"Agenda-Setting and Issue-Framing Dynamics in Front-Page News"
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Project Summary

On any given day, the world is faced with thousands of political problems, each of which can be understood or "framed" from several points of view. The result is a cacophony of issues and frames that demand attention from the political system. Attention, however, is limited. Each year the U.S. Supreme Court decides about 150 cases; Congress and the President work to sign approximately 350 bills into law; Americans spend, by most counts, less than 1,000 hours thinking about politics; and the *New York Times* publishes 365 front pages of top news stories. The policy issues that appear in these front-page stories and the way they are framed send important cues to judges, politicians, and citizens alike about which issues and frames are most important. And when front-page focus shifts from one set of issues and frames to another, this change matters. "No wonder policy experts often view the media with disdain or even outright hostility," write Baumgartner and Jones. "Each time there is a surge of media interest in a given topic, we can expect some degree of policy change" (1993). Similarly, each time there is a surge of interest in a given frame, we can expect political consequence. In my dissertation I will examine "agenda-setting" and "issue-framing" dynamics in *NYT* front-page news. Here, I offer a new theory of issue-framing dynamics and a design to test parallel hypotheses that both issue-framing and agenda-setting follow a pattern of "disproportionate information processing" (DIP), by which these processes should exhibit long periods of relative stasis punctuated by dramatic moments of change; these are the moments of agenda overhaul and issue redefinition.

To test these hypotheses I will create two original datasets, the first showing the rise and fall of different issues on the *NYT* front page over time, the second showing the rise and fall of different frames within each issue debate. In creating these datasets, I will refine innovative methods of textual analysis I borrow from Laver, Benoit, and Garry (2003) and Simon and Xenos (2004) and apply to my multi-issue study of agenda-setting and issue-framing over time. I will examine the *NYT* front page of every tenth day from 1960 through 2002 (N=1,532), coding each article by policy issue. I will use the resulting Issues Dataset of 11,000 articles to test the DIP hypothesis of agenda-setting. I will then employ word-frequency analysis to produce a Frames Dataset I will use to test my theory that issue-framing is also governed by DIP. I will also use factor analysis to extract substantive interpretations of the changing frames within each issue debate. In this proposal, I offer evidence from a pilot study of these methods to validate my approach.

The **intellectual merit** of my proposed study lies in the theoretical and methodological contributions it makes to our understanding of agenda-setting and issue-framing, both of which are powerful political processes that limit and shape attention. The right changes in agenda-setting and issue-framing can serve to inspire or inhibit political participation, justify or impugn acts of war, or legitimize or dismantle prejudices. My examination of agenda-setting and issue-framing dynamics will advance our knowledge of these mechanisms of influence.

The **broader impacts** of the study are embodied in the two extensive datasets that will be made publicly available, along with details of the methods I use. These data will offer insight into the political system that, beyond aiding academic research, will provide the general public with a more tangible understanding of how some concerns and viewpoints are paid media attention, while others are not. Such knowledge will be beneficial to many citizen coalitions and minority-interest groups in particular. Finally, this project offers four aspiring political scientists training and experience in good practices of theory development, data collection and analysis.

Introduction: Issues, Frames, and Front-Page News

In the political system, attention is scarce currency. At any point in time, the public radar screen or *agenda* can accommodate only a fraction of potentially-relevant policy *issues*, and each description of these issues or *frame-space* can accommodate only a fraction of existing dimensions of evaluation or *frames*. Together, the issues that appear on the front page of the daily news and the spin put on those issues send a message to citizens and government officials about what is important and, by exclusion, what is not.[1] In this way, attention is a critical political resource; without being talked about, policy needs have slim chance of garnering public endorsement, financial support, or legislative action. My dissertation examines how issues at the forefront of public attention, and the frames used to portray those issues, change over time; the dynamics of "agenda-setting" and "issue-framing."

My contributions are twofold. First, using data showing how front-page articles on the *New York Times* (*NYT*) are apportioned across policy issues, I conduct a new test of the ***disproportionate information processing (DIP)*** theory of agenda-setting dynamics. This theory predicts long periods of little or no change in the set of issues on the public's radar screen, punctuated by changes so large as to overhaul the entire agenda. While this theory is established in the agenda-setting literature (Jones & Baumgartner 2005), it has never been tested – as I do here – across multiple policy issues sampled over time. Second, and most importantly, I extend the disproportionate information processing theory to the framing process, offering a new theory of issue-framing dynamics. I hypothesize that finite capacity in the frame-space of a policy issue combined with social attention cascades produce a particular framing pattern; a pattern in which long periods of minor incremental shifts in the framing of an issue debate give way to sudden, dramatic instances of reframing. I test this theory using quantitative analysis of *NYT* front-page article texts, conducted using methods borrowed from Laver, Benoit, and Garry (2003) and Simon and Xenos (2004), applied here to the study of media framing for the first time.

The proposed research design advances in two stages. First, I will read the headline and two lead paragraphs of all public policy articles on the front page of the *NYT* every tenth day from Jan. 1, 1960 to Dec. 31, 2002 and code each article by policy issue (N=1,532 days or, aggregated by quarter, N=172).[2] The resulting Issues Dataset of approximately 11,000 articles will be of great value to scholars well beyond the scope of the dissertation, providing a comprehensive view of *which* issues topped the public agenda over this period, how *quickly* attention to issues rose and fell, and – of key interest here – how *changes* in the agenda have occurred over time. I will use distributional change analysis to test **Hypothesis 1, that agenda-setting follows a DIP pattern of dynamics**. Second, I will use automated word-frequency analysis to translate the text of news articles in the Issues Dataset into data, producing a Frames Dataset listing a count of each word used in each article. This dataset too will prove useful across many research areas, offering a detailed view of how framing has shaped diverse policy debates over time. I will use distributional change analysis to test **Hypothesis 2, that DIP also governs issue-framing dynamics.** Finally, I will use factor analysis to interpret the substance of the changing frames that have comprised these issue debates as they have shifted over the last four decades.

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[1] Media attention has a powerful influence on the political system(Cater 1959; Cook 1988; Iyengar & Kinder 1987; Iyengar 1991).
[2] Articles come from the *NYT Historical Index*, available only through 2002. Evidence suggests that the *NYT* is the most accurate indicator of national media coverage (Woolley 2000; Althaus, Edy, & Phalen 2001; Soroka 2002).

My research builds on two preliminary studies of issue-framing dynamics. The first study was completed as part of an ongoing examination of issue-framing in the capital punishment debate that my advisor (the PI) and I are conducting with additional colleagues. The second study was a pilot study I created to test the collection and analysis methods I will use in the dissertation. In both studies, two kinds of quantitative analysis were conducted: first, to assess patterns of how frequently framing the death penalty debate changed and whether changes in frame occurred subtly, explosively, or in different ways at different times (i.e., framing dynamics); and second, to examine the substantive content of the different frames that have comprised the changing debate. I then tested the results obtained in the pilot study to the baseline results produced in the first study to assess the validity of the methods I will use in the dissertation.

In the first study, all abstracts listed in the *NYT Index* under "capital punishment" between 1960 and 2004 (3,781 abstracts) were read and coded by hand to capture the frames used in each. I used distributional change analysis to assess the pattern of framing dynamics, and I used factor analysis to extract substantive frames from these frequency calculations. Data collection and analysis took another coder and me five months to complete (about 600 hours). In contrast, for the pilot study I used the full text of all *NYT* articles with "capital punishment," "death penalty," or "death row" in the headline (1,363 articles). Article texts are considerably longer than article abstracts (four times on average), making the data scope of this pilot study comparable with that of the first. In this second study, however, I did not read the articles but instead processed them using the "WORDSCORES" word-frequency technique developed by Laver, Benoit and Garry (2003). Following the "dimension reduction" approach of Simon and Xenos (2004), I performed factor analysis to extract substantive interpretations of the underlying dimensions (i.e., frames) comprising the issue debate (see also Monroe & Maeda 2004). Finally, I employed distributional change analysis to assess the pattern of framing dynamics. Data collection and analysis took me about 130 hours, less than a quarter of the time spent for the first project. *Results from both studies were highly consistent across both types of analysis, validating the methods I will employ in the dissertation.* Both preliminary studies show strong evidence that changes in the framing of the death penalty debate follow a pattern of DIP dynamics. Yet additional data and analysis are needed to test the theory of issue-framing dynamics across multiple issues over time and, similarly, to provide important testing ground for the parallel DIP theory of agenda-setting dynamics across multiple issues sampled over time.

Literature Review & Theory: Agenda-Setting, Issue-Framing, and Disproportionate Information Processing (DIP)

"Agenda-setting" is the process by which policy issues (e.g., prescription drug benefits, political corruption, Hurricane Katrina relief funds) gain position on the public or political agenda while others (e.g., farming subsidies, schizophrenia, third world genocides) go comparatively unnoticed.[3] "Issue-framing," similarly, is the process by which the definition of an issue (frame-space) is crafted using a particular frame at the neglect of alternate frames.[4] Agenda-setting and issue-framing are parallel and mutually-influential processes, both centered in the division of a

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[3] An "agenda" is any venue of attention. Examples of political agendas at the national level include the set of legislative issues discussed in Congress, the set of judicial issues reviewed by the Supreme Court, and – as studied here – the policy issues reported in front-page news.

[4] A "frame" is a dimension of evaluation (e.g., cost, legality, morality) that serves as the basis of reference through which to define the debate.

finite currency of attention. The driving element of agenda-setting is that there are more problems in the world than can fit onto any single agenda. And at the nexus of issue-framing is the fact that issues are inherently multidimensional; there are always multiple points of view, more than can fit into any single description or frame-space of a problem. Which issues achieve agenda status determine the parameters of political debate. Which dimensions are used to frame these issues determine the debate's form and substance.

E. E. Schattschneider laid the theoretical groundwork for studies of agenda-setting and issue-framing with the concept of "conflict displacement": the redistribution of political attention or resources from the status quo to a new division of debate (1960). Consider the "pie" of space on a given agenda. In essence, agenda-setting is the process of slicing this pie along changing division lines; (re)distributing the currency of attention across a few favored issues selected from the larger population of issues. Within each issue debate, there is a separate "pie" of frame-space, such as the number of words allotted a news article. Issue-framing is the process of slicing this pie along changing division lines; (re)distributing the currency of attention across favored frames selected from all the dimensions of evaluation that could define the issue. Often, an issue debate focuses on one frame for a period of time but shifts later to a different frame. In the 1950s, for example, nuclear power was described as a matter of scientific advancement: the "atoms for peace" frame. By the 1960s, it had been reframed in terms of environmental danger, health risk, and military arms proliferation (Baumgartner & Jones, 1993).

"The definition of the alternatives," Schattschneider writes, "is the supreme instrument of power" (1960). Indeed, studies of agenda-setting and issue-framing are both investigations of influence. In agenda-setting, power is wielded by limiting the scope of the political agenda "to public consideration of only those issues which are comparatively innocuous" to members of a particular group (Bachrach & Baratz 1962). In issue-framing, power is exercised by limiting definition and discussion of an issue to a set of dimensions advantageous to a particular interest. In both cases, the mechanism at work narrows the universe of problems and arguments to a favored perspective. Extensive research demonstrates that both agenda-setting and issue-framing have significant influence on the political system (on the effects of agenda-setting: Caldeira & Wright 1988; Gaventa 1980; Flemming, Wood, & Bohte 1999, Riker 1982; Wood & Peake 1998; on the effects of issue-framing: Jacoby 2000; Nelson, Clawson, & Oxley 1997; Nelson & Oxley 1999; Pollock 1994; Terkildsen & Schnell 1997; Tversky & Kahneman 1986; on the limits of framing effects: Druckman 2001a-d, Druckman & Nelson 2003).

Agenda-setting is a complex and stochastic process. Whether or not an issue gains position on an agenda is driven by several variables, including: the definition or frame given to the problem in question, the availability of feasible solutions, the level of "competition" among issues, the level of public outcry, reigning partisan and coalition control, the amount of political clout pushing that issue to the forefront of attention, events, and not a small bit of chance. Critical junctures in these variables are what enable the agenda to change (Carmines & Stimson 1989; Carpenter 2002; Cobb & Elder 1972; Cohen, March, & Olsen 1972; Downs 1972; Kingdon 1984; Pierson 2000; Walker 1977; Zahariadis 1999).

Issue-framing is an important element in the agenda-setting process; the public does not respond to real-world problems themselves so much as to the collective *definitions* society adopts for

those problems (Best 1995; Blumer 1971; Hilgartner & Bosk 1988; Spector & Kitsuse 1973 & 1977). As Kingdon puts it, "conditions become defined as problems when we come to believe that we should do something about them" (1995). Depending on events and political circumstances, something defined as "important" today will not necessarily be so tomorrow. What matters is whether or not an issue is important *enough*, compared to all other issues, to pass a "threshold of urgency," as defined by the agenda's capacity (Jones & Baumgartner 2005). Issue-framing is a mechanism able to propel an issue above this threshold of urgency (Cobb & Elder 1972; Kingdon 1995; Baumgartner & Jones 1993 and 2002). Whether through framing or another means, the rise of an issue beyond a threshold of urgency is usually ushered by a fad-like wave of popularity; a social "cascade" in the nature of fashion trends, stock market crashes, residential segregation, and collective action (Jones & Baumgartner 2005).

I argue that issue-framing is an equally complex process. Whether or not a particular frame gains a place in the frame-space of an issue is driven by several variables, including: the public's receptivity to the frame, how compelling and exciting the frame is (e.g., its "shock-value"), the level of "competition" among frames, whether the frame reinforces or displaces the status quo framing dimension, the amount of political clout pushing that frame to the forefront of attention, events, and not a small bit of chance (Wood & Doan 2003; Baumgartner et al. 2005). Although these variables can combine in multiple ways to advance a frame onto an issue's frame-space, social cascades are the most likely vehicles for reframing an issue debate.

In short, finite agenda and frame-space capacities, issue and frame "competition," and the human need for sustained drama inhibit all but the most compelling issues and frames from gaining position on a given agenda or frame-space. The result is that, most of the time, most issues and frames fall below the radar of political leadership and news media alike, attended to within smaller venues of attention and specialized policy communities (Carmines & Stimson 1986; Downs 1972; Jones & Baumgartner 2005). In terms of dynamics, agenda-setting and issue-framing should generally display patterns of relative stasis, demonstrating only small, incremental change. Yet every once in a while, when an issue makes it on the agenda or a frame finds position in an issue's frame-space – usually on the seat of a social cascade – the political system must respond. The previous period of equilibrium is punctuated with dramatic change: a massive overhaul of the agenda or a radical reframing of a policy debate. In the agenda-setting literature, this patterned process is called "Disproportionate Information Processing" (DIP) (Jones & Baumgartner 2005; Jordan 2003; True, Jones, & Baumgartner 1999).

Jones and Baumgartner posit that, *since* there are thousands of trends, activities, events, and situations that affect government, *and* these trends, activities, etc. are governed by hundreds or even thousands of different processes (not all of which are related to each other), *then* changes in the severity of these different items will be Normally distributed. In other words, since the information that must be filtered through the public agenda-setting process has such a high *N*, the distribution of agenda <u>input</u> is necessarily Normal, by virtue of the Central Limit Theorem. If the agenda-setting process operates such that <u>responses</u> to incoming information are timely and proportional, then change in each system over time should be likewise Normal, and a histogram of these changes should show the smooth curves of incremental movement. However, if the DIP theory is correct, the distribution would be "leptokurtic" instead. In place of steady sloping shoulders leading to a smooth and rounded peak, a leptokurtic distribution has a tall, thin, and

pointed middle peak, with weak shoulders and simultaneously large tails—many more observations at either extreme than in a Normal curve with similar variance. The tall middle peak holds the vast bulk of observations: all the time periods during which there was little or no change in the system. The shoulders drop away so dramatically on either side of the peak because, in a process governed by DIP, there is a paucity of moderate change. At the tail ends, clusters of observations reflect the rare but explosive punctuations in the system. In addition to visual analysis of the distribution, a simple kurtosis test shows whether the set of changes is leptokurtic, defined as such for kurtosis values that exceed three (k=3).

I theorize that both issue-framing and agenda-setting dynamics are governed by disproportionate information processing. My test of this theory will provide the first analysis of issue-framing dynamics across multiple issues. Additionally, although empirical support for the DIP theory in the context of agenda-setting already exists, I offer the first test of this theory across multiple, specific policy issues sampled over time. Explicitly:

> **Hypothesis 1:** *The frequency distribution of <u>agenda</u> changes (i.e. shifts in the division of attention across issues between subsequent time periods) will reach significant levels of leptokurtosis, supporting DIP theory.*

> **Hypothesis 2:** *The frequency distribution of <u>frame</u> changes (i.e. in a single issue debate, shifts in the division of attention across frames between subsequent time periods) will reach significant levels of leptokurtosis, supporting DIP theory.*

Research Design: Measuring and Analyzing Agenda-setting & Issue-framing Dynamics

To test these hypotheses, I collect two types of data: 1) Issues Dataset: counts of how many times each policy issue appears on the agenda at each time point, and 2) Frames Dataset: counts of how many times each frame appears in the frame-space of an issue at each time point.

<u>1) Issues Dataset</u>
There are many agendas in the political spectrum, but for feasibility this project will focus on the national public agenda as represented by the front page of the *NYT*. I use a sampling approach that provides a representative glimpse of the public agenda in its entirety while also achieving variance across issues as well as frames for purposes of robustness and generalizability. For every tenth day between Jan. 1, 1960 and Dec. 31, 2002, I will read the headline and first two paragraphs of every article on the front page of the *NYT*, first determining whether the article is related to public policy (N=1,532 days or, aggregated by quarter, N=172). In total, there were 170,194 articles published on the *NYT* front-page between 1960 and 2002 (Lexis Nexis). Sampling every tenth day yields a sample of about 17,000 articles. Based on the Policy Agendas Project analysis of 36,403 abstracts from the *NYT Index* (1946-2001), an estimated 65.7% of front-page articles are related to public policy. Thus, each dataset will contain approximately 11,100 articles, all policy-related.[5]

For each of these articles, I will record: unique article ID#; date; first three words of article; and a 6-digit identifier code unique to each policy issue, generated using the topic codes (first two

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[5] Although my coding will distinguish specific policy issues (e.g., school vouchers) from broader issue areas (e.g., elementary and secondary education), I use the terms "policy" and "issue" interchangeably throughout this proposal to refer to specific policy issues like vouchers.

digits) and subtopic codes (next two digits) from Baumgartner and Jones' Policy Agendas Project as well as policy-specific codes (last two digits), thus providing a unique identifier for each policy issue. For example, if the first article coded reports on school vouchers, the policy identifier would be 060201 (Education 06, Elementary and Secondary Education 02, and Vouchers 01). Subsequent articles on school vouchers would receive this same code. The next article to deal with an issue of elementary and secondary education (e.g., high school dropout prevention) would be coded 060202.

I use this Issues Dataset to test Hypothesis 1, that agenda-setting dynamics follows a pattern of DIP. I proceed in three stages. A) For each policy issue, a single "Issue Count Series" will be produced as the aggregate number of articles appearing on that issue by quarter. B) From this Issue Count Series, an "Issue Change Series" will be calculated for each issue by subtracting the number of articles in a given quarter from the number in the subsequent quarter. For example, if 12 articles were written on school vouchers in the first quarter of 1960, then 10, 15, and 15 in the second, third, and fourth quarters respectively, the Issue Change Series for the final three quarters would be: q2 = -2, q3 = 5, and q4 = 0. C) I will test Hypothesis 1 by compiling the Issue Change Series for all policy issues and calculating the kurtosis score of these compiled series, expecting to see a kurtosis score of k>3. The null hypothesis is that the distribution of changes in the agenda over time will be Normally distributed, showing a kurtosis value of k=3.

2) Frames Dataset

Next, I will collect the Frames Dataset by downloading the full-text of each article listed in the Issues Dataset, saving each article as text, and processing these texts through the WORDSCORES program. Created by Laver, Benoit, and Garry (2003) for their work analyzing such texts as party manifestos and legislative speeches, the WORDSCORES program is a Stata software addendum that treats text as data, taking count of each word in a document. For a single text, an m x 1 dataset is constructed of m rows of words, with a count in each adjacent cell of how many times that word was used in the given text. When multiple texts are analyzed together, an m x n dataset gives m rows of words by n columns of texts.[6] I will streamline these data to eliminate non-substantive parts of speech ("a," "and," "if," etc.) and to combine variants of common root terms ("court," "courts," "courtroom," etc.). I will use the resulting Frames Dataset of m rows of substantive words and n columns of articles to test Hypothesis 2 in the case of each policy issue individually, following the same procedures used in analyzing the Issues Dataset. A) I will construct a "Frame Count Series" for each word by taking the sum of that word within each quarter. B) I will create a "Frame Change Series" for each word as the difference between the number of instances of that word in a given quarter and in the subsequent quarter. C) I will calculate a kurtosis score across the Frame Change Series of all words within each policy issue. Finally, I will use factor analysis, following the dimension reduction techniques outlined by Simon and Xenos (2004), to extract substantive interpretations of the frames used in each policy debate.

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[6] The program offers additional functions, such as the ability to calculate a "score" for each text based on how similar or dissimilar it is from reference texts of known policy positions. These scores can be used to gauge such variables as policy estimates or the ideal points of legislators (Laver, Benoit, and Garry 2003; Monroe & Maeda 2004), but for the purposes of issue-framing analysis, simple word counts are sufficient.

Preliminary Results: Framing of the Death Penalty Debate

Here, I discuss two previous studies of issue-framing dynamics in order to explain and validate the innovative techniques I will use in collecting and analyzing the Frames Dataset. Most studies of real-world issue-framing rely on labor-intensive "hand-coding" of a necessarily limited amount of data. Instead, I employ automated word-frequency analysis. While words do not always constitute frames, frames are always composed of words. Laver, Benoit, and Garry (2003), Monroe and Maeda (2004), and Simon and Xenos (2004) offer convincing demonstrations of the validity of this technique compared with hand-coding, and comparison of my results from a hand-coded study of framing dynamics with those of my trial-run of these new methods offers further evidence that word-frequencies provide reliable textual analysis.

In the first study, all 3,781 abstracts listed under "capital punishment" in the *NYT Index* between 1960 and 2004 were analyzed using inter-subjective content analysis. A fellow student and I spent five months (approximately 600 hours) performing data collection and analysis. We read and coded each abstract according to an exhaustive set of 67 distinct pro-death penalty, anti-death penalty, and neutral arguments ("eye for an eye," "cruel and unusual punishment," etc.) categorized under seven dimensions of debate, or frames: efficacy, morality, fairness, mode of execution, constitutionality, cost, and international issues. The results of this study offer support for the theory that issue-framing dynamics are governed by DIP. I find long periods of small incremental movement punctuated by dramatic redefinitions of the debate, the most recent of which has been the late 1990s' shift to fairness, specifically possible flaws in the system and the risk of executing innocent individuals.[7] This study provided as detailed an examination of the framing of an issue as I could hope to achieve. Yet the time costs were considerable, even coding only *NYT* abstracts instead of full article texts.

My desire to expand this analysis across multiple issues motivated the second research project, a pilot test for the word-frequency approach I will use in the dissertation. In this second project, I saved the full text of each of the 1,363 *NYT* articles with "capital punishment," "death penalty," or "death row" in its headline from 1980 through 2004. I used the WORDSCORES program to produce a dataset with 1,363 columns (one for each article collected) and 38,384 rows (one for each distinct word that appeared at least once in at least one article). I streamlined this data as prescribed by Simon and Xenos (2004). The resulting dataset of 427 rows offers a single-issue example of what my dissertation's Frames Dataset will look like.

Table 1 shows the first 15 rows of this dataset. The first 12 columns (A-L) show raw word counts as generated by WORDSCORES for the 12 *NYT* headline articles on capital punishment that appeared in the first quarter of 1987. The right-hand side of this table shows aggregate counts by quarter. The first of these columns is the total for 1987q1, the sum of the 12 preceding columns. Each of these columns is the "Frame Set", the set of all words used for that time point. The final four columns of each row show the first four values of the "Frame Count Series" for that word.[8] The final row shows the "Aggregate Frame Count Series": the total attention (in substantive words) given to the death penalty over time, as shown in Figure 1.

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[7] Data from this project has been used to show that changing media definitions of the death penalty debate have had a powerful effect on the political system, accounting for even more change in the annual number of death sentences than homicides per capita (Baumgarter, De Boef, and Boydstun 2005).

[8] The Frame Count Series values given here are for these words only; actual numbers are much larger.

Table 1: Sample Data from WORDSCORES Analysis

| | 1987q1 Individual Counts for Illustrative Purposes | | | | | | | | | | | | Aggregate Counts by Quarter | | | |
Word	A	B	C	D	E	F	G	H	I	J	K	L	Total A-L 1987q1	1987q2	1987q3	1987q4
execute*	4	2	0	0	0	3	0	17	0	0	3	1	30	19	27	27
court*	8	5	6	2	7	10	12	31	4	7	15	0	107	26	19	42
murder*	3	0	2	0	1	5	6	9	0	3	1	0	30	32	10	15
law*	10	0	3	0	1	3	4	11	1	0	0	2	35	35	7	11
victim*	3	0	3	0	6	5	6	9	0	3	4	0	39	2	1	2
constitution*	0	1	0	0	2	0	1	0	1	4	0	1	10	2	4	6
race*	0	0	0	0	0	0	0	0	0	0	0	0	0	11	7	0
sentence*	8	0	1	3	10	4	10	23	1	9	12	5	86	24	13	21
defendant*	8	0	6	1	8	0	11	13	7	2	6	2	64	15	1	9
crime*	2	1	3	2	12	4	5	11	2	7	8	2	59	4	14	4
black*	0	0	0	0	1	0	0	1	0	0	0	0	2	10	16	0
appeal*	1	2	1	0	4	0	3	6	1	0	5	0	23	10	6	14
kill*	15	0	0	1	17	0	2	13	4	1	6	3	62	14	14	22
prison*	3	0	0	0	0	1	2	1	2	0	1	0	10	24	2	16
justice*	12	2	3	0	6	4	14	28	5	1	10	1	86	1	12	11
SUM													**643**	**229**	**153**	**200**

For each word, I calculated a "Frame Change Series" by subtracting subsequent Frame Count Series values. Based on data in Table 1, for example, the "execute" Frame Change Series values would be -11, +8, and 0, respectively. Figure 2 shows the "Aggregate Frame Change Series." Relatively, movement is small from 1980 to 1997, broken by a dramatic punctuation lasting from 1998 through 2004. A kurtosis score shows these changes are leptokurtotic (k=171, significantly >3), holding even when all zeroes are dropped from the dataset to avoid possible inflation (k=113). These results are consistent with those from the first, hand-coded study (k=43).

Figure 1: "Aggregate Frame Count Series"
**(Total Substantive Words Used), 1980-2004**
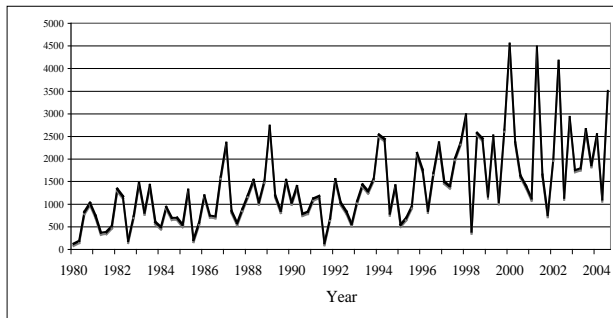
Figure 2: "Aggregate Frame Change Series"
**(Sum of Net Differences in Word Counts), 1980-2004**
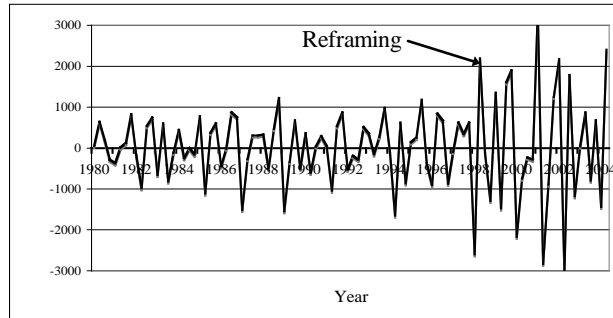
A histogram of the Aggregate Frame Change Series confirms leptokurtosis. Figure 3A shows the full-scale histogram with an overlaid Normal distribution using the same mean (0.08) and standard deviation (8.18) as the data.[9] The peak characteristic of a leptokurtic distribution is visible, as are the weak shoulders on either side. Figure 3B shows the same picture in detail. Here we see clusters of observations at both tails, representing rare periods of dramatic change.

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[9] In Figures 3A and 3B, extreme values are clustered at -60 and +60 in order to display the graph at a readable scale.

**Figure 3A: Frequency Distribution
of Frame Change Amounts**
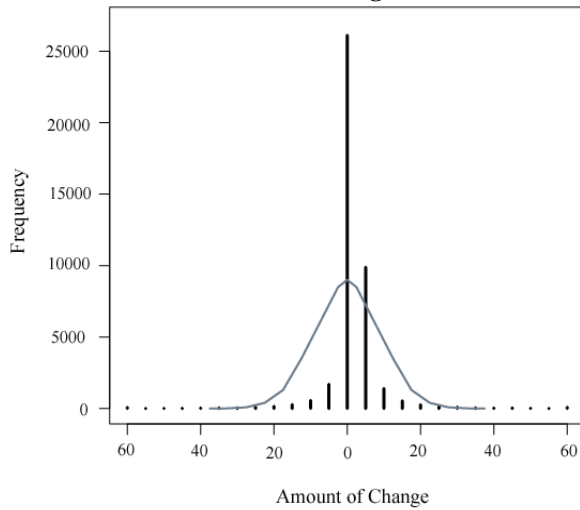
Figure 3B: Zoomed View
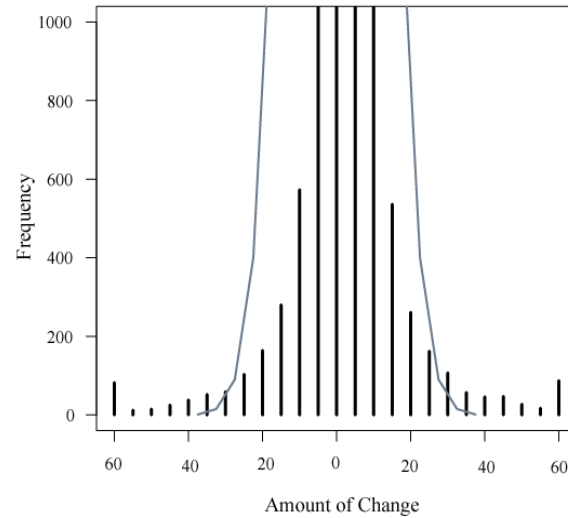
To assess the nature and substance of the dramatic reframing that began in 1998, I followed Simon and Xenos (2004), using factor analysis to extract meaning from word-frequency data.[10] In the years 1999-2000, for example, rotated varimax factor analysis yields 80 words that load highly (>=.85) and positively on the first factor. I divided these words into seven categories of an *a priori* dictionary of key words I created based on the seven framing categories used in the earlier hand-coded study. This word-frequency analysis offers the same conclusion as that drawn from the earlier approach: the death penalty debate of 1999-2000 was dominated by the fairness frame, totaling 651 uses of the following words: commuted, DNA, doubts, evidence, fairness, innocence, misconduct, moratorium, pardons, reprieve, and safeguards. The next most prominent frame category totaled only 292 word uses.

Conclusion: Intellectual Merit and Broader Impacts

In the political system where problems and perspectives are many, and attention is scarce, agenda-setting and issue-framing are powerful arbiters of what is "important" and what is ignored. Issues that achieve space on the public agenda and frames that dominate an issue's frame-space gain more than front-page status; they gain heightened, indirect access to nearly every part of the political environment, from citizens' living rooms to Pennsylvania Avenue. Front-page issues and frames provide the stuff of hallway conversations, lobbying leverage points, and the nation's to-do list. Whether shifts in agenda-setting and issue-framing happen gradually, sporadically, or through the governance of dimensional information processing, these dynamics have important political consequences. In my dissertation, I will analyze the processes of agenda-setting and issue-framing across time and across policy issues, assessing patterns of change. I will provide important new testing ground for the theory that agenda-setting dynamics

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[10] Recent cognitive science work in "latent semantic analysis" shows that the statistical technique of factor analysis mirrors the automatic processes at work in the human brain by which people understand and construct language (Landauer and Dumais 1997). In this way, factor analysis is a natural fit for studies of issue-framing since at a most basic level framing uses specific key words in tandem (i.e., common variance) to craft a description of an issue within the parameters of a favored dimension (see also Baumgartner, De Boef and Boydstun 2004).

follow a pattern of disproportional information processing. And I will offer my own theoretical contribution, testing the hypothesis that this pattern likewise governs the issue-framing process.

In order to test these two theories, I use innovative methods that, as I have demonstrated here, produce reliable results at a fraction of the time as traditional approaches, thus allowing a broader test of both theories than previously accomplished or thought possible. Since I am the first to apply these methods to a study of media issue-framing, my dissertation will provide opportunity for further development and refinement of this approach. Using these methods, I will construct two original and publicly-available datasets. The first will provide a detailed sketch of the entire agenda of *NYT* front-page policy news from 1960-2002, showing not only how attention to individual issues rises and falls over time but also how much of the total attention each issue receives, how the number of issues sharing the agenda changes over time, and most importantly whether the basic patterns of agenda-setting change across issues or across time. The second dataset will show how the framing of a policy debate shifts across time and across multiple policy issues. This dataset will paint a picture of how often instances of reframing occur, whether the frames that drive the redefinition of policy debates retain prominence in those debates over time or die out quickly, and how much variance exists in patterns of framing across different types of issues.

Together, the Issues Dataset and Frames Dataset can be used to address a breadth of research questions within political science and beyond. (How) Does attention to issues in the media affect attention in Congress? (How) Do changes in frames cause changes in public attitudes? Do all instances of reframing arrive on the wave of social cascades, or are some issues reframed using other vehicles of change? Do minority voices find proportional representation on the agenda? Do the changing compositions of the agenda and issue frame-space reflect lobbying efforts, social movements, and partisan alignment? Answering these questions will advance our understanding of politics.

Research Schedule: From A to PhD

* From January through June, 2006, I will work independently to collect and analyze the entire Issues Dataset. I will also finish the theoretical and research design chapters of my dissertation.
* In July and August, 2006, I will draft a dissertation chapter in the form of a journal article, presenting findings from analysis of the Issues Dataset. I have submitted a proposal to present this paper at the Annual Meeting of the American Political Science Association in August.
* In the fall semester of 2006, I will train and supervise political science undergraduate assistants in compiling the Frames Dataset, beginning with the five policy issues shown in the Issues Dataset to have the most front-page attention over time. When the Frames data is complete for the five most prominent policy issues, I will draft a second dissertation chapter/journal article presenting these findings, and submit a proposal of this article to the Midwest Political Science Association for their annual meeting in April, 2007. I will also revise the Issues Dataset article for submission to a scholarly journal.
* In spring semester of 2007, as the research assistants complete the Frames Dataset for the remaining policy issues, I will complete the final chapters of the dissertation in time for a doctoral defense in June. I will also continue work on the article on framing in the five largest policy issues until it is ready for submission. The completed Frames Dataset will provide material for the first journal articles I will draft as an assistant professor.

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