

UC-BERKELEY

Center on Institutions and Governance Working Paper No. 21



Dimensionality in Debating and Voting: The Case of the Partial-Birth Abortion Act of 2003

Cheryl Schonhardt-Bailey

Institute of Governmental Studies University of California, Berkeley

April 2006

This paper can be downloaded without charge at:
Center for Institutions and Governance Working Papers Series:
<http://igov.berkeley.edu/workingpapers/index.html>

**DIMENSIONALITY IN DEBATING AND VOTING: THE CASE OF THE
PARTIAL-BIRTH ABORTION BAN ACT OF 2003**

*Cheryl Schonhardt-Bailey
Government Department
London School of Economics and Political Science
Houghton Street
London WC2A 2AE
United Kingdom
ph 44 (0) 207 955 7187
fax 44 (0) 208 658 5738
email: c.m.schonhardt-bailey@lse.ac.uk
<<http://personal.lse.ac.uk/schonhar/>>*

Paper prepared for the Conference on Comparative Analysis of Legislative Behavior,
April 14 – 15, 2003, University of California, San Diego

I. INTRODUCTION

Spatial models of voting behaviour seek to portray the means by which legislators evaluate and process information about policy decisions, make judgments about conflicting issues, and ultimately transmit this into voting behaviour. In his discussion of two-space theory (Converse 1964; Ordeshook 1976; Hinich and Pollard 1981), in which legislators’ attitudes on a variety of issues are *constrained* (or bundled) by some mechanism which allows their evaluations of these issues to be mapped in a low-dimensional space, Poole identifies some “unsolved problems” (Poole 2005: 202). One such problem relates to the nature of the link between the multidimensional issue space and the low-dimensional evaluative space—namely, the means by which issues are bundled, why these issue bundles persist over time, and how new issues emerge in the current bundle (Poole 2005: 202). This paper seeks to address the problem of the link between the multidimensional issue space and the low-dimensional evaluative space by examining one issue—abortion—and its link to the low-dimensional space of Congressional voting (Poole and Rosenthal 1997). Admittedly, the focus on a single issue may provide only limited insight into the “glue” that holds abortion and other issues together. However, because abortion is one of the core issues on which the parties have become increasingly polarized (Adams 1997; Carmines and Woods 2002), it provides an ideal beginning with which to explore the means by which an issue (which in itself is multidimensional) becomes constrained and is mapped onto the low-dimensional evaluative space. And finally, in selecting the controversial and emotive issue of the partial-birth abortion ban, this paper embraces Poole’s expectation that a fuller understanding of the constraint mechanism “must take into account the role that intensity of belief—*passion*—plays in providing the glue that holds issue bundles together” (Poole 2005: 202).

This paper introduces a relatively new methodology for analyzing dimensionality in a legislative setting. I employ computer-assisted content software to analyze Senate debates on the 2003 Partial-Birth Abortion Ban Act (2003) and compare these results with Poole’s depiction of the final roll call vote on this legislation in October 2003 (Poole 2005). While the final vote on this bill is, as Poole argues, mostly one dimensional, the underlying conflict leading up to the final vote contains two important dimensions. In short, sponsors of the bill established two dimensions of conflict—one, a legal/constitutional battle over the constitutionality of the bill, and two, an emotive and personal battle over the particular abortion procedure which the bill sought to ban. The aim of this paper is to understand the means by which these dimensions of conflict were conflated into one, which then reflected the final vote. Section II describes a number of different approaches to linking low- and high-dimensional spaces; section III describes the case of the Partial-birth Abortion Ban Act (while the Appendix continues the history of this to date); section IV discusses the data and methodology; section V gives the results of the analysis; and section VI discusses and concludes.

II. LINKING LOW-DIMENSIONAL AND HIGH-DIMENSIONAL SPACES

“Dimensionality” in spatial voting models is an abstraction, although most would agree that in a legislative setting it usually refers to a single continuum of positions by legislators, and the simple way to interpret this continuum is that it represents ideology (Hinich and Munger 1994; Poole and Rosenthal 1997). Within this context,

roll call votes constitute “mappings of the issues onto the continuum” (Poole and Rosenthal 1997: 5). Because issues can indeed be “mapped” onto a single continuum, this suggests that there is some coherence in political views, some means by which legislators’ positions on a variety of issues are bundled together and remain bundled. If a single issue can be said to represent (at least in part) the panoply of different issues—in that a legislator’s position on that single issue predicts his position on other issues—then by examining the precise means by which the initial multidimensionality of that single issue is reduced or constrained onto a low-dimensional evaluative space, we may better understand how other issues are similarly constrained. In short, by tracing the path taken by one (important) issue from multidimensionality to low-dimensionality, we might better understand the larger issue-bundling process.

A number of recent studies of legislative and other political behaviour have sought to explore the links between multidimensionality and low-dimensionality—some by analyzing roll call votes (Groseclose, Levitt et al. 1999; Norton 1999; Hurwitz, Moiles et al. 2001; Poole 2005); others by analyzing survey or elite interview data with correlational and confirmatory factor analysis (Craig, Martinez et al. 1999; Levine, Carmines et al. 1999) or principal-component analysis (Selck 2004); and others by comparing and contrasting alternative methodological approaches (Brazill and Grofman 2002; Grofman and Brazill 2002). Two studies are particularly relevant to this paper, as they both offer insights on multi- and low-dimensionality by examining the legislative *process*, both before and after floor voting.

First, Potoski and Talbert (Potoski and Talbert 2000) argue that much of the research on legislation focuses on voting behaviour, and thereby takes a “static” view of what should be understood as a dynamic legislative process. These authors build on well-established findings¹ in which policy proposals are multidimensional in the legislative process *before* they reach the floor of the chamber. During floor voting, “(i)ssue dimensions change as legislators translate policy proposals into legislation” (Potoski and Talbert 2000: 697). Theories of committees and theories of party leaders (Rohde 1991; Aldrich 1995; Shepsle and Weingast 1995; Sinclair 1995) accept that the multiple evaluative dimensions within a particular policy proposal on an issue create the “cycling problem”—where decisions are unstable because counter majorities can repeatedly overturn majority decisions. Potoski and Talbert aptly note that “(t)he key feature of these legislative theories is that they winnow away the dimensions of policy proposals leaving only a single evaluative dimension for floor voting” (Sinclair 1995: 697). (These authors then provide compelling evidence to suggest that just as the dimensional structure of policy proposals changes (reduces) from their introduction to the vote on the legislative floor, dimensionality changes again—i.e., resumes high dimensionality—once the legislation is passed and it is implemented in the field.) The point here is that the dimensionality of policy proposals invariably changes over the course of the legislative process.

Second, in his study of dimensionality in the European Parliament, Ringe (Ringe 2005) accepts that ideology constitutes the “dominant” dimension but that ideas or images may be employed as “focal points”, or simplifying labels, to shift legislators’ attention towards particular interpretations of a policy proposal. Legislators may begin with fixed positions on the ideological dimension, but strategic legislative actors deploy focal points to shape the interpretation of the policy proposal. These new interpretations do not change legislators preferences per se, but they do narrow

the focus of the parliamentary deliberations to key aspects of the policy proposal, and thereby structure the choices available to legislators when they vote. The notion of focal points parallels, in part, Riker's "heresthetician", who strategically shifts the dimensionality of the policy proposal so that he can win (Riker 1986), or as McLean explains: "A heresthetician knows that no outcome in multidimensional space is stable under majority rule. So he structures the world so that he can win for his favourite option" (McLean 2001: 46).² In this sense, Ringe's focal points and Riker's heresthetics both highlight the importance of ideas and rhetoric in structuring the choices available to legislators on a particular issue by defining and shaping the nature of the policy proposal.

Unusually, Ringe's study examines both qualitative data (traditional content analysis of parliamentary debates) and quantitative data (roll call data using NOMINATE), and thus goes some way to bridging the high-dimensionality of legislative deliberation with the low-dimensionality of roll-call voting. This paper similarly merges content analysis of legislative debates with NOMINATE scores as it examines empirically the bridge between legislators' consideration of multiple evaluative dimensions of a policy proposal (as revealed here in Senate floor debates) to their voting decision. The value of the methodology adopted here (computer-assisted content analysis software called Alceste) is that it allows the researcher to map *both* the high dimensionality of legislative debates *and* the unidimensionality of the particular roll call vote in a *single* spatial map.

III. THE CASE OF THE PARTIAL-BIRTH ABORTION BAN ACT

a. Background

i. Party Polarization on Abortion

It would be difficult to identify an issue that has sparked the passions of Americans as much as abortion.³ Adams has argued persuasively that abortion is one of the key issues driving ideological polarization between the Democratic and Republican parties. Even more, he argues that it is "the only large-scale issue in which it has been shown that the party masses *switched* their [party] preferences" to align with the stance of party leaders (Adams 1997: 733). He identifies a clear partisan trend on abortion in Congressional roll call votes from 1979 onwards, with Democrats becoming increasingly pro-choice and Republicans increasingly pro-life. This has resulted, he argues, in more internal party cohesion on the abortion issue and clearer party signals to the electorate, with the effect that (some) electors have changed their party affiliation over abortion. Carmines and Wood (Carmines and Woods 2002) refine the issue evolution thesis by confirming that activists in both parties have followed this pattern, with Democratic activists moving toward pro-choice and Republican activists toward pro-life. These authors find, moreover, that from the 1990s onwards, abortion attitudes in the electorate have followed the polarization pattern set by political elites. Both studies identify a trend toward party polarization on abortion beginning in Congress and subsequently spreading to the electorate.

Fiorina, Abrams and Pope (Fiorina, Abrams et al. 2005), on the other hand, take issue with the broader notion of a polarized political culture in the U.S. On abortion, Americans are said to be "pragmatic": "(t)hey favor the right to choose, but only a small minority favors the right to choose in every conceivable circumstance.

Overwhelming majorities regard rape, birth defects, and threats to the mother's life and health as sufficient justifications for abortion, while clear majorities regard personal convenience and gender selection as insufficient" (Fiorina, Abrams et al. 2005: 44). In short, Americans are "pro-choice, but" (Fiorina, Abrams et al. 2005: 42). With respect to party polarization on abortion, these authors readily accept a clear divide between pro-choice Democrats and pro-life Republicans who are party activists, political office-holders and lobbyists groups. The authors argue, however, that rank-and-file Democrats and Republicans have not absorbed the signals from activists and politicians on abortion (contrary to Carmines and Wood, who maintain that on abortion, "it is clear that we are witnessing a mass issue evolution still in progress with no clear end in sight" (Carmines and Woods 2002: 370)). So, while all these authors accept a trend in party polarization on abortion among political elites and activists, the unresolved question is the extent to which the mass public has followed this clear trend and whether rank-and-file Democrats and Republicans have "listened" to the partisan message from the elites and activists.

ii. The Procedure

One of the clearest signs of party polarization on abortion among legislators is the language they use to describe abortion, and particularly the language used to describe the title and contents of the 2003 ban on a particular method used for late-term abortions. While unpleasant, to understand the Senate debates on this ban, we must be clear on what the bill's sponsors sought to ban.

In a National Abortion Federation Risk Management Seminar paper in 1992, Dr Martin Haskell detailed a procedure for second trimester abortion, which he termed "Dilation and Extraction" (or D & X) to distinguish it from the classic D & E (dilation and evacuation) procedure (in which the fetus is dismembered inside the uterus before removal). In the D & X procedure, Haskell explains that "the surgeon grasps and removes a nearly intact fetus through an adequately dilated cervix" (Haskell 1992: 27). With all but the skull of the fetus delivered, "the surgeon takes a pair of blunt curved Metzenbaum scissors" and "forces the scissors into the base of the skull...spreads the scissors to enlarge the opening" and then inserts a "suction catheter into this hole and evacuates the skull contents. With the catheter still in place, he applies traction to the fetus, removing it completely from the patient" (Haskell 1992: 30-31).

iii. Partial-birth Abortion Bans

This procedure came to be described by many pro-life proponents as "partial-birth abortion", in part because the term essentially recasts abortion as infanticide. For obvious reasons, pro-choice proponents vehemently oppose this labelling of the procedure, arguing that it is not a medical term. They argue, moreover, that physicians should decide the abortion procedure most appropriate to the needs of the woman, and in cases of late-term abortion, this may be D & E or D & X. Planned Parenthood, for instance, cites the Supreme Court ruling in *Thornburgh v. American College of Obstetricians and Gynecologists* in which physicians who perform "postviability" abortions are allowed to use the procedure "most likely to preserve the woman's health, even if it might endanger fetal survival" (Federation 2006). At issue is whether the method of abortion (at whatever stage in the pregnancy) ought to be left to the discretion of physicians or whether legislators should have a say in which methods are acceptable and which are not. Or, as one critic of the 2003 Act succinctly

states, “(i)f a mother has a right to choose abortion in the first place, she has a right to choose the safest method regardless of whether the fetus is terminated inside or outside the uterus” (Abaluck 2003).

The first attempt by Congress to ban the procedure was the Partial-Birth Abortion Ban Act of 1995. The House overrode President Clinton’s 1996 veto of the bill, but the Senate was several votes short with a margin of 58 yeas to 40 nays. Again, in 1997, Congress passed a ban on partial-birth abortion and again it was vetoed by President Clinton. The House overrode the veto with even more votes than in 1996, but the override narrowly failed in the Senate by 64 to 36. Subsequently, a number of states passed bans on the procedure, giving rise to numerous court cases against the state bans on the grounds that the bans were unconstitutional. One such case, *Stenberg v. Carhart* (2000) reached the Supreme Court, and the Court struck down a Nebraska law that made partial-birth abortion illegal because it failed to create an exception for the woman’s health and because the statute was deemed ambiguous (i.e., it might be construed as banning some D & E procedures). Inasmuch as the Supreme Court required exceptions for the health of the mother (including mental and emotional health) in *Roe v. Wade* (and *Doe v. Bolton*), the Nebraska law breached these landmark rulings by failing to include an exception for the woman’s health. In 2002, Rep. Steve Chabot introduced yet another ban on the procedure in the House, which passed and was placed on the Senate legislative calendar in late July of 2002, but given the lateness in the year, was not scheduled for Senate action.

b. The Partial-birth Abortion Ban Act of 2003

i. Passage of the Bill

In February 2003, Sen. Rick Santorum introduced a ban on the procedure in the Senate (S.3). This was passed by the Senate with one amendment (S. Amdt. 260) by Sen. Tom Harkin which expressed the “Sense of the Senate” that *Roe v. Wade* “was appropriate” and “should not be overturned”. Three other amendments failed to pass. S. Amdt. 258, by Sen. Patty Murray, sought to increase the availability of contraceptives, but her amendment was ruled out of order because it raised budgetary issues. S. Amdt. 259, by Sen. Richard Durbin, sought a title change (to “Late Term Abortion Limitation Act”) and the insertion of a medical exception. Similarly, Sen. Diane Feinstein sought to change the title to the “Post-Viability Abortion Restriction Act” and to insert a health exception (S. Amdt. 261). Notably, the bill was not committed to the Senate Judiciary Committee: on March 12th, Sen. Barbara Boxer moved to commit the bill but this motion failed 42 to 56. The bill passed the House in June and the conference report was filed in late September. On October 2, 2003, the House agreed to the conference version of the bill (which now excluded the Harkin amendment that had passed the Senate), and in turn this was also agreed in the Senate (64-34) on October 21, 2003. On November 5, 2003, President Bush signed the bill, and it became Public Law No: 108-105. (The Appendix provides further details of the Act and the controversies that it sparked.)

ii. The Final Vote in NOMINATE

Poole describes the October 21 Senate vote as “nearly one-dimensional” although a second dimension—on “ ‘social’ or ‘lifestyle’ issues”—accounts for a small amount of the voting (Poole 2005: 147-148). His graphs of the ideal points for senators, along with the cutting line for this vote and the seven senators whose votes were incorrectly

predicted, are presented in Figure 1.⁴ Since he finds that a second dimension is “extremely weak” in the 108th Senate he interprets this vote as representative of a one-dimensional legislature (Poole 2005).

Poole’s interpretation may be correct, but it is sorely limited by his focus on the votes alone. Ultimately senators voted on a particular form of this bill: their final vote was shaped and constrained by a deliberate framing of the bill and manipulation of choices available to senators on which to vote. Poole’s one-dimensional interpretation of the vote is helpful in providing the overarching ideological framework, but it provides no insight into the issues at stake, the legislative strategies employed, and the framing arguments used to influence both the final vote and audiences outside the 108th Senate.

[Figure 1 – about here]

IV. DATA AND METHODOLOGY

a. Data

This paper adopts a unique approach to bridging textual and voting data. The former consists of all the Senate floor debates on the Partial-birth Abortion Ban Act of 2003 from March to the final vote on October 21, 2003 (Table 1), while the latter consists of Poole’s rank order of each senator for the 108th Congress (Poole 2004) (Table 2), plus the senator’s party affiliation and vote on October 21, 2003. Poole notes that senators’ party affiliations “are almost perfectly separated in the liberal-conservative ordering” (Poole 2004), with Barbara Boxer at 1.0 being the most liberal senator and Jon Kyl at 100 the most conservative. Table 2 includes a final column indicating the senators that were misclassified by NOMINATE—and were thus “errors”—in the October 21, 2003 vote on the bill. As noted earlier, deliberations on the bill occurred only on the floor of the Senate as it was never sent to the Judiciary committee, and thus, these debates provide a full depiction of the recorded arguments in the Senate on this bill.⁵ In terms of the structure of the data, these debates form a text file where each speech or interjection by a senator constitutes a “case”, and each is identified (or “tagged”) with identifying characteristics, namely, (a) the senator’s rank and party affiliation from Table 2) (b) the senator’s vote on the final bill (yea, nay, abstain); (c) the nature of the speech (either in the form of a statement/argument or as printed material read by the senator or requested for inclusion in the Record); and (d) the date of the speech.

[Tables 1 & 2 – about here]

b. Methodology: Computer-Assisted Content Analysis

i. Computer-Assisted Content Analysis in Political Science

Many researchers in political science have used classical content analysis to describe textual data.⁶ This form of analysis provides a systematic and transparent way of managing large amounts of text. It also relies upon mainly “naturally occurring raw data”—e.g., newspapers, speeches, letters, public documents—which avoids problems of reactivity of the respondent that may occur in interviews. And, finally, content analysis provides researchers with well-documented procedures (Bauer 2000, 147). But content analysis can also suffer from problems of sampling and coding. The

former raises familiar issues of representativeness, sample size and the unit of sampling, while the latter involves issues of the nature of the categories, the organization of the coding scheme, and the adequacy of the coding process and coders (136, 139). In particular, interpretation of the material must be reliable (that is, coding must be consistent between and among coders) and it must be valid (that is, the codes must relate to the words used in the text and the sample must represent the whole text) (143-44).

Computer-assisted content analysis—such as Alceste—offers a way to surmount the difficulties of traditional content analysis, while at the same time producing results that are entirely consistent with it (Allum 1998). Alceste stands in stark contrast to classical content analysis in four ways. First, it is an automatic procedure that is insensitive to meaning and context. This may result in missed nuances, but it also guards against researchers and coders infusing their own biases into the coding and analysis. Second, it can provide an impression of a voluminous data corpus within a very short space of time. Third, and following on from that, the issue of reliability which arises with human coding is no longer relevant. Fourth, because large amounts of text can be analyzed quickly—which means that sampling may not be required—problems of sampling may also disappear.⁷

Computer-assisted analysis of political texts has, moreover, captured the attention and imagination of sociologists, social psychologists, market researchers,⁸ and notably, political scientists (Gabel and Huber 2000; Laver and Garry 2000; Garson 2002; Laver and Benoit 2002; Laver, Benoit et al. 2002). The method has received well-deserved praise: “The ability to analyze vast amounts of text quickly and cheaply has the potential to revolutionize the study of politics” (Laver, Benoit et al. 2002, 3).

ii. Alceste

Alceste relies upon co-occurrence analysis, which is the statistical analysis of frequent word pairs in a text corpus. Alceste was developed by Max Reinert (Reinert 1983; Reinert 1998) and was originally used in the humanities (Reinert 1993), although its use has recently spread to the social sciences (Noel-Jorand, Reinert et al. 1995; Lahlou 1996; Allum 1998; Lahlou 1998; Wagner and Kronberger forthcoming) and to political science (Brugidou 1998; Brugidou 2000; Bailey and Schonhardt-Bailey 2005; Schonhardt-Bailey 2005; Schonhardt-Bailey 2006). It has been described as a “methodology” insofar as it “integrates a multitude of highly sophisticated statistical methods into an organic whole that perfectly suits its aim of discourse analysis” (Kronberger and Wagner 2000, 306).⁹ More simply, it may be described as a marriage of textual and statistical analysis (Popping 2004).

Because Alceste is automatic (that is, the categories are generated by the program, not by the researcher), it is different from other qualitative software that supports manual content analysis—e.g., Atlas.ti or Nudist (Barry 1998). Similar to TextQuest, Alceste facilitates quantitative analysis, following in the tradition of Iker (Iker 1974; Iker and Klein 1974), and more recently, (Miller 1997) and others (Hogenraad, Bestgen et al. 1995). In short, a variety of packages are on offer for computer-assisted content analysis. While other programs are useful for some purposes, Alceste is better suited for an analysis of legislative debates for three reasons. First, following minimal editing, the text is ready for analysis. Second, Alceste proposes classes (or themes) based on word lists and characteristic phrases. Both key words and sentences are,

moreover, ranked in terms of their statistical significance, and both can be traced back to the original text so that we may evaluate their context. Third, the technique generates correspondence analysis so that the speaker (and tags associated with speakers) may be mapped onto the same policy space as the identified classes or themes.¹⁰ The value of Alceste will be illustrated more clearly in the reporting of the results.

There are two preconditions for good results with Alceste: (1) the textual data must be coherent (that is, it must focus on one topic); and (2) the text must be large enough for the statistical output to be relevant (with a minimum of 10,000 words). The software is particularly adept at analyzing naturally occurring (or non-reactive) textual data (Kronberger 2004). The debates from Table 1 fit these preconditions precisely: the speeches all relate to aspects of abortion, the total word count is 257,999, and the textual data are non-reactive.

Alceste determines word distribution patterns within a text, with the objective being to obtain a primary statistical classification of simple statements (or “contextual units”)¹¹ in order to reveal the most characteristic words, which in turn can be distinguished as word classes that represent different forms of discourse concerning the topic of the text.¹² Following an iterative process, the descending hierarchical classification method decomposes the classes until a predetermined number of iterations fails to result in further divisions. The result is a hierarchy of classes, which may be schematized as a tree diagram (e.g., Figure 2, discussed below).

V. RESULTS OF ANALYSIS OF SENATE DEBATES

a. Identifying the Themes

Table 3 provides a summary of the basic statistics from Alceste. The total word count for the text file is 257,999 and of these, 107,065 were unique words that were analyzed by the program.¹³ The passive variables¹⁴ (also referred to as tagged indicators) define characteristics of each speech or “case” (described above), and these include the senator’s rank, party affiliation, final vote on the bill and so on. In total, there were 59 unique tags.

[Table 3 – About here]

The “Initial Context Unit”, or ICU, is essentially the sampling unit—i.e., a pre-existing division of the text and is specified by the user. For simplicity, I have referred to ICUs as cases, or the speeches of senators, and we can see that there were 479 speeches on the bill over the period from March 2003 to October 2003. The “Elementary Context Unit”, or ECU, is a “gauged sentence”, which the program automatically constructs based upon word length and punctuation in the text.¹⁵ Using the presence or absence of words in each ECU, the program calculates matrices on which to build the classification process. (Examples of ECUs representative of each class will be given below.) The program conducts two preliminary analyses, each using slightly different lengths for the contextual unit.¹⁶ It then opts for the length that allows the greater proportion of ECUs to be successfully classified, relative to the total available. From Table 3 we can see that 4907 ECUs were classified, equating to 78% of the ECUs retained for analysis.

The final two rows in Table 3 indicate the number of classes identified and the size of each class (as measured by the percentage of the total ECUs classified within each). In total, four classes are identified in the Senate debates on the Partial-birth Abortion Ban bill. The labels for each class (e.g., *Choice*, *Rights and Morality*, and so on) are not, however, automatically given by the program.

The output provides the researcher with a number of different tools for conceptualizing the content of classes. Of the many tools, two are particularly useful—characteristic words and characteristic ECUs.¹⁷ The most characteristic function words for each class, along with their χ^2 statistical significance (with the minimum chi-squared value for selection set at 16.36 for this analysis, with one degree of freedom¹⁸), provide an indication of the theme or frame of argument that unifies a class. The most characteristic words for each class are those with the highest χ^2 values. Words ending with "+" indicate that these are reduced forms (e.g., want+ may refer to want, wanted, or wants).

The top most representative words (and χ^2 values) for Class 1 are *people+* (335), *right+* (194), *think* (188), *country* (175), *we* (140), *want+* (131), *I* (128), *say* (102), *society*, (96) and *what* (94). While these words provide an initial impression of the theme of the class—i.e., what "we" or "I" think is "right" for "people", "society", or the "country"—a scan through the representative ECUs is more informative. The top 20 ECUs for this class are fairly evenly divided between the opponents and the supporters of the bill, with each constructing his/her argument around the basic tension between a woman's "right to choose" and the "morality" of abortion. The focus of this class is less on the specifics of the D & X procedure and more on underlying conflict of views on abortion in general (and in this sense, the class forms what might be construed in regression terms as the constant or the intercept). ECUs that are typical of the arguments made by opponents of the bill highlight the importance of a woman's choice (χ^2 values are in brackets, with one degree of freedom, and the # indicates representative words of class 1 within the each ECU):

(33) That is what #Roe was, a very #balanced #decision. It #says: if you #want to #go through with this pregnancy, #absolutely that is your #right, but if you do not, in the #early stages it #says to #women: we #respect you enough, we #give you that #dignity; we #trust you enough to #make that #decision. (Barbara Boxer)

(24) It is the Republican leadership that repeatedly #wanted to restrict a woman's #right to #choose. It is the Republican leadership that #says the language of #Roe v. #Wade is #extreme, and that every woman in #America #ought to #understand that, #especially #young #women whose #lives are #ahead of them, who have grown #up with more #freedom, ... (Tom Harkin)

ECUs that are representative of the bill's proponents (and in particular, the bill's sponsor, Sen. Rick Santorum) focus on the imperative of elected officials to enact policies that are, in their view, "moral":

(23) This is an #evil in our midst. One of the #great #things I #believe about #America and about my colleagues is when they #see #evil, they have the #courage to #stand #up and #fight it. (Rick Santorum)

(24) Some #people have #come #up to me for #years and #said: you don't have the #right to #make this #moral #decision. My response is: #well, if I, as your #elected representative, don't have the #right, what #gives the #right to nine unelected #judges to #make this #decision for you? (Rick Santorum)

The tags for each speech (senator's name, party, vote, and so on) provide insight as to which tagged indicators were highly associated with particular themes. These tags obtain statistical significance according to their χ^2 value (with 1 degree of freedom): over 3.84 for 10%; over 6.63 for 5%; and over 10.8 for 1%. For Class 1, Senators Brownback, Harkin and Clinton are highly significant (with χ^2 values of 78, 41 and 36, respectively), and the "statement" tag—which signifies that senators crafted their own arguments rather than relying on printed material from others—obtains a value of 235.

For Class 2, ten of the top fifteen most representative words are *medical+* (457), *health+* (454), *court+* (335), *necessary* (320), *abortion+* (286), *except+* (263), *viability* (261), *supreme* (244), *procedure* (226), and *unconstitutional* (201), suggesting a theme centered around the issue of whether or not a bill on an abortion procedure that lacks an exception for the health of the woman is constitutional (particularly in the wake of the 2000 *Stenberg v. Carhart* ruling). All but one of the top 20 ECUs are from opponents of the bill, who essentially argue that the bill is no different from the previous Nebraska law, and consequently can be expected to be ruled unconstitutional by the Supreme Court. (Notably, opponents tend to rely extensively and repeatedly on letters and other printed material to make their arguments on constitutionality and thus some ECUs appear in duplicate or triplicate, reflecting the repetitious nature of senators' reliance on material from experts to argue on constitutionality.):

(39) . . . #Carhart that a #Nebraska #state #law that #bans #certain #abortion #procedures is #unconstitutional. The #Supreme #Court #ruled it was #unconstitutional for two #reasons. First, it did not #include an #exception for a #woman's #health. #Second, it does not #clearly #define the #procedure it aims to #prohibit and would #ban other #procedures, sometimes #used early in pregnancy. (Barbara Mikulski)

(37) . . . #furthermore, the #current #ban #fails to #meet the #provisions #set #forth by the #Supreme #Court in #Stenberg v. #Carhart, a #ruling that overturned a #Nebraska #statute #banning #abortion because it #contained no #life and #health #exception for the #mother. (Barbara Boxer)

One Republican senator who voted with the Democrats against the ban (and who, given Poole's ideological ranking of 51, could be described as a weak Republican) is Susan Collins. As a representative ECU for the constitutional argument, her statement provides a good example of a moderate Republican who opposes all late-term abortions, but nonetheless remains committed to the Supreme Court rulings requiring the medical exception:

(32) #Let me be #clear from the outset that I am strongly #opposed not just to #partial #birth #abortions, but to all late #term #abortions. I agree they should be #banned. Such a #ban, however, must have an #exception for those #rare #cases when it is #necessary to #save the #life of the #woman or to #protect her #physical #health from #grievous harm. (Susan Collins)

Amidst the top 20 representative ECUs for this class, only one was from a Republican supporter of the bill, who reiterated the lack of medical necessity for the procedure and argued that it was unambiguous in banning just D & X (and could not be construed as banning other procedures, e.g., D & E):

(30) . . . is never #necessary to #protect the #health of the #mother. #Let me #repeat, the #carefully drafted #definition #used in S.3 for #partial #birth #abortion cannot be construed to #include any #abortion #procedure other than the D and X #procedure. (Jim Bunning)

Highly significant tags for class 2 include Senators Feinstein, Mikulski and Cantwell (with χ^2 values of 149, 50, and 38, respectively). Other statistically significant tags for this class include (a) senators voting "nay" on the final vote, (b) Democratic senators, and (c) the tendency to rely on outside printed material (with χ^2 values of 15, 8, and 21, respectively).

For Class 3, ten of the top fifteen words (and χ^2 values) are *deliver+* (533), *baby* (480), *brain+* (366), *baby'+* (287), *head+* (256), *skull+* (242), *cervix* (234), *labor* (232), *scissor+* (230), and *dilat+* (203). These characteristic words paint a pretty clear picture of the content of the class, namely descriptions of the D & X procedure itself. The ECUs refine our understanding of this class by suggesting that while senators in favour of the ban described the gory details of the procedure and provided individual stories for an emotive punch, senators against the ban similarly invoked detailed stories of women in later stages of pregnancies who resorted to abortions rather than risk serious medical complications for themselves or when the fetuses were seriously deformed.

Examples of representative ECUs from opponents of the bill include the following:

(69) Vicki talked about having two children and a #third #child on the way. Here she was, late in her #pregnancy. She #described the #pregnancy as disgustingly #normal. At 32 #weeks in the #pregnancy, 8 #months #into the #pregnancy, she went in for an #ultrasound and #discovered the #little #boy she was #carrying had at least 9/ #major #anomalies, #including a #fluid #filled cranium with no #brain #tissue at all, compacted, . . . (Richard Durbin)

(54) "My #doctor sent me to #several #specialists, #including a #perinatologist, a #pediatric radiologist, and a #geneticist in a #desperate attempt to find a way to save her. But everyone agreed, she would not #survive #outside of my #body. They also #feared that as the #pregnancy #progressed, before I went #into #labor, she would #probably #die from the #increased compression in her #brain." (Barbara Boxer)

Notably, as with the repeated reliance on evidence from medical experts, senators—particularly Barbara Boxer—tended to read or refer to these personal stories several times during the course of the debates on the bill. The ECUs above is one such example, but Boxer also repeatedly called upon a letter from the American College of Obstetricians and Gynaecologists to debate the merits of the procedure:

(53) This procedure has been #described as containing all of the #following four #elements: 1. #deliberate #dilatation of the #cervix, #usually over a sequence of #days; 2. instrumental conversion of the #fetus to a footling #breech; 3. #breech #extraction of the #body excepting the #head; and 4. partial #evacuation of the intracranial #contents of a #living #fetus to effect #vaginal #delivery of a #dead but otherwise #intact #fetus. (Barbara Boxer)

Proponents of the bill described the same procedure, but more provocatively and sometimes substituting “baby” for “fetus” (similar to Boxer, DeWine repeats his statement during the debates, but as his own description rather than from outside sources) :

(65) . . . and just a few #inches from a #completed birth, the physician uses an #instrument/ such as a #pair of #scissors to #tear or #perforate the #skull. The physician will then either/ crush the #skull or will use a #vacuum to #remove the #brain and other intracranial/ #contents from the #fetal #skull, #collapse the #fetus’s #head and #pull the #fetus from the/ #uterus. (George Voinovich)

(65) The #doctor #opened up the #scissors, #stuck a #high powered #suction #tube #into the #opening, #sucked the #baby’s #brains #out. Now the #baby went #completely limp. He #cut the #umbilical #cord and #delivered the #placenta. He threw the #baby in a pan along with the #placenta and the #instruments he had just used. (Mike DeWine)

The single senator with a highly significant χ^2 value is Barbara Boxer, with 66. Other significant tags for individual senators include a mixture of strong opponents to the bill (Corzine - 27, Stabenow - 11, and Clinton - 5) and strong supporters (Santorum - 4, Frist - 7, Allard - 7 and Ensign - 5). The very large χ^2 value of 512 for the “printed material” tag signifies that senators were highly reliant upon letters and statements from outsiders (much of it describing personal experiences) for the content of this class. Finally, while small in comparison the Republican party tag is nonetheless significant at 10% with a χ^2 value of 4.

For Class 4, ten of the top fifteen most representative words (and χ^2 values) are *senate+* (687), *president+* (682), *house+* (432), *floor* (423), *vote+* (415), *yield+* (401), *committee+* (395), *senator+* (307), *motion+* (238), and *amend+* (200). This thematic class focuses on the process of the legislation, but particularly two quite contentious aspects of the bill: first, its failure to be considered by the Senate Judiciary Committee, and second, the attempt by the House and the subsequent success of the conference to exclude the Senate-approved Harkin Amendment (supporting *Roe v. Wade*).

In March, Democrats rallied around Boxer's motion to commit, but so did a few Republicans, notably, Patrick Leahy (who is one of Poole's "errors" in having been predicted to vote against, but voted for the final bill):

(68) #Mr. #President, when #Senator Santorum #introduced S.3 on February 14, the #leadership immediately placed the #bill on the #Senate legislative calendar, #bypassing #committee #consideration of the #bill. I #rise #today to #support the #motion to #commit the #bill for #consideration by the #Judiciary #Committee. #Senators deserve the #benefit of full #consideration and vigorous #debate before they are #asked to cast a #vote on such a significant and complicated #issue. (Patrick Leahy)

Following on from this ECU in the text, Leahy argued that since the last consideration of this issue by the Judiciary Committee (in 1997), "there has been judicial review of similar legislation, including a Supreme Court decision, that should be fully vetted by the Judiciary Committee. The committee referral process is there for a reason and we ought to respect it."

Santorum defended the Senate leadership's decision to bypass committee consideration by arguing on March 10th that the bill was "unfinished business from last year" and that "infirmities in the Nebraska statute" that resulted in the Supreme Court ruling had been addressed and remedied in the current bill:

(43) ... it is identical to the #bill that is on the #floor #today. We #asked for its #consideration #last year. I came to the #floor on a #couple of #occasions and #asked for #unanimous #consent to #bring this #bill forward. (Rick Santorum)

In his view, the bill had made clear which procedure was to be banned and had provided a stronger case against the need for a health exception. Congress had a "right", moreover, to deferential treatment from the Supreme Court because of its ability to provide a "more exhaustive study" through hearings and deliberations. In short, the Court had made "a horrible decision" in the Nebraska case and he saw this bill as a means to rectify that error.

The second aspect of this *Legislative Procedure* class reflects the frustration of the bill's opponents to the attempt by the House to strip away the Senate-approved Harkin amendment, which reaffirmed support for *Roe v. Wade* :

(74) #Mr. #President, I #express my cooperation, #sense of solidarity with my #colleague from #California, #Mrs. #Boxer, and others under very unusual procedural circumstances. In my almost 24 years in the #Senate, I cannot recall ever #rising to #speak on a #motion to #disagree with a #House #amendment on a #Senate #bill and #request a #conference. (Christopher Dodd)

The Senate voted 93 - 0 on September 17 to disagree with the House amendment, and a conference was arranged, with Hatch, DeWine, Santorum, Feinstein and Boxer appointed as conferees (and the Speaker later added Chabot and Lofgren). To the anger of many Senate Democrats, the conference version of the bill excluded any

support for *Roe v. Wade*. The Rules Committee subsequently waived points of order that were raised against the report, and thus the final bill no longer contained the Harkin amendment supporting *Roe v. Wade*.

One of the top representative ECUs from this class (by Boxer) flags this dispute over the Harkin amendment as core to this class:

(44) There we are. We are sitting in a #conference #committee. Here is where we are. The #House and the #Senate #passed different #bills. What was different about our #bill, S.3? #Senator #Harkin put in #language, and the #Senate #voted on it #twice-- #twice: once was #unanimous, once was a #majority to keep *roe v. . . .* (Barbara Boxer)

Using this ECU as an indicator of key sections within the debates in which senators battled to shape the choices available in the final vote, it is worth examining more fully Boxer's disparaging remarks about the conference committee (which follow on from the above ECU):

So I come to the conference committee ready, along with Senator Feinstein, and other Congress people, to debate this issue. After all, my friend says here, we don't have any problem with *Roe*. This has nothing to do with *Roe*. Fine. Let's keep it in the bill, folks, a sense of the Senate that *Roe v. Wade* should not be overturned. The Senate voted for it twice. Let me tell you how long it took them to kick that amendment out. It was about 5 minutes. Not even a real discussion, not even a discussion about an amendment that passed this Senate twice

And earlier in this same October 21 speech, Boxer appears to realize more fully (and rather belatedly, if taken at face value) the underlying intent of the bill's proponents as an attempt to divide the opposition by them to defend a "cruel" procedure:

a case of wanting to keep an issue alive out there to make people believe those on the other side are cruel, whether we are mothers or grandmothers or aunts. That is what it is about. It took me a while to figure that out. But once I saw this bill come back to us in this form—clearly unconstitutional, clearly without a health exception, clearly vague, and all those who have discussed this with me tell me it is clearly going to be declared unconstitutional because it is practically identical to other bills that have been declared unconstitutional—I saw what this is about. This is about politics.

The single senator with a highly significant χ^2 value for class 4 is Harry Reid, with 76. In 2003 Reid was the Democratic whip but in 2004 became the Senate Democratic Leader, and thus his prominence in speaking to this *Legislative Procedure* class is not surprising. More intriguing is that Reid is an error in NOMINATE—i.e., incorrectly predicted to vote against the bill. A number of other individual senators are significant for this class (Lautenberg – 25; Voinovich – 17; Feingold – 14), but more notably, other significant tags are those who supported the final bill ($\chi^2 = 6$) and the obvious reliance on statements rather than printed material when arguing on *Legislative Procedure* ($\chi^2 = 117$).

b. Linkages Between the Classes

We have, thus far, gained some understanding of the main themes in the Senate debates on the Partial-birth Abortion Ban Act, but ultimately we aim to discover how these themes evolve into a final vote along a single ideological dimension. Alceste provides us with two ways to gauge the relationships between the classes: tree graphs and correspondence analysis.

[Figure 2 – about here]

i. Tree Graph

Figure 2 is a tree graph of the thematic classes, schematized according to Alceste’s descending hierarchical classification procedure (the percentage weight given to each class by the analysis is indicated in parentheses). Beginning at the “trunk” of the tree (from right to left—that is, from least related classes to most related classes), we can see that the speeches contain two basic forms of argumentation. The first (Class 3 – *Personal Experiences: a woman’s health v. fetal life*) highlights the highly emotive and graphically disturbing descriptions of the D & X procedure itself and of women who underwent late-term abortions, as given by senators in personal histories. The verbiage of this class is evocative, graphic, personal and undeniably disturbing, and thus is distinct from the other themes of the Senate debates on this bill. Class 2 is the second most distinct class in terms of word content, with the thrust of senators’ arguments on this theme levelled against the constitutionality of an abortion bill that contained no exception for a woman’s health. Finally, classes 1 and 4 can be said to be the least distinct of the four, which is not surprising since senators’ more general remarks about abortion (class 1) and the central role for *Roe v. Wade* in the manoeuvrings of the legislative process (class 4) provide plenty of scope for overlapping verbiage.

With respect to the distribution of content among the classes, if the more general issues surrounding choice, rights and morality (class 1) can be said to apply to virtually any legislation on abortion (and thus be interpreted in regression language as the intercept), then we can surmise that over one-third of senators’ time and energy in debating such legislation is non-specific to the particular bill under consideration. Conversely, about two-thirds of the verbal conflict in the 2003 bill appears to be unique to that bill—i.e., the specific procedural measures, the constitutionality of the absent health exception, and the gruesome medical details of the procedure are all unique to the partial-birth abortion ban as defined in the 2003 bill. Hence, to ignore the content of the debates by focusing solely on the final roll call vote is to miss much of what concerned senators about this particular bill. To see this more clearly, we turn to Figure 3, in which the results from Alceste’s classification are represented in correspondence space.

[Figures 3 and 4 – about here]

ii. Correspondence Analysis

The program cross-tabulates classes and words in their root form in order to create a matrix that can then be subjected to factor correspondence analysis (Greenacre 1993).¹⁹ In this way, we obtain a spatial representation of the relations between the classes, where distance reflects the degree of association.²⁰ Correspondence analysis aims to account for a maximum amount of association²¹ along the first (horizontal)

axis. The second (vertical) axis seeks to account for a maximum of the remaining association, and so on. Hence, the total association is divided into components along principal axes. The resulting map provides a means for transforming numerical information into pictorial form. It provides a framework for the user to formulate her own interpretations, rather than providing clear-cut conclusions.²²

Figure 3 presents a map of the correspondence analysis of the classes and tags for the Senate debates on the bill while Figure 4 provides the correspondence analysis of the representative words only. Figure 4 illustrates the spread and relative positions of the classes, with the shaded areas illustrating the spread and the white dots indicating the center point of each class (additional data points are listed below), and is provided here primarily for illustrative purposes. Figure 3 is more revealing in that it superimposes classes and tags on a single graph—where distance between a class and a tag reflects the degree of association—and thus it enables us to trace the path from multidimensionality in debating to unidimensionality in voting.

Beneath the correspondence map are the percentage associations for each factor, with the first accounting for 44.4% and the second accounting for an additional 32.9%. Hence, a two-dimensional correspondence space accounts for 77.3% of the total variation in the corpus.²³ Yet, “dimensionality” in this context requires careful dissection and analysis before a coherent picture may be obtained.

From Figure 3, we can observe first, that the horizontal axis mirrors the cleavage between the *Personal Experiences* class and the other three classes that we observed in the tree map (Figure 2)—that is, the *Personal Experiences* class falls at the far left while the other three fall to the right of the mid-point. The “Republican” tag falls in the same quadrant as the *Personal Experiences* class, which suggests that a good number of Republican senators relied on this emotive class in their debates on the bill. Second, the “nay” and “yea” tags at the top and bottom of the graph appear to reflect pole positions of the bill’s opponents and proponents. Very near the “nay” tag is the “Democrat” tag, and both are in close proximity to the *Constitutionality* class. This suggests that opponents of the bill (of which most were Democrats) tended to focus on the issue of whether the bill could be judged as constitutional without a health exception.

These observations suggest two broad lines of conflict in the debates over the bill. The first, and primary (horizontal) conflict, lends empirical support to the argument that the bill’s supporters sought to divide D & X from other abortion procedures by focusing on its more gory details. We thus see Santorum (as indicated by Poole’s rank order [Table 2]—number 93.5b), as sponsor, and other supporters (Ensign, 96.5a; Nickles, 99; Enzi, 90) clustered in the bottom left cell, near the *Personal Experiences* class. Indeed, on March 11, Enzi clearly outlines this strategy (after revealing his own personal story of the birth of his three month premature daughter, and noting her gestational age at birth as equivalent to that of fetuses considered for some late-term abortions). He maintains that the issue of the health exception is a side argument; the real motive of the bill is to force moderate pro-choice senators into taking a more extreme defensive posture by leaving them with no option but to endorse what is framed as an “inhumane” abortion procedure:

This is about life and death, and that is why the bill speaks specifically to life. What we tried to do in framing this argument was to come up with the most definite situation when those who are in favor of abortion are separated from those opposed to abortion. It is pretty much that simple. There will be some efforts to try to bring it back a little more to the middle so people can put a little bit of a spin on their decision, but that is what this is about. That is why a procedure was picked that is not taught any longer; a procedure was picked that the American Medical Association said is not needed anymore. That makes it pretty clear. . . . You can add all the qualifications you want to it, but if you cannot oppose partial-birth abortion, then you must be in favor of abortion.

The strategy could hardly be clearer: proponents "picked" the D & X procedure in order to frame abortion in starker, more unacceptable terms. Arguably, this strategy was further enhanced by a number of (mostly women Democrat) opponents to the bill who joined this line of argument. They countered the gruesome personal stories of their Republican colleagues with equally gruesome and emotive stories of women who experienced late term abortions under difficult and sad circumstances (e.g., Boxer, 1; Stabenow, 26.0b; Clinton, 21.5b), although this left them with little means to establish the necessity of the D & X procedure over the more standard D & E procedure.²⁴

In short, this primary dimension can be interpreted as an attempt by the bill's supporters to frame the procedure as uniquely different from other abortion procedures (that is, morally unacceptable), and thereby leave "pro-choice, but" senators with no middle ground upon which to stand. Their strategy was enhanced by drawing into this line of argument a number of key Democrats.

The second line of conflict is situated on the vertical axis, and it is this cleavage that appears to underpin the ultimate dimensionality of the roll call vote (from Figure 1), as it pits the opponents of the bill (mostly Democrats) against its proponents (mostly Republicans). The content of this dimension appears to be the controversy surrounding the constitutionality of the omission of the health exception, as this thematic class is situated at the very top of the spatial map. Yet, just as with the *Personal Experiences* class, a clash of opinions can be seen in the representation of senators from both sides of the bill. (As one might anticipate, there is also an overrepresentation of members of the Judiciary Committee (e.g., Feinstein, 29; Durbin, 16; Kennedy, 2; Kyl, 100; Grassley, 70.5a; Feingold, 17.5b; DeWine, 54), who presumably felt compelled to speak to issues of constitutionality.)

The overall strategy of the pro-ban senators appears to have been one of forcing "pro choice, but" members of Congress to wage a battle on two fronts—one, to defend a health exception which was said (by the pro-ban senators) to be medically unwarranted (and thereby not germane on constitutional grounds), and in doing so, two, to defend an abortion procedure which was framed by the pro-ban senators in a particularly gruesome way. Proponents of the bill thus sought to shift the abortion conflict away from the traditional issue of *Choice, Rights and Morality* to two particular aspects of abortion on which pro-lifers perceived a more certain victory—recasting D & X as infanticide and building a case against the health exception. By eliminating support for *Roe v. Wade* in the process (with the elimination of the Harkin

amendment), proponents sought to further dissipate any middle ground in the abortion conflict, thereby intensifying the polarization on this issue within Congress.

VI. DISCUSSION AND CONCLUSION

By focusing on the single issue of abortion, this paper has sought to gain some understanding of the link between a multidimensional issue space and a low-dimensional evaluative space. Accepting that a single issue—such as abortion—is initially multidimensional, the question is, how does this become constrained onto a single dimensional space, as reflected by the final roll call vote? The case of the Partial-birth Abortion Ban Act reveals that over three-fourths of the content of the Senate debates on this bill can be captured in a two-dimensional correspondence space.²⁵ Surprisingly, the primary (horizontal) dimension in this discourse does not reflect the ultimate divide in the roll call vote; rather, the split between the “yeas” and “nays” is captured in the second dimension. A first dimension that does not reflect the final vote would appear, at first glance, to be an anomaly. Why did senators expend so much effort debating an aspect of the abortion ban that did not appear to form the core of their ultimate voting decision? Put another way, why did senators not spend more time debating the issue of the constitutionality of the health exception, if that indeed is what appears to have formed the basis of conflict in the final vote?

The answer rests with an understanding of the strategy of the proponents of the bill, which was to wage a two-pronged battle. Passage of the bill in Congress was never in dispute (given the Republican majority, previous successful votes on similar legislation and an assured signature of President Bush). The larger battle was directed at audiences outside of Congress—namely, the American public and the Supreme Court. By framing a specific type of abortion as morally unacceptable and by laying down the gauntlet to the Supreme Court (see the Appendix), Santorum and other sponsors sought to weaken the more general case for abortion. Omitting both the exception for a woman’s health and any endorsement of *Roe v. Wade* were clear signals of the bill’s attempt to further polarize the abortion issue. The reason that the bill’s supporters latched onto the D & X procedure was that it enabled them to frame abortion in a particularly negative and emotive way, and thereby gain leverage in a larger anti-abortion struggle. Within the legislative arena, by framing the D & X procedure as infanticide, proponents gained political points by forcing “pro-choice, but” senators into a difficult defensive position.

But if the strategy of the proponents was to wage battles on both emotive and legal fronts, we are still left with two basic dimensions of conflict. How did the legal front become the basis for the final vote? The simple answer is that the bulk of the opponents of the bill chose to devote more time to arguing the constitutional case than to defending a procedure that had been effectively framed in the bill as infanticide. This is not to say that opponents ignored the more difficult challenge of the infanticide frame: indeed, it seemed to have been left to a small number of women senators (who as Boxer reminded her audience, were empathetic “mothers and grandmothers”) to refute the framing of D & X as “inhumane”. On average, however, opponents of the bill (mostly Democrats) shied away from the personal and emotive aspects in favour of legal and constitutional aspects. In short, while proponents of the bill defined the conflict in predominantly two dimensions, most of the bill’s

opponents opted to fight the (stronger and more objective) constitutional argument, thereby defining the content of the final vote.

More broadly, this case illustrates the tendency of strategic legislative actors to deploy various tools to gain victory—here, most conspicuously the rhetoric used to frame the D & X procedure as infanticide. This helped to polarize positions on abortion even further by denying a middle ground on a particular abortion procedure. By analyzing the Senate debates on this bill, we can dissect the dimensionality of this issue as it moved from floor debates to final vote. We can unpick the content of the final vote, and in so doing, arrive at a clearer understanding of the strategic behaviour of both sides of the bill. While this paper does not dispute that the final vote was unidimensional, ignoring the path to that single dimension misses the underlying two-dimensional conflict that defined the bill.

APPENDIX: Controversy Surrounding the Partial-birth Abortion Ban Act of 2003

The Act defines a "partial-birth abortion" as an abortion in which the "physician deliberately and intentionally vaginally delivers a living fetus until either the entire baby's head is outside the body of the mother, or any part of the baby's trunk past the navel is outside the body of the mother and only the head remains inside the womb, for the purpose of performing an overt act (usually the puncturing of the back of the child's skull and removing the baby's brains) that the person knows will kill the partially delivered infant" (2003: sec 2 (1)).

The Act then imposes severe penalties for physicians who breach the ban, including fines and incarceration (up to 2 years) (2003: sec. 3 (a)). It includes an exception to the prohibition of partial-birth abortion to save the woman's life but does not include any exception for the woman's health. Failure to include this exception ostensibly runs foul of the Supreme Court rulings; however, Congress states that "the gruesome and inhumane procedure . . . is never medically necessary" and that it "is not only unnecessary to preserve the health of the mother, but in fact poses serious risks to the long-term health of women and in some circumstances, their lives." (2003: sec. 2 (1, 2)).

The Act recognizes the Supreme Court ruling on *Stenberg v. Carhart* in which the omission of an exception for the health of the woman would, using the phrase from the Court, place an "undue burden" on women who sought abortions. Yet, it remarks that in making the 2000 ruling, the Supreme Court accepted the lower court's factual findings that the procedure was "statistically and medically safe" (2003: sec. 2 (4)). Following the normal standard of appellate review, the Supreme Court did not consider

...substantial evidence presented at the Stenberg trial and overwhelming evidence presented and compiled at extensive congressional hearings, much of which was compiled after the district court hearing in Stenberg, and thus not included in the Stenberg trial record, [which] demonstrates that a partial-birth abortion is never necessary to preserve the health of a woman, poses significant health risks to a woman upon whom the procedure is performed and is outside the standard of medical care. (2003: sec. 2 (5))

As a result, the Act remarks that the Supreme Court accepted "the very questionable findings issued by the district court judge—the effect of which was to render null and void the reasoned factual findings and policy determinations of the United States Congress and at least 27 State legislatures" (2003: sec. 2 (7)).

The Act clearly lays down the gauntlet to the Supreme Court. It states that while the Supreme Court may be forced to accept the district court's findings, Congress is not. Rather, Congress is "entitled to reach its own factual findings—*findings that the Supreme Court accords great deference*—and to enact legislation based upon these findings so long as it seeks to pursue a legitimate interest that is within the scope of the Constitution, and draws reasonable inferences based upon substantial evidence" (italics added) (2003: sec. 2 (8)). It lists several Supreme Court rulings in which the

Court deferred to congressional fact findings, and quotes a 1994 decision (*Turner Broadcasting System, Inc. v. Federal Communications Commission*) in which the Court stated that “(w)e owe Congress’ findings deference in part because the institution ‘is far better equipped than the judiciary to “amass and evaluate the vast amounts of data” bearing upon’ legislative questions” (2003: sec. 2 (12)). It gives arguments from testimony received in legislative hearings from the 104th, 105th, 107th and 108th Congresses²⁶ which are deemed to provide justification for the congressional declaration that the health exception is unnecessary because the procedure is never medically warranted. Among the many arguments given, one of particular note is that “a prominent medical association” (i.e., the American Medical Association) has determined that the procedure is

... ‘ethically different from other destructive abortion techniques because the fetus, normally twenty weeks or longer in gestation, is killed outside of the womb’. According to this medical association, the ‘partial birth’ gives the fetus an autonomy which separates it from the right of the woman to choose treatments for her body. (2003: sec. 2 (14 J))

This autonomy, the Act maintains, affords the government an interest in protecting the life of the “partially-born child”, as it is “a child that is in the process, in fact mere inches away from, becoming a ‘person’” (2003: sec. 2 (14 I)).

The strikingly inflammatory language of the legislation (aside from the contested title of the bill, this includes repeated references to “baby” as opposed to “fetus” and “mother” over “woman”, and emotive language like “kill” and “inhumane”) yielded immediate consequences in the courts. Less than one hour after the ban became law, Richard Kopf, Chief Judge of the U.S. District Court for Nebraska, issued a limited²⁷ temporary restraining order against the ban, arguing that it lacks an exception if the woman’s health is at risk. The act has subsequently been ruled unconstitutional in other federal district courts, including San Francisco and New York. In September 2004, the four doctors who had challenged the Nebraska state law in *Stenberg v. Carhart* disputed the congressional findings, arguing that the procedure is safe under some conditions and could avoid complications to the woman (e.g., arising from bone fragments from the dissembled fetus in the uterus). In *Carhart v. Ashcroft* (2004), Judge Richard Kopf issued a lengthy opinion saying that the four doctors had demonstrated that the congressional findings were “unreasonable” and that the Act was unconstitutional on the grounds that it fails to provide a health exception for women. In July 2005, the 8th Circuit Court in St. Louis upheld the decision of Kopf in *Carhart v. Ashcroft*, whereupon the Bush Administration appealed (*Gonzales v. Carhart*, No. 05-380). On February 21st 2006, the Supreme Court agreed to hear this appeal in the autumn.

- (2003). Partial-birth Abortion Ban Act of 2003. 18 USC. 1531.
- Abaluck, J. (2003). Partial Truths: The Partial-birth Abortion Ban Violates Women's Rights, Perspective, Harvard-Radcliffe's Liberal Monthly
<http://www.digitas.harvard.edu/~perspy/issues/2003/nov/partial.html>. 2006.
- Adams, G. D. (1997). "Abortion: Evidence of an Issue Evolution." American Journal of Political Science **41**(3): 718-737.
- Aldrich, J. H. (1995). Why Parties? The Origin and Transformation of Party Politics in America. Chicago, University of Chicago Press.
- Allum, N. C. (1998). A Social Representations Approach to the Comparison of Three Textual Corpora Using Alceste. London, London School of Economics and Political Science, MSc Dissertation.
- Bailey, A. and C. Schonhardt-Bailey (2005). Central Bankers and Big Ideas: Independence, Credibility, Uncertainty and Measurement in FOMC Transcripts. European Public Choice Society Annual Meeting, Durham (UK).
- Barry, C. A. (1998). "Choosing Qualitative Data Analysis Software: Atlas/ti and Nudist Compared." Sociological Research Online
<http://www.socresonline.org.uk/socresonline/3/3/4.html> **3**(3): 1-16.
- Bauer, M. (2000). Classical Content Analysis: A Review. Qualitative Researching with Text, Image and Sound: A Practical Handbook. M. W. Bauer and G. Gaskell. London, Sage Publications: 131-151.
- Baumgartner, F. R. and B. D. Jones (1993). Agendas and Instability in American Politics. Chicago, University of Chicago Press.
- Benzecri, J. P. (1981). Pratique de l'analyse des donnees: linguistique et lexicologie. Paris, Dunod.
- Benzecri, J.-P. (1973). L'Analyse des Donnees. Tome1: La Taxinomie. Tome 2: L'Analyse des Correspondances. Paris, Dunod.
- Bertier, P. and J. M. Bouroche (1975). Analyse des donnees multidimensionnelles. Paris, Presses Universitaires de France.
- Blasius, J. and V. Thiessen (2001). "Methodological Artifacts in Measures of Political Efficacy and Trust: A Multiple Correspondence Analysis." Political Analysis **9**(1): 1-20.
- Brazill, T. J. and B. Grofman (2002). "Factor Analysis versus Multidimensional Scaling: Binary Choice Roll-Call Voting and the U.S. Supreme Court." Social Networks **24**: 201-229.
- Brugidou, M. (1998). "Epitaphs. Francois Mitterrand's Image: An Analysis of an Open Question Asked on His Death." Revue Francaise de Science Politique **48**(1).
- Brugidou, M. (2000). "The Discourse of Demands and Action in [French] Trade Union Press Editorials (1996-1998)." Revue Francaise de Science Politique **50**(6).
- Burns, G. (2005). The Moral Veto: Framing Contraception, Abortion, and Cultural Pluralism in the United States. Cambridge, Cambridge University Press.
- Carley, K. (1994). "Extracting Culture Through Textual Analysis." Poetics **22**: 291-312.
- Carmines, E. G. and J. Woods (2002). "The Role of Party Activists in the Evolution of the Abortion Issue." Political Behavior **24**(4): 361-377.
- Converse, P. E. (1964). The Nature of Belief Systems in Mass Publics. Ideology and Discontent. D. E. Apter. New York, Free Press.

- Craig, S. C., M. D. Martinez, et al. (1999). "The Structure of Political Competition: Dimensions of Candidate and Group Evaluation Revisited." Political Behavior **21**(4): 283-304.
- Diday, E., J. Lemaire, et al. (1982). Elements d'analyse des donnees. Paris, Dunod.
- Ennis, J. G. (1992). "The Social Organization of Sociological Knowledge: Modeling the Intersection of Specialties." American Sociological Review **57**(April): 259-265.
- Federation, P.-P. P. (2006). Abortion after the First Trimester: Legality of Abortion (Laws and Specific Abortion Techniques), <http://www.plannedparenthood.org/pp2/portal/>. 2006.
- Ferree, M. M., W. A. Gamson, et al. (2002). Shaping Abortion Discourse: Democracy and the Public Sphere in Germany and the United States. Cambridge, Cambridge University Press.
- Finkel, S. E. and J. G. Geer (1998). "A Spot Check: Casting Doubt on the Demobilizing Effect of Attack Advertising." American Journal of Political Science **42**(2): 573-595.
- Fiorina, M. P., S. J. Abrams, et al. (2005). Culture War? The Myth of a Polarized America. New York, Pearson Longman.
- Gabel, M. J. and J. D. Huber (2000). "Putting Parties in Their Place: Inferring Party Left-Right Ideological Positions from Party Manifestos Data." American Journal of Political Science **44**(1): 94-103.
- Garson, G. D. (2002). Researching and Teaching Political Culture through Web-Based Content Profile Analysis. Annual Meeting of the American Political Science Association.
- Greenacre, M. J. (1984). Theory and Applications of Correspondence Analysis. London, Academic Press.
- Greenacre, M. J. (1993). Correspondence Analysis in Practice. London, Academic Press.
- Greenacre, M. J. and L. G. Underhill (1982). Scaling a data matrix in low-dimensional Euclidean space. Topics in Applied Multivariate Analysis. D. M. Hawkins. Cambridge, Cambridge University Press.
- Grofman, B. and T. J. Brazill (2002). "Identifying the Median Justice on the Supreme Court Through Multidimensional Scaling: Analysis of 'Natural Courts' 1953-1991." Public Choice **112**: 55-79.
- Groseclose, T., S. D. Levitt, et al. (1999). "Comparing Interest Group Scores Across Time and Chambers: Adjusted ADA Scores for the U.S. Congress." American Political Science Review **93**(1): 33-50.
- Haskell, M. (1992). Dilation and Extraction for Late Second Trimester Abortion. National Abortion Federation Risk Management Seminar, Dallas, Texas.
- Hayashi, C. (1950). "On the quantification of qualitative data from the mathematics-statistical point of view." Annals of the Institute of Statistical Mathematics, II.
- Hill, K. Q., S. Hanna, et al. (1997). "The Liberal-Conservative Ideology of U.S. Senators: A New Measure." American Journal of Political Science **41**(4): 1395-1413.
- Hinich, M. J. and M. C. Munger (1994). Ideology and the Theory of Political Choice. Ann Arbor, University of Michigan.
- Hinich, M. J. and W. Pollard (1981). "A New Approach to the Spatial Theory of Electoral Competition." American Journal of Political Science **25**: 323-341.

- Hogenraad, R., Y. Bestgen, et al. (1995). *Terrorist Rhetoric: Texture and Archi-texture. From Information to Knowledge: Conceptual and Content Analysis by Computer*. K. Schmidt. Oxford, Intellect: 48-59.
- Hurwitz, M. S., R. J. Moiles, et al. (2001). "Distributive and Partisan Issues in Agriculture Policy in the 104th House." American Political Science Review **95**(4): 911-922.
- Iker, H. P. (1974). "An Historical Note on the Use of Word-Frequency Contingencies in Content Analysis." Computers and the Humanities **8**(1): 93-98.
- Iker, H. P. and R. H. Klein (1974). "WORDS: A Computer System for the Analysis of Content." Behavior Research Methods & Instrumentation **6**(4): 430-438.
- Jenkins-Smith, H. C., G. K. S. Clair, et al. (1991). "Explaining Change in Policy Subsystems: Analysis of Coalition Stability and Defection over Time." American Journal of Political Science **35**(4): 851-880.
- Kabanoff, B. (1996). *Computers Can Read As Well As Count: How Computer-aided Text Analysis Can Benefit Organisational Research*. Trends in Organizational Behavior. C. L. Cooper and D. M. Rousseau. Chichester, Wiley. **3**: 1-21.
- Kabanoff, B. and J. Holt (1996). "Changes in the Espoused Values of Australian Organizations 1986-1990." Journal of Organizational Behavior **17**(3): 200-219.
- Kahn, K. F. (1992). "Does Being Male Help? An Investigation of the Effects of Candidate Gender and Campaign Coverage on Evaluation of U.S. Senate Candidates." The Journal of Politics **54**(2): 497-517.
- Kronberger, N. (2004). Personal communication with the author, 24 September.
- Kronberger, N. and W. Wagner (2000). *Keywords in Context: Statistical Analysis of Text Features*. Qualitative Researching with Text, Image and Sound: A Practical Handbook. M. W. Bauer and G. Gaskell. London, Sage Publications: 299-317.
- Lahlou, L. (1996). "A method to extract social representations from linguistic corpora." Japanese Journal of Experimental Social Psychology **36**: 278-291.
- Lahlou, S. (1998). Penser manger. Paris, Presses Universitaires de France.
- Laver, M. and K. Benoit (2002). *Locating TDs in Policy Spaces: Wordscoring Dail Speeches*. Trinity College, Dublin.
- Laver, M., K. Benoit, et al. (2002). *Placing Political Parties in Policy Spaces*. Trinity College, Dublin.
- Laver, M. and J. Garry (2000). "Estimating Policy Positions from Political Texts." American Journal of Political Science **44**(3): 619-634.
- Levine, J., E. G. Carmines, et al. (1999). "The Empirical Dimensionality of Racial Stereotypes." The Public Opinion Quarterly **63**(3): 371-384.
- Maxwell, C. J. (2002). Pro-Life Activists in America: Meaning, Motivation and Direct Action. Cambridge, Cambridge University Press.
- McDonald, C. (1982). "Coding Open-Ended Answers With the Help of a Computer." Journal of the Market Research Society **24**(1): 9-27.
- McLean, I. (2001). Rational Choice and British Politics: An Analysis of Rhetoric and Manipulation From Peel to Blair. Oxford, Oxford University Press.
- Miller, M. M. (1997). "Frame Mapping and Analysis of News Coverage of Contentious Issues." Social Science Computer Review **15**(4): 367-378.
- Mohr, J. W. (1994). "Soldiers, Mothers, Tramps and Others: Discourse Roles in the 1907 New York City Charity Directory." Poetics **22**: 327-357.
- Noel-Jorand, M. C., M. Reinert, et al. (1995). "Discourse analysis and psychological adaptation to high altitude hypoxia." Stress Medicine **11**: 27-39.

- Norton, N. H. (1999). "Uncovering the Dimensionality of Gender Voting in Congress." Legislative Studies Quarterly **24**(1): 65-86.
- Oberlechner, T., T. Slunecko, et al. (2004). "Surfing the Money Tides: Understanding the Foreign Exchange Market Through Metaphors." British Journal of Social Psychology **43**: 133-156.
- Ordeshook, P. C. (1976). The Spatial Theory of Elections: A Review and a Critique. Party Identification and Beyond. I. Budge, I. Crewe and D. Farlie. New York, Wiley.
- Poole, K. (2004). 108th Senate Rank Ordering, <http://www.voteview.com/>.
- Poole, K. T. (2005). Spatial Models of Parliamentary Voting. Cambridge, Cambridge University Press.
- Poole, K. T. and H. Rosenthal (1997). Congress: A Political-Economic History of Roll Call Voting. Oxford, Oxford University Press.
- Popping, R. (2004). email correspondence with author.
- Potoski, M. and J. Talbert (2000). "The Dimensional Structure of Policy Outputs: Distributive Policy and Roll Call Voting." Political Research Quarterly **53**(4): 695-710.
- Reinert, M. (1983). "Une methode de classification descendante hierarchique: application a l'analyse lexicale par contexte." Les Cahiers de l'Analyse des Donnees **8**(2): 187-198.
- Reinert, M. (1993). "Les 'mondes lexicaux' et leur 'logique' a travers l'analyse statistique d'un corpus de recits de cauchemars." Langage et societe **66**: 5-39.
- Reinert, M. (1998). ALCESTE users' manuel (English version). Toulouse, Image.
- Riker, W. H. (1986). The Art of Manipulation. New Haven, Yale University Press.
- Ringe, N. (2005). "Policy Preference Formation in Legislative Politics: Structures, Actors, and Focal Points." American Journal of Political Science **49**(4): 731-745.
- Rohde, D. W. (1991). Parties and Leaders in the Postreform House. Chicago, University of Chicago Press.
- Saletan, W. (2004). Bearing Right: How Conservatives Won the Abortion War. Berkeley, University of California Press.
- Schattschneider, E. E. (1960). The Semisovereign People: A Realist's View of Democracy. New York, Holt, Rinehart & Winston.
- Schonhardt-Bailey, C. (2005). "Measuring Ideas More Effectively: An Analysis of Bush and Kerry's National Security Speeches." PS: Political Science and Politics **38**(3): 701-711.
- Schonhardt-Bailey, C. (2006). From the Corn Laws to Free Trade: Interests, Ideas and Institutions in Historical Perspective. Cambridge, MA, MIT Press.
- Selck, T. J. (2004). "On The Dimensionality of European Union Legislative Decision-making." Journal of Theoretical Politics **16**(2): 203-222.
- Shepsle, K. A. and B. R. Weingast, Eds. (1995). Positive Theories of Congressional Institutions. Ann Arbor, University of Michigan.
- Sinclair, B. (1995). Legislators, Leaders, and Lawmaking: The U.S. House of Representatives in the Postreform Era. Baltimore, Johns Hopkins University Press.
- Taylor, A. J. (2005). "Stanley Baldwin, Heresthetics and the Realignment of British Politics." British Journal of Political Science **35**: 429-463.
- Wagner, W. and N. Kronberger (forthcoming). Quantitative and Qualitative Cross-Cultural Comparison: Cultural Metrics. Theoretical and Methodological Advances in Cultural and Cross-Cultural Psychology. J. Straub.

Weller, S. C. and A. K. Romney (1990). Metric Scaling: Correspondence Analysis. London, Sage Publications.

¹ Notably, (Schattschneider 1960; Baumgartner and Jones 1993). See article for full list of references.

² Taylor (Taylor 2005) offers a subsequent application of heresthetics to British politics.

³ One need look no further than contemporary media coverage to sustain this assessment. However a number of recent books on abortion politics and abortion discourse in the U.S. have sought to explain the underlying conflicts between the pro-life and pro-choice camps: (Ferree, Gamson et al. 2002; Maxwell 2002; Saletan 2004; Burns 2005).

⁴ I am grateful to Keith Poole for sharing these data with me.

⁵ The text was partially edited to exclude the frequent requests for time, statements by the clerk and the presiding officer, the reading of the bill, and the calling of the roll.

⁶ Some examples include (Jenkins-Smith, Clair et al. 1991; Kahn 1992; Hill, Hanna et al. 1997; Finkel and Geer 1998)

⁷ Here, a text file of approximately 258,000 words is analysed by the program in about ten minutes.

⁸ Social psychologists have applied computer-assisted content analysis to address issues of political economy (Oberlechner, Slunecko et al. 2004) while sociologists have used the method to explore culture (Ennis 1992; Carley 1994; Mohr 1994). Other applications include business administration (Kabanoff 1996; Kabanoff and Holt 1996) and market research (McDonald 1982).

⁹ "Taken together, the program realizes a complex *descending hierarchical classification* combining elements of different statistical methods like segmentation (Bertier and Bourouche 1975), hierarchical classification and dichotomization based on reciprocal averaging or correspondence analysis (Hayashi 1950; Benzecri 1981; Greenacre 1993) and the theory of dynamic clouds (Diday, Lemaire et al. 1982)" (Kronberger and Wagner 2000, 306).

¹⁰ An added point might be that the methodology has served well in other (extensive) analyses of legislative debates (Schonhardt-Bailey 2006).

¹¹ For Alceste, "statements" are defined as "contextual units." The program automatically determines contextual units with reference to punctuation and the length of the statement up to a maximum of 250 characters. The description of Alceste follows Kronberger and Wagner 2000.

¹² Through its dictionary, Alceste prepares the text by reducing different forms of the same word (in the form of plurals, suffixes, etc.) to the root form and transforms irregular verbs to the indicative, thereby producing a matrix of reduced forms. It also subdivides the corpus into "function words" (articles, prepositions, conjunctions, pronouns, and auxiliary verbs) and "content words" (nouns, verbs, adjectives, and adverbs). The content words are understood to carry the meaning of the discourse and the final analysis is based on these. (Content words are sometimes referred to as the "meaningful words.") The program creates a data matrix (an "indicator matrix") which allows an analysis of statistical similarities and dissimilarities of words in order to identify repetitive language patterns. This matrix relates relevant words in columns and contextual units in rows, so that if a given word is present, a 1 is entered in the cell; otherwise, the entry is 0. Then, using descending hierarchical classification analysis, the program identifies word classes. (The term "class" is used for descending hierarchical classification analysis while the term "cluster" is used for the more traditional ascending cluster analysis (Kronberger and Wagner 2000, 308).) The first class comprises the total set of contextual units in the initial indicator matrix. The program then attempts to partition that class into two further classes that contain different vocabulary and ideally do not contain any overlapping words. The methods used for this are optimal scaling and the adoption of a maximum chi-squared criterion for cutting the ordered set of words. Alceste compares the distribution of words in each of the two new classes with the average distribution of words. Different forms of discourse that use different vocabulary will result in an observed word distribution that deviates systematically from one where the words are independent of each other. The procedure searches for maximally separate patterns of co-occurrence between the word classes. The chi-squared criterion is thus used as a measure of the relationship that exists between words, rather than as a test.

¹³ Plurals and conjugation endings are reduced to a single form and nonce words are eliminated from the analysis. The leaves a smaller word count which is analyzed by the program.

¹⁴ These are deemed "passive" as they do not contribute to either the calculation of the word classes or the factors in the correspondence analysis.

¹⁵ Popping notes that the ECU is akin to the "recording unit" used in other programs, where it is usually defined by the researcher (Popping 2004).

¹⁶ A contextual unit is equivalent to one or more successive ECU(s). The two calculations are done with two different parameters for the selected number of words per contextual unit in order to check the reliability of the classes and the stability of the results. (Reinert 1998: 14)

¹⁷ The standard report lists the top 20 ECUs for each class, ranked by chi square association. However, a separate file is produced that lists all the ECUs for each class, where the default cut-off for selection is zero.

¹⁸ This minimum value for word selection within Alceste varies from 2.13 to 20, with smaller text files tending toward the lower threshold and larger ones toward the high threshold. The basic rule of thumb with Alceste is (as with any statistical analysis)—the more data, the easier it is to attain statistical significance (hence larger text files have to attain a higher threshold to be statistically significant).

¹⁹ While correspondence analysis is well-established in the French literature (see (Benzecri 1973) and the journal *Cahiers de l'Analyse des Donnees*) its use has spread with the publication of English applications (Greenacre and Underhill 1982; Greenacre 1984; Weller and Romney 1990; Greenacre 1993). Correspondence analysis has only recently received attention by political scientists (Blasius and Thiessen 2001). Correspondence analysis using numerical data is available in several major statistical packages, including BMDP, SPSS, and SAS.

²⁰ For this, correspondence analysis uses the “chi-squared distance”, which resembles the Euclidean distance between points in physical space. However, in correspondence analysis, each squared difference between coordinates is divided by the corresponding element of the average profile (where the profile is a set of frequencies divided by their total). The justification for using the chi-squared concept is that it allows one to transform the frequencies by dividing the square roots of the expected frequencies, thereby equalizing the variances. This can be compared to factor analysis, where data on different scales are standardized. Greenacre provides further geometric reasons for using the chi-squared distance in correspondence analysis (Greenacre 1993: 36).

²¹ Correspondence analysis usually refers to the “inertia” of a table, which can also be called “association” (Weller and Romney 1990). A corresponding chi-squared value can be obtained by multiplying the association value by the total n of the table.

²² The association and chi-squared statistic may be interpreted geometrically as the degree of dispersion of the set of rows and columns (or, profile points) around their average, where the points are weighted.

²³ In total, three factors are identified in the correspondence analysis (with the third factor obtaining an eigenvalue of 0.16 and percent association of 22.7). (Usually, the dimensionality of the system is one less than the number of classes in the profile (Greenacre 1993: 14)).

²⁴ In a particularly heated exchange on March 11 (p. S3474), Santorum demands that Boxer provide “a circumstance where [the D & X] procedure would be necessary and there would be no other procedures available.” Boxer replies with a doctor’s letter which defends “a range of abortion procedures” but does not specifically address D & X. Disgruntled and reclaiming his time, Santorum replies that Boxer “has not answered my question. That letter does not answer my question. I have asked not what could happen if abortions are not available. What I have asked is for a specific medical circumstance that someone can provide me where this procedure would be necessary to save the health of the mother. In 7 years of asking that question, I have not gotten an answer.”

²⁵ As noted earlier, a further factor accounts for another 22.7 % of the association, but this is not explored in this paper.

²⁶ Notably, for the 108th Congress (2003), the House Judiciary Committee heard evidence, but the 2003 bill was never sent to committee in the Senate, a point that will be discussed later.

²⁷ Limited to just the four doctors who brought suit.

TABLE 1: SENATE DEBATES ON PARTIAL-BIRTH ABORTION ACT

PARTIAL-BIRTH ABORTION BAN ACT OF 2003	(Senate - March 10, 2003)	Page: S3383 through page: S3389
PARTIAL-BIRTH ABORTION ACT OF 2003--Continued --	(Senate - March 10, 2003)	Page: S3390 through page: S3399
PARTIAL-BIRTH ABORTION BAN ACT OF 2003	(Senate - March 11, 2003)	Page: S3422 through page: S3429
PARTIAL-BIRTH ABORTION BAN ACT OF 2003--Continued - -	(Senate - March 11, 2003)	Page: S3456 through page: S3463 (deleting interruption of debate to discuss Iraq), and Page: S3467 through page: S3494 (excluding statistical tables)
PARTIAL-BIRTH ABORTION BAN ACT OF 2003 (Durbin amendment No. 259, in the nature of a substitute)	(Senate - March 12, 2003)	Page: S3560 through page: S3608
PARTIAL-BIRTH ABORTION BAN ACT	(Senate - March 12, 2003)	Page: S3644 through page: S3647
PARTIAL-BIRTH ABORTION BAN ACT OF 2003	(Senate - March 13, 2003)	Page: S3653 through page: S3662
THE RIGHT TO CHOOSE	(Senate - September 15, 2003)	Page: S11454 through page: S11460 * (included given its relevance and that it immediately precedes the resumption of the main debate)
PARTIAL-BIRTH ABORTION BAN ACT OF 2003--Resumed --	(Senate - September 16, 2003)	Page: S11551 through page: S11557

PARTIAL-BIRTH ABORTION BAN ACT OF 2003	(Senate - September 17, 2003)	Page: S11589 through page: S11601 (excludes statistical table)
ROE ROE. V. WADE	(Senate - September 17, 2003)	Page: S11601 through page: S11605 * (included given its relevance and that it is temporally situated in close proximity to the main debate)
PARTIAL-BIRTH ABORTION BAN ACT OF 2003-- CONFERENCE REPORT	(Senate - October 21, 2003)	Page: S12914 through page: S12927
PARTIAL-BIRTH ABORTION BAN ACT OF 2003 CONFERENCE REPORT-- Continued	(Senate - October 21, 2003)	Page: S12927 through page: S12948

TABLE 2: List of Senators (members of Judiciary Committee in italic)

Name	State	Party	Poole's rank	Error in NOMINATE
BARBARA BOXER	CA	D	1.0	
<i>ED KENNEDY</i>	MA	D	2.0	
FRANK LAUTENBERG	NJ	D	3.0	
JACK REED	RI	D	4.0	
JON CORZINE	NJ	D	5.0	
ERNEST HOLLINGS	SC	D	6.0	error
BOB GRAHAM	FL	D	7.0	
PAUL SARBANES	MD	D	9.5	a
JAMES JEFFORDS	VT	I	9.5	b
TOM HARKIN	IA	D	9.5	c
ROBERT BYRD	WV	D	9.5	d
<i>PATRICK LEAHY</i>	VT	D	12.0	error
CHRISTOPHER DODD	CT	D	13.0	
DANIEL AKAKA	HI	D	14.5	a
CARL LEVIN	MI	D	14.5	b
<i>RICHARD DURBIN</i>	IL	D	16.0	
DANIEL INOUE	HI	D	17.5	a
<i>RUSSELL FEINGOLD</i>	WI	D	17.5	b
JOHN ROCKEFELLER	WV	D	19.0	
<i>JOHN EDWARDS</i>	NC	D	20.0	
JOHN KERRY	MA	D	21.5	a
HILLARY CLINTON	NY	D	21.5	b
BARBARA MIKULSKI	MD	D	23.0	

MARK DAYTON	MN	D	24.0		
PATTY MURRAY	WA	D	26.0	a	
DEBBIE STABENOW	MI	D	26.0	b	
MARIA CANTWELL	WA	D	26.0	c	
RON WYDEN	OR	D	28.0		
<i>DIANNE FEINSTEIN</i>	CA	D	29.0		
<i>HERB KOHL</i>	WI	D	30.5	a	
BILL NELSON	FL	D	30.5	b	
<i>CHARLES SCHUMER</i>	NY	D	33.0	a	
JOSEPH LIEBERMAN	CT	D	33.0	b	
<i>JOSEPH BIDEN</i>	DE	D	33.0	c	error
JEFF BINGAMAN	NM	D	35.0		
HARRY REID	NV	D	36.0		error
TOM DASCHLE	SD	D	37.0		
TIM JOHNSON	SD	D	38.0		
BYRON DORGAN	ND	D	39.0		
KENT CONRAD	ND	D	40.0		
THOMAS CARPER	DE	D	41.0		error
EVAN BAYH	IN	D	42.0		
MARK PRYOR	AR	D	43.0		
BLANCHE LINCOLN	AR	D	44.0		
MARY LANDRIEU	LA	D	45.0		
MAX BAUCUS	MT	D	46.0		error
JOHN BREAUX	LA	D	47.0		
BENJAMIN NELSON	NE	D	48.0		
LINCOLN CHAFEE	RI	R	49.0		

OLYMPIA SNOWE	ME	R	50.0
SUSAN COLLINS	ME	R	51.0
<i>ARLEN SPECTER</i>	PA	R	52.0
GEORGE VOINOVICH	OH	R	53.0
<i>MIKE DEWINE</i>	OH	R	54.0
GORDON SMITH	OR	R	55.0
NORM COLEMAN	MN	R	56.0
RICHARD LUGAR	IN	R	57.0
JOHN WARNER	VA	R	58.0
PAT ROBERTS	KS	R	59.5 a
ZELL MILLER	GA	D	59.5 b
SAM BROWNBACK	KS	R	61.5 a
BEN CAMPBELL	CO	R	61.5 b
LISA MURKOWSKI	AK	R	63.5 a
ROBERT BENNETT	UT	R	63.5 b
KAY HUTCHISON,	TX	R	65.0
CHUCK HAGEL	NE	R	66.5 a
<i>SAXBY CHAMBLISS</i>	GA	R	66.5 b
JAMES TALENT	MO	R	68.0
PETER FITZGERALD	IL	R	69.0
<i>CHUCK GRASSLEY</i>	IA	R	70.5 a
ELIZABETH DOLE	NC	R	70.5 b
THAD COCHRAN	MS	R	72.0
TED STEVENS	AK	R	73.5 a
RICHARD SHELBY	AL	R	73.5 b
WILLIAM FRIST	TN	R	76.0 a

CHRISTOPHER BOND	MO	R	76.0	b	
PETE DOMENICI	NM	R	76.0	c	
MITCH MCCONNELL	KY	R	78.0		
GEORGE ALLEN	VA	R	79.0		
LAMAR ALEXANDER	TN	R	80.0		
<i>ORRIN HATCH (Chair, Judiciary)</i>	UT	R	81.0		
JIM BUNNING	KY	R	82.0		
CONRAD BURNS	MT	R	83.0		
TRENT LOTT	MS	R	84.0		
MIKE CRAPO	ID	R	85.5	a	
<i>LARRY CRAIG</i>	ID	R	85.5	b	
JAMES INHOFE	OK	R	87.0		
<i>JOHN CORNYN</i>	TX	R	88.0		
CRAIG THOMAS	WY	R	89.0		
MICHAEL ENZI	WY	R	90.0		
JUDD GREGG	NH	R	91.0		
<i>LINDSEY GRAHAM</i>	SC	R	92.0		
JOHN SUNUNU	NH	R	93.5	a	
RICK SANTORUM	PA	R	93.5	b	
WAYNE ALLARD	CO	R	95.0		
JOHN ENSIGN	NV	R	96.5	a	
JOHN MCCAIN	AZ	R	96.5	b	error
<i>JEFF SESSIONS</i>	AL	R	98.0		
DON NICKLES	OK	R	99.0		
<i>JON KYL</i>	AZ	R	100.0		

Table 3: Alceste Analysis: Basic Statistics for Senate Debates on Partial-Birth Abortion Ban Act of 2003

Total Word Count	257,999
Unique Words Analyzed	107,065
Passive Variables (Tagged Indicators)	59
I.C.U.s (= number of speeches)	479
Classified E.C.U.s	4907 (= 78% of the retained E.C.U.)
Lexical Classes	4
Distribution of Classes (%)	1 35.9 Choice, Rights & Morality 2 27.5 Constitutionality 3 21.0 Personal Experiences (woman's health versus fetal life) 4 15.6 Legislative Procedure

Figure 2: Senate Debates on Partial-Birth Abortion Ban Act of 2003 – Tree Graph of the Stable Classes



