate filibusters, this variable should generate a positively signed, statistically significant coefficient.

## Results

Simple descriptive analysis of the data tells some of the story. These data show that 36 of the 58 retiring senators (62 percent), did not lead a filibuster at any time during the period of our analysis, indicating that a majority of filibusters are being led by a minority of members. Of the 22 retiring senators who led at least one filibuster during the 1975-1993 period, fully half (n = 11) did not lead one in the final Congress of their careers. In other words, only 11 of 58 retiring senators (less than one-fifth) can be identified as leading filibusters during the final two years of service in the Senate,<sup>23</sup> a figure that does not provide overwhelming *prima facie* evidence that retiring senators are behaving in the strategic, utility maximizing manner some have suggested. Of the 40 total filibusters waged between 1975 and 1993 that we identify as having been led by senators who retired during this period, only about 38 percent (n = 15) were launched during the final Congress of the leader's tenure in the Senate.<sup>24</sup>

---

<sup>22</sup> We take this from table 1 in Lee (1998, 37-38). Lee calculates a representation index based on "a ratio of the state's actual population to 1/50<sup>th</sup> of the nation's population." As Lee explains, "[w]hen the ratio is equal to one, the state is neither over- nor underrepresented by reference to a one-person, one vote standard; when it is less than one, the state is overrepresented; when it is greater than one, the state is underrepresented." We chose the cut-off of an index score of .50, differentiating *substantially* overrepresented states from others.

<sup>23</sup> Furthermore, only four of these retiring senators (Abourezk [D-SD], Mathias [R-MD], Evans [R-WA], and Wirth [D-CO]) engaged in more than one filibuster in their last Congress.

<sup>24</sup> It is possible that failure to filibuster during the last Congress of a Senate career may not be evidence of norm-based behavior but rather part and parcel of a broader pattern of shirking of duties prior to retirement. We do see some evidence of shirking among the retiring senators in our sample (*e.g.*, in earlier Congresses, our retirees participated in an average of 89.86 percent of all votes, compared to just

Gaining additional purchase on these figures requires employing multivariate equations, which we report in Table 1. This table shows results for three sets of senators: all senators who served during the 19 year period of our study; those who retired during the period; and those senators who retired after serving their entire tenure in the Senate between 1975 and 1993. We run these analyses separately because we expect them to give us different perspectives on the individual-level factors influencing filibusters. The equation examining all senators should give us the broadest view of those factors associated with filibustering at the level of the individual senator. However, since a large majority of the senators who served during this period did not retire, the effects of retirement might be artificially muted in this model since the retirement variable will actually be a constant for most of the senators considered. The model examining the behavior of all those senators who retired during the 1975-1993 period has the advantage of showing variation in the retirement variable for all senators in the model. However, as noted above, the cut-off dates for the time period we review complicate the analysis for those senators who retired early in the time series and risk obfuscating the impact of any retirement effect. Finally, the model examining only that small subset of senators who voluntarily retired after serving their entire Senate careers during the 1975-1993 period allows us the best opportunity to isolate a retirement effect, although the small number of cases and the (possibly idiosyncratic)

---

85.26 percent during the Congress immediately prior to their retirements, a difference that is statistically significant at the .01 level). However, filibustering does not appear to be related to such shirking. Specifically, last Congress voting participation rates for filibuster leaders (85.91 percent) are not significantly different from that of non-filibusterers (85.11 percent). Moreover, when a voting participation rate variable is added into our multivariate equations, it neither achieves statistical significance nor materially impacts the performance of the other independent variables. It is also possible that our observed results flow from the fact that, as a matter of chance and happenstance, retiring senators did not need to filibuster much in their last Congress because the issues that would motivate them to filibuster simply did not arise during that time period, possibly because they had successfully killed such measures in previous years. While we think the nature of our longitudinal analysis make such possibilities highly unlikely, it would require detailed, “thick analysis” of each senator’s preferences and behavior to definitively rule this out; such analysis, however, lies well outside the scope of this paper.

nature of those senators who opt for short careers may strain the reliability of the model as well as its generalizability.

[Table 1 about here]

The results for all senators who served during the 1975-1993 period are found in the left column of Table 1. As expected, ideological extremism and membership in the minority party emerge as highly robust predictors of filibuster behavior, both significant well beyond the .01 threshold. State size and retirement status, however, fare poorly in this model. The coefficient for neither variable even approaches the size of its associated standard error and in both cases the coefficients carry unanticipated negative signs. Clearly, when examining all senators, it is those who are ideologically extreme and members of the minority party who are more likely to engage in more filibusters. This is intuitive, since such members are likely to favor defeat of majority-preferred legislation and have the most to gain by exercising dilatory tactics. On the other hand, it is worth noting that the pseudo- $R^2$  for the model is a modest .02, indicating that even the relatively powerful effects of ideology and partisanship account for only a fraction of the variation observed in filibuster rates.<sup>25</sup>

The middle column of Table 1 displays the results for those senators who retired from the chamber during the period of our study. Again, the model results are somewhat disappointing, generating an overall pseudo- $R^2$  of only .03. State size and retirement remain statistically insignificant in this specification (although each carries the anticipated positive sign), and

---

<sup>25</sup>Suspecting the possibility that the retirement effect might operate in a non-additive fashion for only some types of senators (*e.g.*, that ideological extremists on the verge of retirement might be even more likely to filibuster), we crafted variables interacting retirement with the other three independent variables and ran various iterations of this and the following models with these interactive terms, both sequentially and collectively. In no instances did these interactive terms contribute to improved model fit.

ideological extremism, too, appears unrelated to filibuster behavior among this group of retiring senators. Only membership in the chamber's minority party seems to have a consistent effect on the filibuster decisions of this subset of senators, and then only if we are inclined to accept a liberal .10 threshold of statistical significance.<sup>26</sup>

Finally, the right side column of Table 1 summarizes the results for the smallest subset of senators in our study, those who completed their entire Senate service during the 1975-1993 period and left the chamber voluntarily. As noted above, while this drops the number of cases significantly (to 16 senators and 75 total observations), it gives us the best purchase on the effects of retirement since we have a group of senators for whom we can observe complete careers, without the censoring effects inherent in employing the 1975 and 1993 cut-off dates. The results from this model show that, at least for this group of senators, impending retirement does appear to increase somewhat their willingness to engage in filibusters. The positive sign on the retirement variable indicates that after controlling for the effects of partisanship, ideology, and state size, senators who completed their entire Senate service during the 1975-1993 period were more likely to undertake filibusters in the last Congress of their tenure, but the strength of this association is marginal and statistically significant only if we accept the .10 threshold ( $p < .07$ ).<sup>27</sup>

---

<sup>26</sup>End of career filibusters are also likely to be influenced by several other factors, including age (essentially a surrogate for infirmity) and perhaps post-Senate employment plans (those senators planning on post-retirement careers that include on-going interaction with their former colleagues might still see entirely instrumental reasons for not alienating them with obstructionist behavior). We modeled these factors in an equation (not reported, but available from the authors), in which we created a dichotomous dependent variable, coded 1 for those retirees who led a filibuster during their last Congress, 0 otherwise. After controlling for state size, ideological extremism, and membership in the minority party, neither age nor post-retirement employment patterns emerged as statistically significant.

<sup>27</sup>This finding is confirmed through difference of means tests. During the earlier portions of their careers in the Senate, these 16 senators led a total of eleven filibusters, for a per-Congress average of .20. During

It also bears mentioning that while among this group of senators members of the minority party were no more likely than members of the majority to engage in filibusters, those from small states were at least modestly more likely to do so ( $p < .083$ ), the only evidence in our study that state size affects filibustering behavior. Interestingly, the ideological extremism variable also generates a modestly significant and *negatively* signed coefficient, indicative of greater filibustering activity among moderates than among extremists. While this is certainly counter-intuitive, it may be driven at least somewhat by the nature of the senators who opted for short careers in the late 1980s and early 1990s (14 of our 16 cases retired in 1986 or later). There was a marked increase in ideological and partisan polarization in the Senate during this time period (Binder 1996), which made the institution a markedly less hospitable environment for moderates of both parties (see Cohen 1996).<sup>28</sup> This seems to be reflected not just in high rates of retirements among moderates during this period, but also frustrations leading toward high rates of filibusters among moderates (such as Gary Hart, Daniel Evans, and Gordon Humphrey) who would not ordinarily be expected to engage in such dilatory tactics.

It is possible that the observed pre-retirement increase in filibusters for members of this group and their reputation for being moderate are somewhat connected. McAdams (1997) suggests there is a fundamental difference between what he calls “abstract norms” and “concrete

---

their final Congresses, however, they waged eight filibusters, doubling the average to .56. Again, this is a statistically significant difference ( $p \leq .056$ ) if considered under a more liberal statistical threshold.

<sup>28</sup>See also the Senate farewell speeches collected in Ornstein and Guttman (1997). As the editors note “many of [the retiring senators] lament the increasing level of vituperation and partisanship that has permeated the atmosphere and debate in the Senate” (p. xi).

norms.”<sup>29</sup> The distinction is an important one because abstract norms are not only more generally accepted,<sup>30</sup> but are also likely to develop well before concrete norms do.<sup>31</sup> Our findings are consistent with this interpretation, highlighting as they do a group of moderate senators with relatively short tenures in the chamber who appear to have more thoroughly internalized the institution’s abstract norms of restraint and cooperation than the concrete behavioral norm of forgoing filibuster opportunities.

## **Discussion and Conclusions**

In this study, we have expanded our understanding of filibusters in the U. S. Senate by examining, for the first time, the factors that contribute to individual senators’ decisions to lead “extended debates.” In general, our multivariate models tend to confirm intuition and conventional wisdom regarding the forces that motivate filibustering behavior. *Ceteris paribus*, senators who are ideologically more extreme and those who are members of the minority party in the chamber tend to lead disproportionate numbers of filibuster.

Our findings regarding the effects of impending retirement are somewhat more ambiguous. The fact that fewer than 20 percent of senators opt to lead filibusters in their last Congress strikes us as underwhelming and indicates, at very least, that retiring senators do not entirely and *en masse* disregard the chamber’s norms of comity and cooperation in order to pursue narrowly personal legislative goals. This dynamic is visible in our first two multivariate

---

<sup>29</sup>McAdams (1997, 383) gives “be a good neighbor” as an example of an abstract societal norm, and “don’t litter” or “clean up after your dog” as examples of more concrete norms.

<sup>30</sup>“Many people internalize obligations like ‘do one’s share’ or ‘be respectful of others,’ but not the specific behaviors necessary to fulfill these obligations” (McAdams 1997, 384).

<sup>31</sup>“The point here is one of timing: If internationalization occurs at all, it is likely to occur first at the abstract level and only later at a concrete level” (McAdams 1997, 383).

models (*i.e.*, those for all the senators who served during this time period and for retirees), where the coefficients associated with the retirement Congress variable are insignificant in both cases. The unwillingness of most retiring senators (who were, on average, older and more senior than others in the chamber) to take advantage of the full range of obstreperous parliamentary tactics even when they no longer had to fear future sanctions from their colleagues speaks to the powerful, lasting effects of the internalization of group norms. This is somewhat at odds with a model (see, especially, Krehbiel 1986) that stylizes senators as simple utility maximizers engaged in an iterated, prisoners' dilemma game. To the extent that norms seem to matter (at least for some senators) the model needs to be amended.

The rational choice model receives greater (if still less than overwhelming) support when we focus on only those senators whose entire careers are encompassed within our time series. For these senators, as the shadow of the future shortens and retirement nears, incentives to cooperate appear to lessen and incentives to defect appear to increase, rendering this group of senators somewhat more likely to engage in dilatory behavior, even after controlling for other relevant factors. We account for this deviation from our general finding by delineating the unusual nature of this group of senators, arguing that while they appear to have embraced certain abstract institutional norms, their relatively short terms in office did not allow them to fully internalize concrete norms related to the filibuster. Nevertheless, the example of these 16 senators provides the best evidence we have of strategic "followership" behavior, although clearly more research is needed to broaden the scope of the investigation, expanding both the length of time and the number of senators under consideration.

To the extent that these findings are valid, they have implications that reach beyond our understanding of filibusters to speak, more generally, our appreciation of how Senate leadership

operates. Surveying the daunting task facing Senate leaders and inventorying the diminishingly small array of institutional resources at their disposal, Krehbiel (1986; see also Stewart 2001) has provided one of the few compelling accounts of how leaders can systematically compel their notoriously individualistic colleagues to cooperate by utilizing their scheduling prerogatives to capitalize on the iterative features of the legislative process. Taking advantage of the “end game” properties of this process, our analysis extends the limited, anecdotal evidence that Krehbiel first offered in support of his model. The fact that we do see *at least some systematic evidence* of strategic increases in filibustering on the part of some retiring senators makes the elegant theoretical model rather more appealing. However, the fact that these increases are both statistically and substantively marginal indicates, in our judgment, that there is still plenty of room for the amorphous concepts of personal skill and institutional norms in any explanation for the workings of Senate leadership. These findings suggest that contemporary students of the Congress may have underestimated the importance of norms such as cooperation and reciprocity. While there is little doubt that --- in a relative sense --- there has been an erosion in these norms over the past 50 years, it would be a gross exaggeration to conclude that they no longer matter. Indeed, our findings are consistent with an interpretation that they matter a great deal and serve as significant constraints on individual incentives that could be quite detrimental to the welfare of the institution.

Even more generally, our analysis speaks to other, larger, issues, extending as they do the growing literature in law and economics regarding how informal social norms can help overcome pervasive collective action problems. Since the pioneering work of Ellickson (1991), scholars in this tradition have recognized that there can be “order without law,” at least if a group is closely knit *and* interactions among individuals within the group are iterative so as to make

cooperation and accommodation individually rational. Our findings relative to the behavior of U. S. senators implies that while norms of cooperation may well be rooted in essentially rational evaluations of personal utility, as these norms become internalized over a long period they outlive the expiration of purely rational considerations and continue to exercise an influence on behavior even when individual utility concerns may dictate otherwise. Models of human behavior will be richer and more illuminating when the roots and limits of norms are more fully incorporated into the rational choice perspective.

## Sources

- American Association of Retired Persons. 1995. *Valuing Older Workers: A Study of Costs and Productivity*. Washington: AARP.
- American Association of Retired Persons and the Society of Human Resource Managers. 1993. *The Older Workforce: Recruitment and Retention*. Washington: AARP.
- Asher, Herbert. 1973. "The Learning of Legislative Norms." *American Political Science Review* 67 (June): 499-513.
- Axelrod, Robert. 1981. "The Emergence of Cooperation Among Egoists." *American Political Science Review* 75:306-318.
- \_\_\_\_\_. 1984. *The Evolution of Cooperation*. New York: Basic Books.
- Azar, Ofer H. N.D. "The Implications of Tipping for Economics and Management." *International Journal of Social Economics* forthcoming.
- Baker, Ross K. 1995. *House and Senate*. New York: W. W. Norton. Second edition.
- \_\_\_\_\_. 1999. *Friend and Foe in the U. S. Senate*. Acton, MA: Copley.
- Barry, Brian M. 1970. *Sociologists, Economists, and Democracy*. London: MacMillan.
- Barth, Michael C., William McNaught, and Philip Rizzi. 1993. "Corporations and the Aging Workforce." In *Building the Competitive Workforce: Investing in Human Capital for Corporate Success*, P. H. Mirvis, ed. New York: Riley.
- Beth, Richard S. 1994. "Filibusters in the Senate, 1789-1993" (memorandum). Washington: Congressional Research Service.
- \_\_\_\_\_. 1995. "What We Don't Know About Filibusters." Paper presented at the annual meeting of the Western Political Science Association.
- Binder, Sarah A. 1996. "The Disappearing Political Center." *Brookings Review* 15 (Fall):36-39.
- Binder, Sarah A., Eric D. Lawrence, and Steven S. Smith. 2002. "Tracking the Filibuster, 1917 to 1996." *American Politics Research* 30: 406-422.
- Binder, Sarah A. and Steven S. Smith. 1997. *Politics or Principle?: Filibustering in the United States Senate*. Washington: Brookings Institution.
- Burdette, Franklin L. 1965. *Filibustering in the Senate*. Princeton: Princeton University Press.

- Chong, Dennis. 2000. *Rational Lives: Norms and Values in Politics and Society*. Chicago: University of Chicago Press.
- Cohen, William S. 1996. "Why I Am Leaving." *The Washington Post* (January 21): C7.
- Cooter, Robert D. 1996. "Decentralized Law for a Complex Economy: The Structural Approach to Adjudicating the New Law Merchant." *University of Pennsylvania Law Review* 144:1643-1657.
- Davidson, Roger H. and Walter J. Oleszek. 2002. *Congress and Its Members*. Washington: CQ Press. Eighth edition.
- Dewar, Helen and Amy Goldstein. 2002. "Democrats Trim Prescription Drug Plans." *Washington Post*. July 28, p. A5.
- Ellickson, Robert C. 1991. *Order Without Law: How Neighbors Settle Disputes*. Cambridge: Harvard University Press.
- Froman, Lewis A. 1967. *The Congressional Process*. Boston: Little, Brown.
- Gamm, Gerald and Steven S. Smith. 2002. "Policy Leadership and the Development of the Modern Senate." In David W. Brady and Mathew D. McCubbins, eds., *Party, Process, and Political Change in Congress: New Perspectives on the History of Congress*. Stanford: Stanford University Press.
- Gould, Julius and William L. Kolb, editors. 1964. *A Dictionary of the Social Sciences*. New York: Free Press.
- Grafstein, Robert. 1999. *Choice-Free Rationality: A Positive Theory of Political Behavior*. Ann Arbor: University of Michigan Press.
- Granovetter, Mark. 1985. "Economic Action and Social Structure: The Problem of Embeddedness." *American Journal of Sociology* 91 (November):481-510.
- Harris, Fred R. 1993. *Deadlock or Decision: The U.S. Senate and the Rise of National Politics*. New York: Oxford University Press.
- Hassell, B. L. and P. L. Perrewe. 1995. "An Examination of Beliefs About Older Workers: Do Stereotypes Still Exist?" *Journal of Organizational Behavior* 16:457-468.
- Hatch, Orrin G. 2002. *Square Peg: Confessions of a Citizen Senator*. New York: Basic Books.
- Hogarth, Terence and Michael C. Barth. 1991. "The Costs and Benefits of Hiring Older Workers: A Case Study of B&Q's Use of Older Workers." *International Journal of Manpower* 12 (8).

- Keith, Robert. 1977. "The Use of Unanimous Consent in the Senate." *Committees and Senate Procedures*. Washington: U.S. Senate (94th Congress, 2nd Session).
- Krehbiel, Keith. 1986. "Unanimous Consent Agreements: Going Along in the Senate." *Journal of Politics* 48:541-564.
- Kuran, Timur. 1995. *Private Truths, Public Lies: The Social Consequences of Preference Falsification*. Cambridge: Harvard University Press.
- \_\_\_\_\_. 1998. "Ethnic Norms and their Transformation Through Reputational Cascades." *Journal of Legal Studies* 27: 623-659.
- Lee, Frances E. 1998. "Representation and Public Policy: The Consequences of Senate Apportionment for the Geographic Distribution of Federal Funds." *The Journal of Politics* 60 (February): 34-62.
- Lee, Frances E. and Bruce I. Oppenheimer. 1999. *Sizing Up the Senate: The Unequal Consequences of Equal State Representation*. Chicago: University of Chicago Press.
- McAdams, Richard H. 1997. "The Origin, Development, and Regulation of Norms." *Michigan Law Review* 96 (November):338-433.
- McNaught, William and Michael C. Barth. 1992. "Are Older Workers 'Good Buys'? A Case Study of Days Inns of America." *Sloan Management Review*, 33 (3): 53-63.
- Matthews, Donald. 1973. *U. S. Senators and Their World*. New York: W. W. Norton.
- Monroe, Kathryn. 2001. "Understanding the Senate: Cloture." Available at [www.cq.com/common/document\\_display.jsp?file=/editorial\\_access/news/scoop\\_items/20010703cloture.html](http://www.cq.com/common/document_display.jsp?file=/editorial_access/news/scoop_items/20010703cloture.html).
- Oppenheimer, Bruce I. 1985. "Changing Time Constraints on Congress: Historical Perspectives on the Use of Cloture." In *Congress Reconsidered*, Lawrence C. Dodd and Bruce I. Oppenheimer, eds. Washington: CQ Press. Third edition.
- Ornstein, Norman and Henning Gutmann, editors. 1997. *Lessons and Legacies: Farewell Addresses from the U. S. Senate*. New York: Addison-Wesley.
- Ornstein, Norman, Thomas Mann, and Michael Malbin. 2000. *Vital Statistics on Congress, 1999-2000*. Washington: CQ Press.
- \_\_\_\_\_. 1998. *Vital Statistics on Congress, 1997-1998*. Washington: CQ Press.

Sharp, J. Michael. 1997. *Directory of Congressional Voting Scores and Interest Group Ratings*. Washington, DC: Congressional Quarterly Press.

Sinclair, Barbara. 2001. "The New World of U. S. Senators." In *Congress Reconsidered*, Lawrence C. Dodd and Bruce I. Oppenheimer, eds. Washington: CQ Press. Seventh edition.

Stewart, Charles H. 2001. *Analyzing Congress*. New York: W. W. Norton.

<b>Table I</b>			
Ordered Logistical Regression Models of Individual-Level Filibuster Behavior, 1975-1993			
Variable	All Senators	Retirees	Complete Career
Minority Party	0.511*** (.167)	0.634* (.394)	0.700 (.599)
Ideological Extremism	0.022*** (.006)	0.006 (.014)	-0.043* (.023)
Small State	-0.080 (.172)	0.344 (.398)	1.061* (.612)
Retirement Congress	-0.002 (.350)	0.367 (.411)	1.200* (.661)
Pseudo-R <sup>2</sup>	.02	.03	.11
n	1012	218	75
cut 1	2.384 (.223)	2.472 (.487)	0.809 (.805)
cut 2	3.900 (.260)	4.180 (.599)	3.159 (.957)
cut 3	5.312 (.361)		
cut 4	5.858 (.436)		
cut 5	7.120 (.740)		
cut 6	7.815 (1.024)		
***p ≤ .01; **p ≤ .05; *p ≤ .10			