

WHAT'S THE ISSUE? CHANGING FRAMES OF ETHANOL POLICY IN CONGRESS AND THE MEDIA

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On June 16, 2011 the United States Senate voted by a strong 73-27 majority to dramatically cut tax credits and tariff protections for ethanol producers. The vote amended an unsuccessful bill and ultimately did not change the law. The symbolic implications of the vote, however, reverberated through the walls of Congress and the pages of the news media. Carolyn Lochhead of the *San Francisco Chronicle* wrote that the vote “undermined the once-impregnable political support for corn subsidies” while Clifford Krauss of the *New York Times* argued that the action marked “a turning point in ethanol politics” (*San Francisco Chronicle* June 17, 2011; *New York Times*, July 7, 2011). Naftali Bendavid and Stephen Power from the *Wall Street Journal* concluded that the amendment “signal[ed] that other long-sacrosanct programs could be at risk” (*Wall Street Journal*, June 17, 2011).

Long before June 2011, Congress’s mood towards ethanol had begun to vacillate. The initial pro-ethanol consensus that permeated national debates in the early 2000s had slowly given way to mounting objections from diverse groups who questioned ethanol’s touted benefits and highlighted the unintended consequences of diverting significant agricultural resources to fuel production. Some new ethanol opponents, including environmentalists, began to change their position as novel information came to light. New issues also began to gradually surface, including ethanol’s impact on global food prices and ethanol subsidies’ compliance with international trade rules. As ethanol became a more “multidimensional” issue, members of Congress started to temper their previous enthusiasm, tweaking federal biofuels programs accordingly. Support

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for ethanol, rather than abruptly vanishing, simply ebbed to a particularly visible nadir with the June 2011 vote.

This paper will focus on a particular slice of this story: namely, the evolving “frames” used to discuss ethanol policy. Frames are the issue areas deemed relevant to the evaluation of a particular policy. New frames, including global food prices, international trade regimes, and the budget deficit, were added across time to older ethanol frames, including the environment, agriculture, and energy security, to create an increasingly complex issue environment for ethanol policymaking. Specifically, this thesis will investigate the origination and transmission of these new frames. Often treated as a “black box” phenomenon by political scientists, the creation and adoption of new policy frames has important implications for understanding preference-formation and congressional policymaking. In the pages that follow, I will attempt to address this critical question. Where did Congress “find” new ethanol frames? Did members of Congress frame ethanol policy for the media, or vice versa? And why did some groups adopt new frames while others lagged behind?

WHO FRAMES FOR WHOM?: THEORIES OF FRAMING IN THE MEDIA AND CONGRESS

Questions about how frames are constructed, transmitted, and received—and corollary questions of *who* constructs and *who* receives—are contested topics in scholarly literature. The body of work on “framing effects” has fractured across several disciplines, including communication studies, sociology, and political science, erecting barriers to a unified understanding of framing (Druckman 2010, 279). Additionally, research on framing has disproportionately focused on public opinion as the dependent variable, leaving framing’s impact on *elite* opinion under-theorized (Chong and Druckman 2011, 178).

Nevertheless, three general theories relating media and elite frames can be distilled from the literature: Elite Control, Institutional Fluidity, and Media Control. Because much of the literature

on framing does not speak directly to other scholarly works, these schools of thought should be viewed as a continuum of general orientations towards framing rather than starkly demarcated theories. The Elite Control theory, owing its roots to empirical political psychology, views framing as a unidirectional process beginning with elites, running through the media, and ending with public opinion. To theorists from this camp, frames are the tools of strategic politicians seeking to manipulate public opinion; like a river, they can only flow downstream. The Institutional Fluidity school, grounded in the agenda-setting literature, views frames as important but unpredictable variables that influence both elites and public opinion. To these scholars, frame-shifting occurs as part of a larger process of “punctuated equilibrium,” and frames hold little explanatory power independent of larger agenda-changing events. Finally, the Media Control orientation views media frames as potentially important influences on the frames used by elites. Scholars from this field see politicians not as pure rational actors but as culturally-situated and cognitively-bounded individuals susceptible to framing effects.

Elite Control

Scholars of the “Elite Control” school of thought see framing as a tool used by political elites to shape—or, more cynically, manipulate—public perceptions and preferences. The Elite Control model grew out of a seminal experiment conducted by Kahneman and Tversky in 1984. These researchers found that changing the rhetorical framing of two policies producing *mathematically identical* outcomes could dramatically change subjects’ preferences (Entman 1993, 54). Kahneman and Tversky’s work was followed by others’, including W.H. Riker’s *The Art of Political Manipulation* (1986) and J.R. Zaller’s *The Nature and Origins of Mass Opinion* (1992) which, according to Entman (1993, 57), raise “radical doubts about democracy itself.” These works conclude that “political elites control the framing of issues” and question the ability of the public to form “true” preferences independent of these elite frames (Entman 1993, 57).

The Elite Control scholars vary in their treatment of the media. While some see the media as essentially “duped” or constrained by the supply of information strategically doled out by elites (Shapiro and Jacobs 2001, 155), others highlight the potential for the media to interrupt the process of frame transmission from political elites to the consuming public (Callaghan and Schnell 2005, 11-2). Callaghan and Schnell (2005, 11) argue that while many scholars “equivocate on just how much the media create their own unique frames,” several studies provide evidence that, at least on some issues, the media have been able to assert independent issue frames. For example, they note that the media inserted new frames into the debate over gun control and resisted adopting some elite frames, including those of the pro-gun lobby (Callaghan and Schnell 2005, 11-2).

The Elite Control school of thought offers a helpful empirical starting point for the study of framing effects. Its grounding in political psychology and laboratory-based experiments offers essential confirmation of the importance of frames and their ability to be transmitted through political communication. This group of theories fails, however, to investigate the impact of framing effects on elites. Elite Control theories view political elites as strategic, rational actors who use frames as tools to influence the public. Left out, however, is a robust discussion of how frames may *indirectly* affect elite behavior by altering public opinion or *directly* influence elite opinion through the same psychological processes that operate on the mass public. If frames have such a radical impact on preference formation as Kahneman and Tversky (1984), Entman (1993), Druckman (2001), and others would have us believe, then why should elites be assumed exempt from these strong psychological forces? This school of thought also assumes that frame transmission is largely synonymous with opinion transmission. These authors do not consider the possibility that elites might transmit frames without also effectively transmitting dictates about how a policy would be evaluated in that frame.

Institutional Fluidity

A second school of thought ascribing to a theory of “Institutional Fluidity” situates media framing in the wider context of the agenda-setting literature. In general, theorists in this school see “issue redefinition” as part of a cyclical process of agenda instability and change. They are less concerned with whether media frames affect elite frames or vice versa; instead they view the causal arrow running both ways in a dynamic feedback loop.

Agriculture policy has long been a favored case study of institutionalists (Sheingate 2001, 12). First, the close ties between agricultural interest groups, congressional committees, and bureaucrats led scholars to describe agricultural policymaking as an “iron triangle” resistant to the intrusion of new interests or policy dimensions (Sheingate 2001, 6). Later, the decline of these agricultural iron triangles was cited as evidence of the emergence of more open “issue networks” with many openings for diverse political actors (Sheingate 2001, 6). Hecló observes that “expanding government” fractures interest groups across multiple, diffuse programs. He writes that “a key factor in the proliferation of groups is the almost inevitable tendency of successfully enacted policies unwittingly to propagate hybrid interests...[A]ctivist policies greatly increase the incentives for groups to form around the differential effects of these policies” (Hecló 1978, 96). Using the vocabulary of framing effects, we can understand “hybrid interests” and “differential effects” as the building blocks for multidimensional policies subject to various “issue definitions.”

Scholars of the Institutional Fluidity school of thought assess the media’s role in reframing through the lens of punctuated equilibrium. Baumgartner and Jones (1993, 108) argue that the media are targets of various groups advancing “noncontradictory argumentation,” [sic] a concept we can understand as differing frames of some policy issue. They argue that when one media outlet shifts focus to one of these various frames, others quickly follow, producing a “positive feedback” loop (Baumgartner and Jones 1993, 106). Baumgartner and Jones (1993, 104) thus describe the media as “lurching” from one topic to another in much the same pattern as policymakers. They write, “While underlying facts may change

only slowly, media coverage of those facts may shift dramatically from positive to negative, or from little attention to a sudden fascination” (Baumgartner and Jones 1993, 105).

Unfortunately, the descriptive appeal of the Institutional Fluidity model fails to translate into a rigorous understanding of how frames are constructed and communicated. These scholars tend to view the “punctuations” of punctuated equilibrium as dynamic events largely impervious to a generalizable model of change. Baumgartner and Jones (1993), for example, fail to explain what motivates the media to “lurch” from one focus to another or how outlets discern which new “noncontradictory argument” [sic] to highlight next. Baumgartner et al. (2009, 183) complicate the story further, cautioning that potential reframers must contend with a “skeptical media” that “will consider new frames presented to them with a jaundiced eye.” The strong status quo bias Baumgartner et al. (2009) observe does much for our understanding of policy stability but leaves the process of reframing under-theorized. Baumgartner and Jones (1993, 125) openly declare, “Media attention sometimes precedes and sometimes follows changes in attention by government agencies, so we do not mean to imply any simple causation here.” The decision to treat reframing as an endogenous product of agenda change rather than a potentially influential variable limits this theory’s ability to explain elite framing effects.

Where this model fails to theorize a robust model of frame *change*, however, it does implicitly offer explanation for frame *stability* on the part of issue advocates. Baumgartner et al. (2009, 114-5) explain that the status quo bias of agendas may create a “frame” status quo bias as well. Using the example of criminal justice reform, they argue that despite increased media coverage, “the issue was so far off the formal political agenda that opponents of changes to the criminal justice system didn’t even bother to organize” (Baumgartner et al. 2009, 114-5). In this explanation, status quo supporters may fail to respond to reframing attempts because the friction inherent in the congressional agenda makes new frames obsolete. If defenders of current policies perceive those policies as largely stable, they may have no incentive to spend scarce time and resources

on fighting an ineffectual reframing effort.

Media Control

Scholarship from the final school of thought, “Media Control,” is more loosely tied together than the first two schools but shares a basic assumption that policymakers face the same psychological and cognitive limitations as their constituents. Baumgartner and Jones (2005), while adherents to the Institutional Fluidity school, lay important theoretical foundations for a foray into more psychological interpretations of elite behavior in their book *The Politics of Attention*. Baumgartner and Jones (2005, 16) argue, “Decision makers in politics, like elsewhere in life, are boundedly rational.” This may seem straightforward, but this precept starkly contrasts with the strategic, coldly-calculating politician as understood by the Elite Control school of thought. Baumgartner and Jones (2005, 16) highlight several psychological difficulties facing policymakers, namely “selective attention,” “difficulties with trade-offs,” and “learning.” These cognitive limitations make politicians and the public alike susceptible to “subjective” evaluations of problems biased by the communicative package in which they are received. In fact, Baumgartner and Jones (2005, 16) highlight that the psychological difficulty we face in comparing unlike things creates the capacity for frames to strongly influence our decision calculus. They write, “Trade-off calculations, so easily modeled in economic choice by indifference curves, are extraordinarily difficult for people to make... [P]roponents almost always ‘frame’... information, stressing one perspective and ignore others. This plays to the serial processing capacity of the audience...” (Baumgartner and Jones 2005, 16). While Baumgartner and Jones (2005) use this discussion to inform their Punctuation Hypothesis, they leave much room for further theorizing about the psychological impact of frames on elite opinion.

By theorizing politicians as potential frame-recipients, Media Control theories offer an evaluative lens that the Elite Control and Institutional Fluidity schools do not. This theorizing draws

on the useful contributions of other fields of research, including psychology and sociology, to craft a more robust understanding of political elite. Unfortunately, the Media Control school of thought lacks strong empirical tests of its theories; case studies and deductive heuristics stand in for data-based evaluation. Media Control theories offer a valuable starting point in studying framing effects on elites, but they leave many empirical questions open for further investigation and may exaggerate the importance and autonomy of media influence.

Evaluating the Three Theories

The three schools of thought discussed above—Elite Control, Institutional Fluidity, and Media Control—each offer useful insights into the question of elite framing effects. The Elite Control theory, grounded in empirical and laboratory-based tests, highlights the ability of framing to influence preferences and perceptions. This school fails, however, to contextualize its theories to the dynamic process of framing in the real world. While laboratory experiments show the seemingly dangerous power of frames and portend a hollowed-out public subject to elite manipulation, the operation of frames in actual political discourse is much less ominous. The Institutional Fluidity model reflects the importance of contextualizing framing in the process of agenda change. Far from functioning as the exclusive tool of elite manipulation, frames can open up the political process to new interests and arguments. This theory fails, however, to specifically theorize the role of frames in influencing elite frames or opinions. The causal arrow is presumed to run both ways. The Media Control school of thought does treat political elites as potential *subjects* of framing effects, incorporating essential findings from other fields of social and laboratory science. This field, however, has thus far failed to produce models of frame transmission based on empirical study. Each field offers important contributions to a more advanced study of elite framing that includes empirical research on framing, contextualization of frames in larger processes of agenda instability, and a robust understand-

ing of politicians and their cognitive limitations. I intend to borrow from each of these fields in crafting an empirical case study of elite framing effects around ethanol policy.

MEASURING FRAMES

Has media framing been able to influence congressional framing of ethanol policy? I hypothesize that as the incidence of new media frames increases, so will the use of those frames by members of Congress. Furthermore, I expect to find that changes in media framing have *preceded* changes in congressional framing, at least in some instances. In its simplest terms, my hypothesis can be modeled as the following:



What is a frame and how can we tell it has been transmitted? For the purposes of this analysis, I define a frame in Druckman's (2010, 280) terms, namely as an indication of the *salience* of a particular issue dimension to the policy issue under consideration. This treatment of framing largely sidesteps the question of preference—whether ethanol subsidies are “good” or “bad” policy—and focuses the analysis on what dimensions are deemed *relevant* to the formation of those preferences. Separately, I measure whether ethanol is evaluated positively or negatively within each frame, but this measurement is entirely distinct from whether a frame is *present*. Furthermore, frames can include both “offensive” and “defensive” posturing (Lehrer 2010, 102). For example, both of the following sentences contain an environmental frame: “Ethanol helps fight global warming by reducing our use of fossil fuels” and “Ethanol does not help reduce carbon emissions because significant amounts of petroleum are required for corn farming and ethanol production.” Even though the *content* of the latter sentence indicates environmental concerns do not justify ethanol support, the perceived

need to answer this argument conveys the impression that the environment is a *salient consideration* to ethanol debates.

A second concept in need of definition is the process of frame transmission. How can we know if a Congressperson has “received” a frame, allowing the salience of some policy dimension to increase relative to others? This endeavor would involve significant interviews and psychological investigation beyond the scope of this thesis. Rather, this empirical analysis focuses on congressional *frames* instead of framing effects *on Congress*. The former formulation fashions the *statements* of Congresspersons, rather than Congresspersons themselves, as the dependent variable. Lehrer argues that the frames used by Congresspersons reflect the issues they have deemed salient in their own personal policy calculations. She writes, “The prevalence of... frames across groups suggests they also provided a certain if perhaps intangible utility in policy circles. The fact that they were echoed in the halls of Congress... indicates that they resonated with policymakers as well” (Lehrer 2010, 102). In this way, congressional frames serve as a proxy for the framing effects, if any, influencing members of Congress.

Sample Selection

I create a dataset of “media frames” by sampling from selected national and regional newspapers. Focusing on print media may ignore potential television- or multimedia-specific framing effects, but it seems unlikely that a new frame could emerge from one type of “the media” without affecting other areas. Thus print media can serve as a useful proxy for media framing in general. Furthermore, it would be extremely difficult to isolate the whole universe of television and multimedia communications mentioning “ethanol.” Sampling and analyzing print media is far more practical, accessible, and replicable than surveying all media frames.

To create my media dataset, I use the search engines Nexis, ProQuest, and Access World News to generate a population of all news articles containing the word “ethanol” and one of several words which indicate a reference to federal ethanol policy. From

these search results, I select articles at regular intervals to form a sufficiently large-N sample. This search engine-based technique has often been used in other content analysis studies (Neuendorf 2002, 75), including analyses of agriculture policy (Lehrer 2010, 124; Wright and Reid 2011, 1392).

I separate the media dataset into two smaller subsets. The first, representing “national media,” contains articles from the top five newspapers in the United States, as measured by circulation volume in 2010. These include the following, in order from highest to lowest circulation: *The Wall Street Journal*, *USA Today*, *The New York Times*, *Los Angeles Times*, and *The Washington Post*.

I limit this sample to the top five national papers because I want to include only the most likely sources of Congresspersons’ “national news.” While containing local content, each of these papers attempts to offer significant coverage of national stories and events. The second media data subset, representing “regional media,” contains “local and regional” papers, as classified by the Access World News search engine. I divide the United States into four regions—South, West, Midwest, and Northeast—as shown in *Figure 1 (online)*. Importantly, the 12 states contained in the Midwest region also represent the 12 states with the largest ethanol output and production capacity in 2010 and 12 of the top 13 corn-producing states of 2010 (Schnepf 2010, 15; National Corn Growers Association 2011, 12).

I measure “Congressional frames” using statements entered into the congressional Record. The congressional Record (CR) holds a nearly verbatim account of congressional floor proceedings as well as “extensions” of floor remarks voluntarily added to the CR by members of Congress. The CR presents the unique advantages of a centrally-organized, searchable database of public statements by Congresspersons. Some may argue that the CR is a less “public” source of frames than campaign speeches or press releases. However, rarely does a Congressperson give a congressional floor speech without considering the potential public reception of his or her comments. Additionally, to the extent that the CR may reflect the less publicized thoughts of politicians, it may further elucidate un-

derlying assumptions about issue salience that become edited out of more high-profile statements.

To create a dataset from the CR, I follow a similar procedure to that used in the creation of my media datasets. Omitting entries from the “Daily Digest,” a summary of each day’s proceedings, I search for all entries in the CR including the word “ethanol.” The CR contains statements by Congresspersons as well as the text of bills, amendments, and other congressional business; only statements which can be attributed to a single speaker are coded. When a single entry contains multiple short speeches from various Congresspersons, the statement of the first speaker who mentions “ethanol” is coded.

My dataset includes news articles and CR entries from September 1, 2005 through September 1, 2011. This timespan includes an arc of congressional support for ethanol, beginning from its apex in 2005 and descending to its nadir in 2011.

This time period includes variation in ethanol’s popularity, ethanol policy, and ethanol frames. Six years should be a wide enough time period to capture “transmission” effects, if any exist.

Methodology

My thesis utilizes content analysis, “the systematic, objective, quantitative analysis of message characteristics” (Neuendorf 2002, 1). Content analysis relies on the rigorous creation of a universally-applicable coding scheme which allows for the “measurement” of text. I record many different characteristics of each document in my dataset, including potentially relevant identifying information, the document’s stated or implied “opinion” on ethanol policy, and the frames used in each document when discussing ethanol.

Each document in the dataset is coded on the basis of nine frame categories: budget, economy, trade, food prices, energy dependence, energy prices, environment, agriculture, and other. Each frame is assigned a simple binary present/not present score. Thus a score of “1” means that a particular frame is used in the document; a score of “0” means that the frame is not used. A frame is considered

present if the issue area it covers is presented by the document as a relevant consideration to discussion of ethanol policy. The frame could be positive or negative, an “offensive” argument or a “defense” rejoinder. As long as the frame is presented, its rhetorical or strategic use by the author is considered irrelevant to this score.

Content analysis poses several unique methodological challenges. First, creating a robust research design requires generating a pre-determined list of code-able variables *before* the analysis begins (Neuendorf 2002, 11). An inductive approach which creates a “running list” of ethanol frames, for example, would fail to produce a uniform classification system. This approach would offer no avenue for comparing discrete frame categories against each other. To address this problem, I selected a sub-sample of 60 documents from my dataset and from them induced this list of mutually exclusive frame categories.

The second puzzle posed by content analysis is the need to craft a valid coding scheme which approximates an objective measurement. If only one individual can use the scheme, or if multiple individuals produce significantly different measurements, then the coding scheme has little utility as a tool of measurement. I attempt to improve “intercoder reliability” in several ways. First, I produced a uniform coding manual which provides step-by-step instructions for coding and definitions of code values. I hired a student research assistant to code approximately half of my dataset, and we went through several iterations of the “code book” before arriving at a finalized draft which consistently produced agreement in our codes. Second, after working together to develop consensus on many “trial” documents, my research assistant and I did not consult each other while coding the actual dataset. We intentionally “double-coded” slightly more than 10% of the dataset, giving us a good baseline to compare our agreement and test the reliability of our coding throughout the dataset (Neuendorf 2002, 51). Third, I randomized the order of the dataset and the assignment of each document to a coder. This randomly disperses coding errors across the sample, preventing differences in coders from appearing as significant chronological patterns.

Assessing the quality of intercoder agreement produced by these efforts is a complicated endeavor. Measured as a simple proportion of instances of agreement divided by total opportunities for agreement, intercoder reliability reaches the high score of 90.5% (Neuendorf 2002, 143). However, this calculation includes a high proportion of mutual “not present” scores.

We are less interested in the instances in which both coders assessed a frame to be absent than when only one coder assessed a frame to be present. In the sub-sample of double-coded documents, approximately 7% of documents are mutual 1s while about 9% are 1-0s (or 0-1s). In stark contrast to our promising 90.5% score, this seems disappointing. However, several factors caution against assessing intercoder reliability to be irrecoverably low. First, this “1-0” measure effectively double counts errors. If we assume that when disagreement exists, one coder is “right” and the other is “wrong,” then only half of the “1-0” measure reflects an error. Given the subjective nature of framing, it would be impossible to determine whether the 1 reflects an “over count” or the 0 reflects an “under count.” It is unlikely, however, that in every instance when coders would have disagreed in the larger dataset, the actual coder was the “wrong” one. Second, the null hypothesis implicit in the “1-0” measure would predict the mutual 1 count to be much lower than measured. If coding were operating by chance, we would expect 25% mutual 1’s, 50% 1-0 or 0-1s, and 25% mutual 0s. Compared to these changes, the mutual 1’s in the sample are much larger than we would expect. Finally, these 1-0 “errors” may in fact have an analytical benefit. Frames that are clearly present are more likely to be coded as mutual 1’s than questionably present frames. In effect, a 1-0 score in the subsample reflects that these “questionable” frames were only coded about half of the time in the actual dataset. Thus, the dataset likely “over counts” strongly present frames vis-à-vis weakly present ones, effectively generating a weighted score out of the assessed binary present/not present score. The subsample does not show any systemic under- or over-counting by any one coder (meaning the proportion of 1-0s to 0-1s is close to 50/50), adding further support to the notion that 1-0s reflect weakly pres-

ent frames instead of systemic coder error.

Before proceeding to my results, two further caveats are in order. First, sample size plays a large role in measuring the presence or absence of frames. Although over 700 documents are coded, the per-frame count is only a fraction of this number. This means that some nuance is lost in analyzing patterns of transmission for *each* frame. Instances of frame leaders or followers may be missed in sampling, making patterns more difficult to detect. Second, beginning the dataset in September 2005 may exclude interesting frame transmission patterns from earlier years. It is possible that in instances where no leaders appear present, frame leadership in fact occurred before the time period included in the dataset.

The Dataset

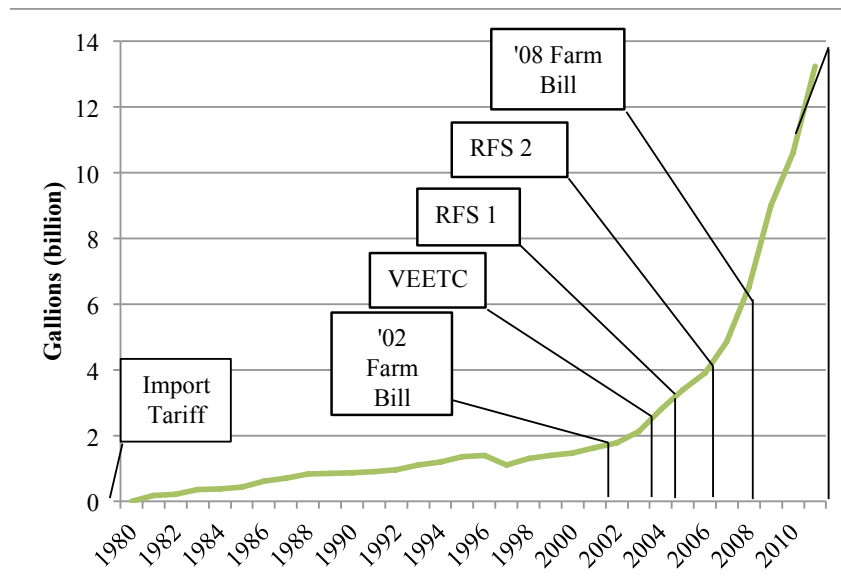
The complete dataset includes 702 documents. Of those cases, 499 are codeable observations, defined as a document containing requisite identifying information and at least one frame of ethanol. This dataset is the product of three separate samples of the congressional Record, national media, and regional media. Attempts were made to generate roughly equal numbers of observations in each of these categories to create more comparable data. To achieve this comparability, each document type was sampled at a different rate. After generating the universe of documents containing “ethanol” with various search engines, every fifth CR document, every fifteenth national media document, and one out of every 150 regional media documents was selected for inclusion in the sample. This generated three roughly equal subsamples, with 153 CR documents, 155 national media documents, and 191 regional media documents. This sampling procedure aids in comparing the *relative* prevalence of frames across document types, but it washes out any *absolute* differences in framing effects. For example, many more regional media documents than CR records appeared in the universe of documents containing a discussion of “ethanol,” yet the sampling procedure has intentionally equalized this difference. This is not a significant limitation; after all, the original universe of

documents created by search engines does not include *every* frame communicated by Congress or the media, so any attempt at making absolute comparisons would be misguided. However, this caveat should be kept in mind when interpreting graphs and results.

Ethanol Policies and Opinions

Over the past four decades, the federal government has rolled out a wide array of support for the biofuel industry, including loans, grants, tax credits, subsidies, fuel mandates, and tariff protections. In 2009, total outlays for these programs ranged between to \$6 and \$8 billion (Schnepf 2010, 1). Among this thicket of programs covering an array of biofuels, three principle ethanol policies stand out: the ethanol import tariff, the volumetric ethanol excise tax credit (VEETC), and the Renewable Fuel Standard (RFS) (Schnepf 2011, 3). *Figure 2* displays a timeline of these programs, mapped against growing ethanol production.

Figure 2. Annual US Ethanol Production, 1980–2011



Note: Ethanol production data from the Renewable Fuels Association, 2011, <http://www.ethanolrfa.org/pages/statistics>

The period from 2000 to 2005 saw three major pieces of legislation that significantly impacted ethanol policy. The first, the Farm Security and Rural Investment Act of 2002, was the first farm bill to include an explicit energy title (Schnepf 2011, 3). Responding to rising domestic and international oil prices, Congress included several programs designed to spur increased research and use of biofuels (Schnepf 2011, 3). The next major ethanol provision, the VEETC, originated in the American Jobs Creation Act of 2004 (Schnepf 2011, 3). The VEETC provides a 45 cent tax credit for every gallon of ethanol that oil companies blend into their gasoline (Schnepf 2010, 22). Finally, in 2005 Congress passed the Energy Policy Act (EPACT). Among other programs, EPACT created a renewable fuels mandate which required 4 billion gallons of ethanol to be used in 2006, followed by increasing target levels through 2012. This first Renewable Fuels Standard (RFS1) set a guaranteed demand “floor” and, along with petroleum disruptions on the heels of Hurricanes Katrina and Rita, enabled ethanol production to skyrocket (Schnepf 2010, 9).

Biofuel policy after 2005 began to target a slightly more diversified profile of renewables. The Energy Independence Act of 2007 (EISA) created a second, modified RFS (RFS 2) which mandated nine billion gallons of renewable fuel be used in 2008 and 36 billion by 2022 (Schnepf 2010, 10). RFS2 allowed only 15 billion gallons of corn ethanol to count towards the mandate, leaving the rest to be met by cellulosic and “advanced” biofuels (Schnepf 2010, 10). The 2008 Farm Bill echoed Congress’s “refocus” away from corn ethanol, enacting new programs to support the research and development of “advanced” fuels (Schnepf 2011, 4). Despite these modifications to the RFS and new R&D programs, the other two centerpieces of federal ethanol policy—the import tariff and the VEETC—remained staunchly intact.

That changed on December 31, 2011 when the import tariff, VEETC, and other subsidies were allowed to expire, “ending an era in which the federal government provided more than \$20 billion in subsidies for use of the product” (New York Times, January 1, 2012). This expiration had been preceded in June by a Senatorial

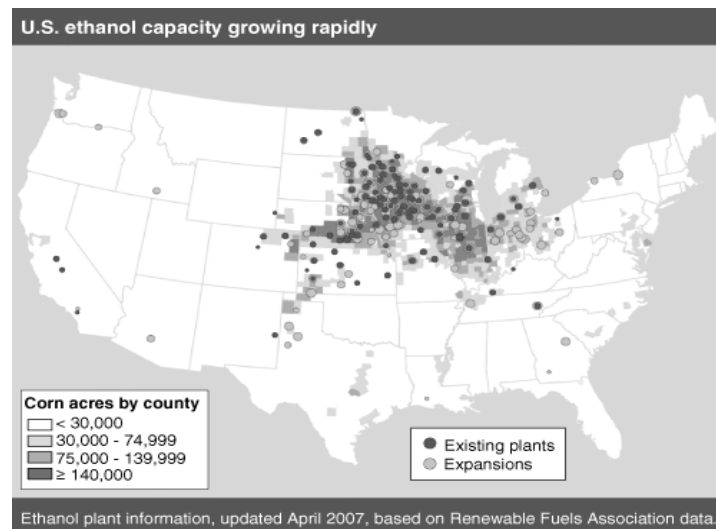
test-balloon amendment which, had its parent-bill passed, would have prematurely cut these subsidies before their end-of-year sunset. As of this writing in early 2012, the only leg of the ethanol support tripod that remains standing is the RFS, and this mandate continues to de-emphasize corn ethanol with each additional benchmark requirement. It remains to be seen what modifications, if any, the 2012 Farm Bill will make to federal ethanol policy.

Geographic Characteristics

In the United States, corn production is primarily concentrated in the Midwest. There is much geographic overlap between the areas of high corn growth and areas with a high concentration of ethanol plants (*Figure 3*). In 2010, the nine states which produced over 500 million bushels of corn^{*} were also the nine states with the greatest ethanol output and production capacity (National Corn Growers Association 2011, 12; Schnepf 2010, 15). Unsurprisingly, corn ethanol's importance to these Midwestern states has translated into the voting behavior of their political representatives (Schnepf 2010, 22). In the June 2011 Senate vote to repeal ethanol subsidies, for example, only one of 18 Senators from these top nine states defected and voted in favor of the amendment.

* In order, from greatest to least: Iowa, Illinois, Nebraska, Minnesota, Indiana, Kansas, South Dakota, Ohio, Wisconsin

Figure 3. US Corn Production and Ethanol Capacity, 2007

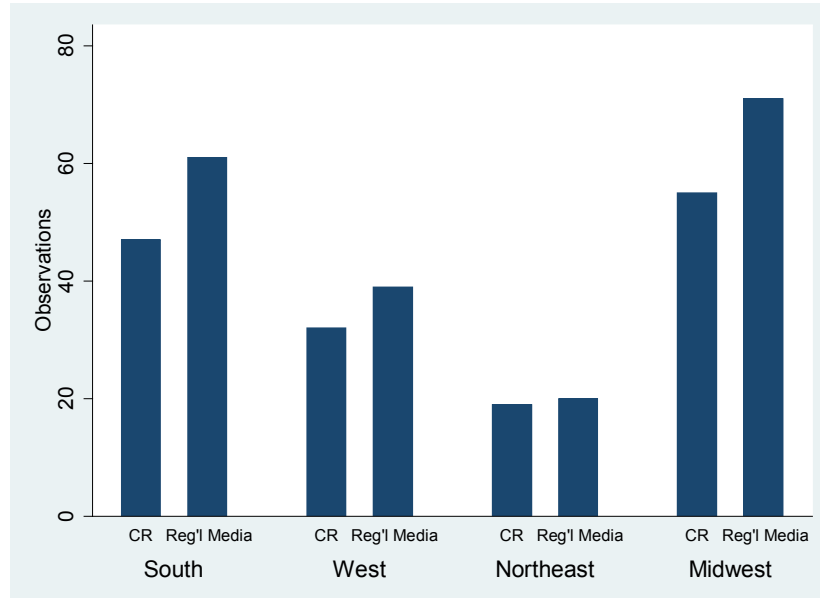


Reprinted from Paul C. Westcott, "U.S. Ethanol Expansion Driving Changes throughout the Agricultural Sector," September 2007, <http://www.ers.usda.gov/AmberWaves/September07/Features/Ethanol.htm>

This regional concentration of ethanol *production* is also present in ethanol *discussions*. Both the CR and regional media samples display a regional bias in the presence of documents which mention and include at least one frame regarding ethanol. Unsurprisingly, the Midwest region represents the largest chunk of the sample, although the South is a close second (*Figure 4*). In both the South and West, Texas and California, respectively, seem to be inflating regional document counts. Although the South is generally a low corn- and ethanol-producing area, Texas is the partial exception. Texas is the twelfth largest corn producer and is ranked tenth in overall ethanol production facilities (National Corn Growers Association 2011). The importance of ethanol in Texas, combined with its large population, helps to explain the large Southern representation in the sample. The Northeast is by far the least-active region, representing just over 11 percent of the sample and containing just around one-half of the documents of the West, the third-ranked region. As we might expect, ethanol and ethanol policy are talked about more by Congresspersons and media outlets from the Midwest and South, where corn and ethanol are relatively impor-

tant, than by Congresspersons and newspapers in the West and Northeast.

Figure 4. Regional Variation in Documents Discussing Ethanol



Changing Opinions on Ethanol Policy

In general, federal ethanol policy has followed a parabolic path over time, slowly increasing throughout the 80s and 90s, peaking around 2005, and declining precipitously from 2006 to late 2011. This dataset, beginning in September 2005 and concluding in September 2011, captures the latter half of this parabola. This period of time saw both significant changes in the *frequency* of ethanol discussions and the *opinions* towards ethanol support expressed in those discussions by both Congresspersons and the media.

Discussions of ethanol were much more prevalent in the period from 2006 to early 2008 than in later years, although there was a moderate spike around 2011. This higher volume* in the 2006-2008 periods makes sense in context of the congressional agenda; debates over the 2007 Energy Independence Act and 2008 Farm Bill were in full swing during these years. The relative period

* "High" here is only used as a *relative* term comparing ethanol discussions across time. Due to sampling methods, this dataset does not allow us to measure *absolute* prevalence of ethanol discussions.

of “quiet” in the sample from mid-2008 to early 2011 mirrors the absence of significant ethanol legislation in Congress during this time period. Similarly, the moderate uptick in ethanol discussions in 2011 occurred simultaneously with debates in the Senate over the amendment to end ethanol subsidies and with general debates over federal expenditures during budget negotiations. In this sense, the congressional agenda influences the prevalence of ethanol discussions in both the CR and media outlets. The curves for the CR and a combined “media” set look similar (*Figure 5, online*). Some might argue that this proves strategic politicians can “manipulate” media coverage, but that would be an overly-cynical interpretation of a predictable phenomenon. The media covers news, and congressional lawmaking qualifies as news. More interesting would be if Congresspersons could influence how the media *frames* their coverage of ethanol. As we will see in later chapters, that is a significantly murkier picture.

Opinions towards ethanol show a decidedly negative trend over time, generally mirroring waning support in congressional policies. Each document in the dataset was coded for the presence and direction of the speaker or author’s “opinion” on ethanol support. Most CR statements (almost 80% of codeable observations) expressed an opinion on whether federal ethanol promotion should remain the same, increase, or decrease. Statements supporting the status quo or an increase in ethanol support were coded as favorable opinions; statements favoring a decrease in ethanol support were coded as unfavorable opinions. In contrast to the CR, only about 30% of observations from national and regional newspapers expressed an opinion on ethanol support. Given the norms of objective journalism, this difference seems plausible and reasonable. This skew could make us hesitant to discuss “overall” opinions on ethanol, given the bias towards the CR. However, if we think about both the national and regional media as representing one “media” group, then the number of CR documents and the number of media documents expressing an opinion on ethanol is roughly even.*

* Exactly 123 CR documents express an opinion, in contrast to 41 and 61 national media and regional media documents, respectively. The combined “media” dataset contains 102 documents expressing an opinion.

Figure 6. Monthly Opinion on Ethanol Support from Sept. 2005–Sept. 2011

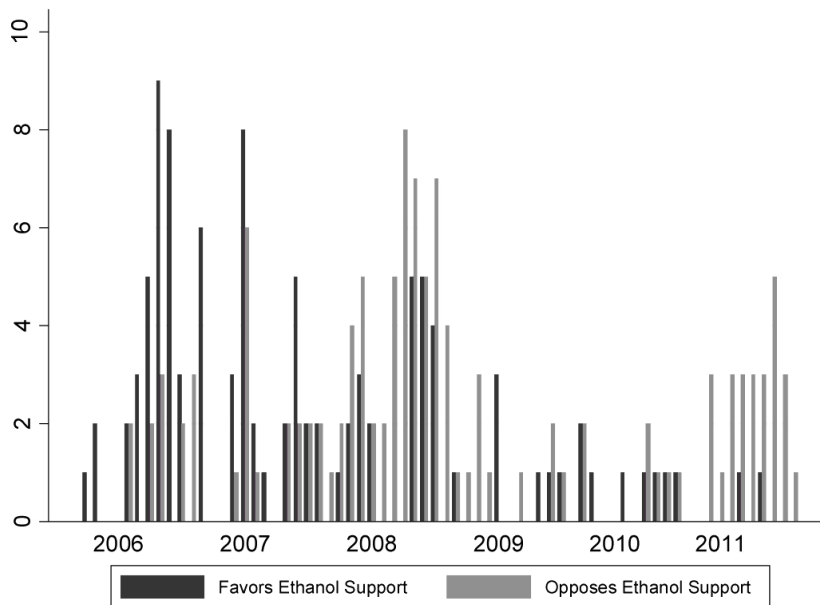


Figure 6 shows the number of documents expressing a favorable opinion on federal ethanol support over time as compared to documents expressing a negative opinion. Both the *clustering* and *height* of the bars in Figure 6 are important. Each bar represents about one month, so the height of each bar represents the number of documents expressing a positive (or negative) opinion in that amount of time. A tight cluster of bars shows that this phenomenon continued in following months. Figure 6 shows that negative opinions on ethanol support were by no means rare as early as 2006, but the number of documents expressing a positive opinion in 2006 far outweighed those making an objection (39 and 13, respectively). From 2007 to 2008 the tide began to turn against ethanol support, with the tone of CR and media documents becoming conspicuously negative by the end of 2008 and beginning of 2009. In 2007, the number of positive and negative documents were almost dead even (28 and 27, respectively), but in 2008 and 2009 negative evaluations comprised two-thirds of documents

which offered an opinion. The following two years were a period of relatively few ethanol debates, but when discussion picked up again in 2011 the overwhelming consensus was against ethanol. In 2011, 22 documents expressed a negative opinion on ethanol, compared to only 2 supporters.

Figure 7. Opinion on Ethanol Support as a Weighted Score, Sept. 2005 – Sept. 2011

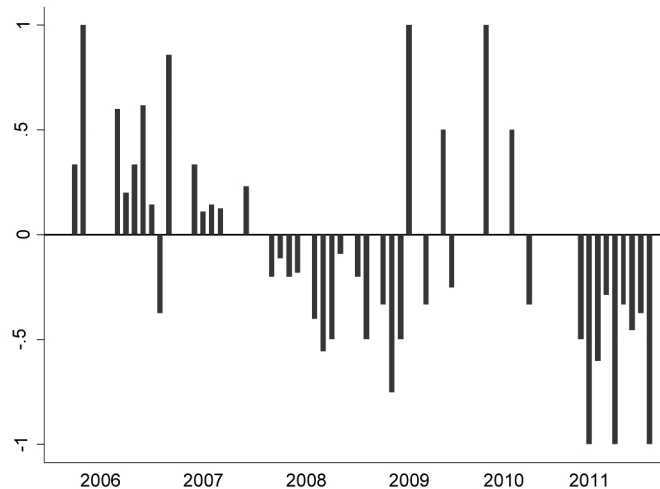


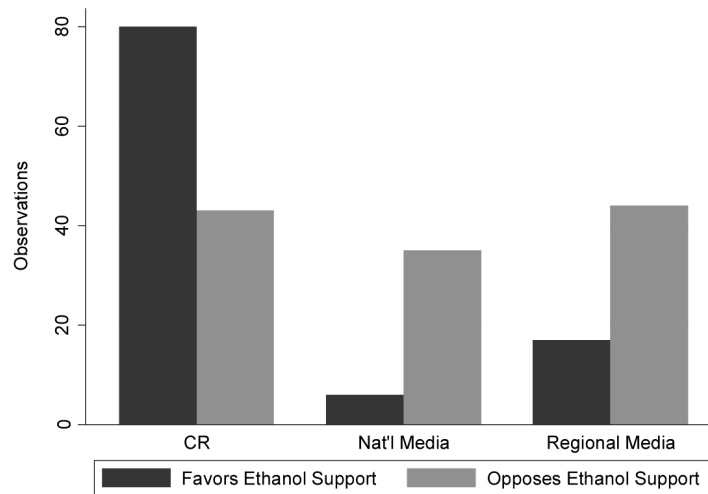
Figure 7 shows the relative weight of these negative opinions as a proportion of all ethanol discussions. This weighted score allows us to control for the fact that ethanol was simply talked about more during the period from 2006 to 2008 than from 2009 to 2011. First, a raw score was generated for each time period such that:

$$\text{Raw opinion score} = \text{Number of documents with a positive opinion} - \text{number of documents with a negative opinion}$$

Next, this raw opinion score was divided by the total number of observations in a given time period to generate a weighted opinion score. This weighted score shows that, for example, 100% of all documents in several months in 2011 were entirely negative. Figure 7 shows that while opinion on ethanol was mostly negative from late 2007 until late 2010, negativity became the dominant feature

of discussion by 2011.

Figure 8. Opinion on Ethanol Support by Document Type

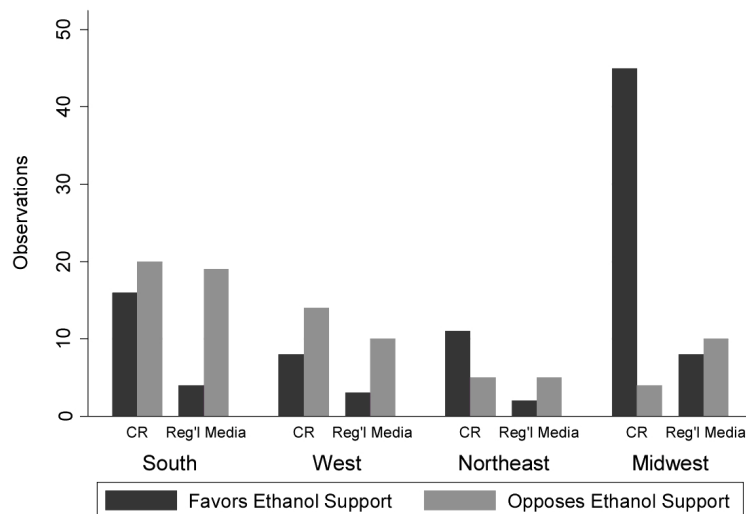


A final feature of this changing opinion is a noticeable distinction between opinion in the CR and media outlets (*Figure 8*). In general, when national and regional newspapers do express an opinion on ethanol, those opinions are largely negative. The media covers negative opinions twice as often as it does positive ones. In contrast, the CR is disproportionately approving of federal ethanol support. In the CR, positive opinions are twice as frequent as negative ones. Over time, the CR pattern follows the general opinion trend described above, but the CR is clearly lagging (*Figure 9, online*). From September 2005 through 2007, the CR was overwhelmingly positive; 88.5% of all speakers express a favorable opinion towards federal ethanol support in this period. The CR began to flirt with negative opinions in the period from 2008 to 2010, with about 45% of speakers expressing a negative opinion. By 2011, Congresspersons' opinions became decidedly negative. In the 9 months of 2011 included in the studied time period, 88.9% of all speakers stated a negative opinion on federal ethanol support, the mirror image of ethanol's strong support in 2006 and 2007.

Further digging shows that a sharp regional divide explains

much of the variation in opinions. Even though the CR tends to be more positive than the media, a large chunk of this support can be attributed to members of Congress from the Midwest (*Figure 10, online*). In fact, the CR entries from Congresspersons from both the South and the West contain more negative statements than positive ones. When compared to the coverage in other regions, Midwestern newspapers seem disproportionately complimentary of ethanol support as well. This effect is dramatic but not unexpected; corn and ethanol are much more important to the readership and constituents of Midwestern Congresspersons and newspapers than in any other region. From our data, it would be impossible to say whether this bias is *pandering* (i.e. intentional misrepresentation or overstatement of ethanol's benefits) or simply a difference of opinions based on local experiences. In other words, we cannot say whether Midwestern documents are more supportive of ethanol because the speakers and writers *believe* ethanol is good or because they believe they must *say* ethanol is good to maintain votes and circulation numbers.

Figure 10. Regional Variation in Opinion on Ethanol Support



Ethanolomics

Like many issue areas, ethanol has a unique political economy

shaped by federal policies, regional concentrations, and changing opinions. Three main themes should be remembered as we move forward to discuss ethanol's frame environment. First, despite agriculture's billing as an area characterized by a stable "iron triangle" of policy makers and implementers, ethanol policy has been far from static. Federal ethanol programs underwent many changes during the studied time period, creating ample opportunities and incentives for framing and re-framing. Second, ethanol production is geographically concentrated in the Midwest. This geographical concentration has significantly influenced the ways in which ethanol has been framed inside and outside of the Corn Belt. Finally, federal ethanol support has suffered a striking fall from grace since its heyday in the middle of the decade. Although varying substantially across regions and sources, this decline in opinion has important implications for ethanol's framing by Congresspersons and the media.

THE ETHANOL FRAME ENVIRONMENT

The frames that are used to describe an issue area carry great importance for policymaking. They shape the agenda, structure potential coalitions, and influence the preferences of politicians and their constituents. The ways that the media and Congresspersons obtain and transmit frames is thus enormously important to larger questions in American politics, including the manner in which incumbents represent (or manipulate) constituent preferences, the ways in which opinions on an issue change over time, and the tenor and content of "public debate."

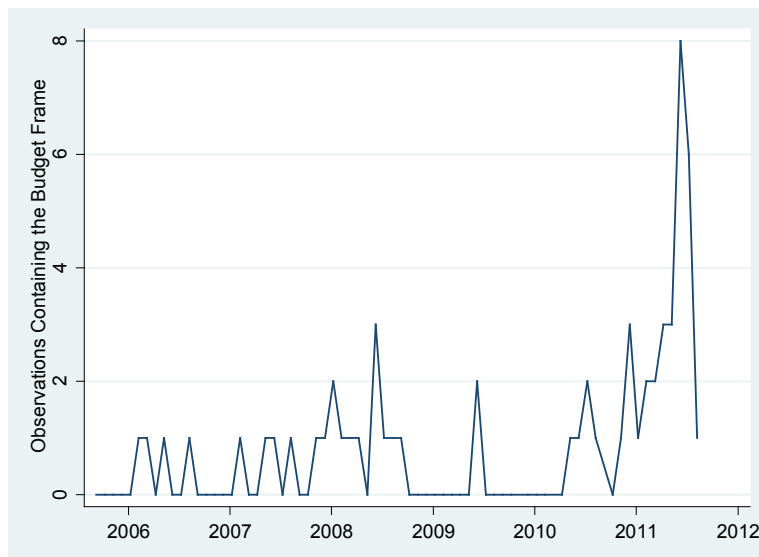
Using content analysis, I examine the use of nine different ethanol frames (*Figure 11, online*). Across the studied period of time, the most used frame was the environment, followed closely by energy dependence, agriculture, and energy prices. The budget and economy frames were used relatively infrequently, although some of this is explained by their variation over time. The trade frame was used rarely (only seven times in a sample of almost 500 codeable documents), so I will largely ignore this category in future

analysis. I will briefly describe each of the remaining frame categories (excluding “trade” and “other”), focusing particular attention on variation across time and whether each frame is used to positively or negatively evaluate ethanol policy. At the outset, I lump together CR and media frames in one measurement in order to better convey the general contours of ethanol’s frame environment. While reducing precision, this combination creates a denser time series and improves the overall “broad strokes” picture of ethanol framing. In the following chapter I will then split apart these document types to analyze patterns of transmission between these subcategories.

Budget

A document is defined as having used the “budget” frame if it discusses ethanol support as an issue which impacts the federal budget. Potential topics include discussion of the deficit, “government waste,” revenue, or “taxpayer dollars.” In general, the budget frame was used sparsely from 2005 to 2010, but its use skyrocketed during 2011 (*Figure 12*). This spike in the use of the budget frame occurred alongside debates in the Senate over ending ethanol subsidies and congressional budget battles in the summer of 2011. Furthermore, the budget frame became a dominant feature of all ethanol framing during this year (*Figure 13, online*). *Figure 13* shows the proportion of codeable observations which included a budget frame during the period of study. It shows that not only did the use of the budget frame increase in 2011, but the budget frame became a prominent feature of most discussions of ethanol. Put another way, budgetary considerations seemed so salient to discussions of ethanol that it seemed out of the ordinary for a speaker or author to mention ethanol *without* discussing its impact on the budget.

Figure 12. Use of the Budget Frame, Sept. 2005 – Sept. 2011



When coding documents, each frame was assigned an “evaluation” score. This score measured whether ethanol support would be considered “good” or “bad” if the given frame was the only metric of consideration. The evaluation was considered positive if the frame was used either offensively or defensively. For example, if a document said, “Ethanol support does not create a large burden on the national budget,” then ethanol would have been evaluated *positively* in the budget frame. This coding scheme accounts for the potential existence of both affirmative arguments and rejoinders in the changing discussion of ethanol policy.

Perhaps unsurprisingly given the nature of the frame and the time at which its use became most prominent, the budget frame is a highly “negative” frame (*Figure 14, online*). *Figure 14* shows the “Evaluation Score” of the budget frame, defined as the difference between the number of documents evaluating ethanol “positively” in the budget frame and the number of documents evaluating ethanol “negatively” in the budget frame. A negative score indicates that for a given time period, more negative documents were written than positive documents. The greater the absolute value of a score, the greater the imbalance between negative and positive documents.

For the budget frame, evaluations were almost entirely negative, becoming strongly so in 2011. This phenomenon is not due to “closely contested” evaluations from 2006 to 2010, but rather a general absence of positive framing. In fact, across the studied time period only 5 documents frame ethanol positively in the budget frame, as opposed to 48 evaluating ethanol negatively. Thus, budget evaluations did not become more negative because negative evaluations eventually outweighed positive evaluations, but rather because the number of negative evaluations skyrocketed without *ever* having competed with positive evaluations for bandwidth.

Economy

A document is defined as having used the “economy” frame if it discusses ethanol as an issue that impacts the national economy (outside of the agricultural sector) or jobs. Potential topics include, but are not limited to, discussion of employment, inflation, and the gross domestic product (GDP). The economy frame does not show much variation over time. It follows the same curve as overall observations: more use in the period from 2006-2008, a relative period of quiet from 2009-2011, and a moderate spike after 2011. This indicates that variation in the use of the economy frame is mostly due to changes in overall levels in ethanol discussions instead of some variable unique to the frame itself.

Figure 15, online shows that the economy frame is generally positive and does not change much over time. Unlike the budget frame, however, the economy evaluation is more “contested.” Even though the majority of documents containing the economy frame evaluate ethanol positively in this dimension (73%), a discernible handful of documents offer the opposite conclusion (24%).*

Food Prices

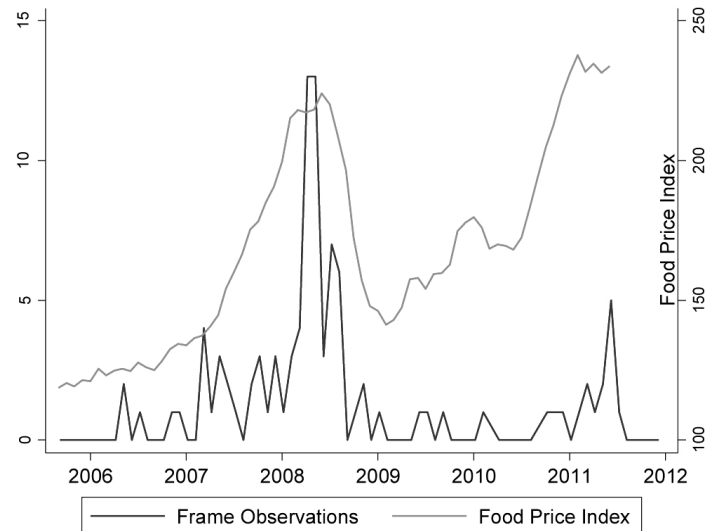
A document is defined as having used the “food prices” frame if it discusses ethanol as an issue that impacts the price of food

* The unaccounted 3% is attributable to documents offering neutral evaluations.

for *consumers*, either domestically or internationally. A document which only discusses food prices as an input cost for agricultural producers, such as livestock and poultry farmers, does not qualify as having used the food prices frame. These latter types of framing are coded only as agricultural frames. This distinction may seem trivial, but it lies at the heart of ethanol framing. Whether ethanol-induced changes in grain prices are considered a concern for *consumers in general* or only for *agricultural producers* is a crucial detail when examining what issue areas are deemed salient to ethanol discussions.

The use of the food prices frame showed a slight but noticeable uptick in late 2007, growing into a large spike in 2008 (*Figure 16*). This upsurge in the use of the food prices frame corresponded with a rise in global food prices, sparking economic troubles and political unrest in many of the world's developing countries (FAO 2012). Global prices eased in the beginning of 2009 but then began to climb again, topping 2008's highs by 2011 (FAO 2012). The use of the food prices frame closely mirrored the 2008 spike in food prices, growing steadily as the global Food Price Index rose. The frame curve also increased along with global food prices in the 2009 to 2011 period; however, the magnitude of the increase in *frame use* relative to the increase in *food prices* was much smaller than it was in the 2007 to 2008 period. In other words, the use of the food prices frame tended to increase as food prices rose across the whole 2005 to 2011 time period, but this affect was stronger before 2008 than after (*Figure 16*).

Figure 16. Use of the Food Prices Frame and the Food Price Index, Sept. 2005 – Sept. 2011



Note: Food Price Index based on international prices of a basket of food commodities. Data from the Food and Agriculture Organization of the United Nations, 2012, faostat.fao.org

There are a number of potential explanations for this discrepancy, including the possibility of a “boy who cried wolf” effect. After the food price crisis of 2008 abated, Congresspersons and newspapers may have been less inclined to react to a second surge in prices. Alternatively, ethanol opponents may have found the food prices frame less useful after passage of the 2008 Farm Bill which, along with the 2007 Renewable Fuel Standard, signaled a shift in emphasis towards cellulosic ethanol. This refocus was due in part to concerns over the link between corn ethanol use and rising food prices. After these policies were passed and food prices continued to climb, ethanol opponents may have decided that the link was too tenuous or that the necessary corrective policies were too extreme; thus, they decreased their use of the food prices frame.

Much like the budget frame, the food prices frame is overwhelmingly negative. Out of 88 documents which offered some evaluation in the food prices frame, only three evaluated ethanol

policy positively.* This indicates that little “debate” occurred over ethanol’s impact on food prices; those who used the frame overwhelmingly agreed that ethanol support adversely impacts food prices. Interestingly, this consensus is not reflected in the academic literature on the subject, which offers mixed interpretations of ethanol’s impact on food prices (Wallander, Claassen, and Nickerson 2011, 2).

Energy Dependence and Energy Prices

A document is defined as having used the “energy dependence” frame if it discusses ethanol as an issue that impacts the United States’ dependence on energy from foreign sources. This frame may be explicit or implied. For example, the sentence “Ethanol helps meet energy policy goals by promoting the domestic production of energy” uses an energy dependence frame without explicitly mentioning reliance on foreign oil producers. The “energy prices” frame discusses ethanol as an issue that impacts the price of other sources of energy, including gasoline, natural gas, and alternative fuels.

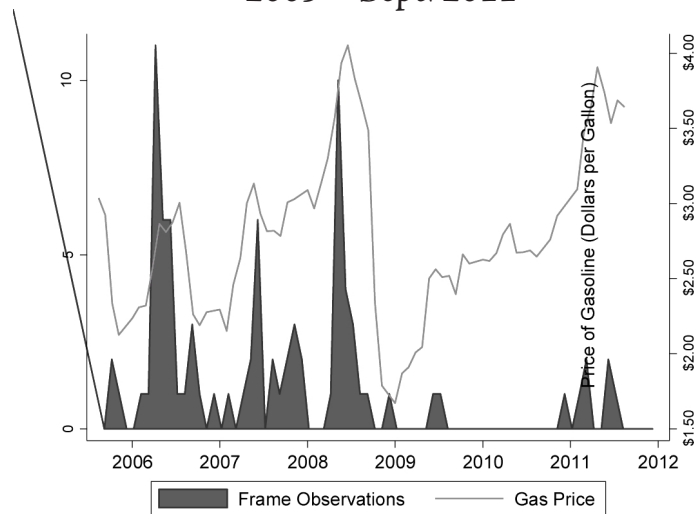
These frames are somewhat similar, but they tend to be used to make different arguments. The energy dependence frame is generally discussed in terms of national security, highlighting the threat of a sudden supply bottleneck or foreign manipulation. The energy prices frame, in contrast, focuses more on pocketbook issues facing the regular consumer paying “higher prices at the pump.” When a document notes the impact of energy dependence on prices, both frames are coded as present. While these frames overlap more often than other frame pairs, their co-occurrence is low enough to caution against combining them into a single category. Only 36% of documents containing an energy price frame also contain an energy dependence frame, and only 19% of documents containing an energy dependence frame also contain an energy price frame.

The two energy frames do, however, follow a similar pattern of use across time. *Figure 17, online* shows that both frames are

* Because so few documents evaluated ethanol positively in the food prices frame, no accompanying figure was included.

used more prevalently in the period from 2006 to 2008 than from 2009 to 2011. This timing corresponds with debates over energy in the run-up to the 2007 Energy Independence Act and the 2008 Farm Bill as well as with changes in retail gas prices. As the economic downturn dragged prices down in late 2008, use of these energy frames fell as well (Cooper 2011). However, the steady and significant recovery of gas prices since this time was not mirrored in energy frame use. *Figure 18* shows this trend starkly. *Figure 18* shows the use of the energy prices frame as compared to the price of gasoline in the first week of each month from September 2005 to September 2011. From 2006 to 2008, the use of the energy price frame spiked concurrently with gas prices in the summer months, when they tend to be highest. This trend did not, however, continue into 2009. The use of the energy prices frame fell off precipitously in 2009 along with gas prices, but only the latter recovered significantly over time.

Figure 18. Use of the Energy Prices Frame and Gas Prices, Sept. 2005 – Sept. 2011



Note: Price of gasoline based on the regular conventional retail gasoline price in the first week of each month. Data from the United States Energy Information Administration, 2012, <http://www.eia.gov/petroleum/gasdiesel/>

Both energy frames are generally positive. Sixty-eight percent

of documents using the energy dependence frame and 64% of documents using the energy prices frame evaluate ethanol positively. In general, however, evaluations within both of these frames trend negatively over time. *Figure 19, online* shows that the energy dependence frame was overwhelmingly positive in 2006; over 80% of documents containing the frame evaluated ethanol favorably. This supportive opinion began to wane, however, as slow-to-develop fueling infrastructure caused many to begin questioning ethanol's ability to make a serious dent in oil dependence. This negative sentiment became particularly noticeable in 2008 when positive evaluations dropped to just barely 50%, continuing to hover just slightly over the 50% mark for the rest of the studied time period. *Figure 20, online* shows a slightly starker trend in energy price evaluations, although this may be due to the lower number of total observations using the energy prices frame. Evaluations of ethanol in the energy prices frame were largely positive (72%) in 2005 and 2006. After this time, evaluations became more mixed, although still net-positive (58%).

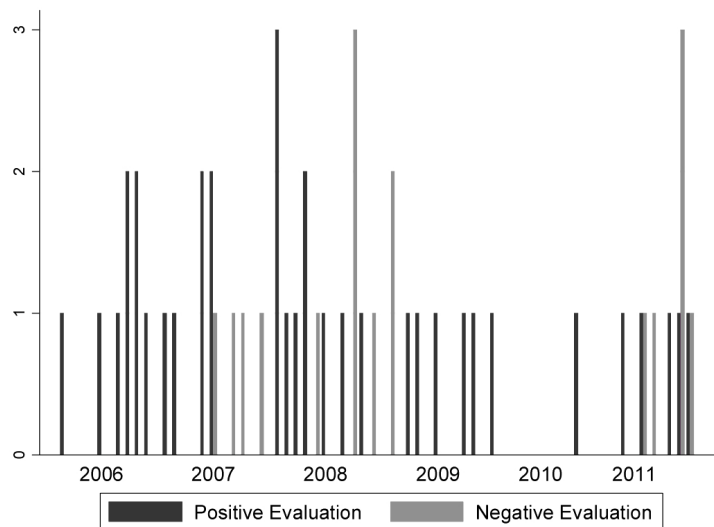
Environment

A document is defined as having used the "environment" frame if it discusses ethanol as an issue which impacts any aspect of the environment, including global warming, pollution levels, ocean quality, soil erosion, deforestation, and sustainable farming practices. As an absolute count, the environment frame was most prevalent in the period from 2006 to 2008 (*Figure 21, online*). However, as a percent of all codeable documents, the environment was presented as a more salient consideration to ethanol in the period from 2009 to 2011 (*Figure 22, online*). In the end, it appears a considerable number of authors and speakers treat ethanol as an "environment issue" across time, and this group of people kept talking in 2009 and 2010 when most others were silent on ethanol policy.

The environment is the most mixed of all frames in terms of ethanol evaluation (*Figure 23*). About 40% of documents using the environment frame evaluate ethanol positively and about 47%

nol. In fact, about one third of documents which offer an evaluation in this frame are negative, and the majority of evaluations are negative by mid-2011 (Figure 26). Two possibilities exist for explaining this trend. First, these evaluations may simply be attempting to refute the arguments of pro-agricultural ethanol supporters. Many of these documents may be conveying the message that “ethanol does not help agriculture as much as proponents would have us believe.” The second possibility is that negatively evaluated agriculture frames highlight the adverse effects of ethanol on livestock and poultry producers who depend on low grain prices for feed.

Figure 26. Evaluations in the Agriculture Frame, Sept. 2005 – Sept. 2011



Framing in the “Big Picture”

Ethanol has been touted as the solution to several distinct problems, including high greenhouse gas emissions, reliance on unpredictable Middle Eastern oil supplies, and the “vulnerability” of the American farmer (Lehrer 2008, 120-1). These pro-ethanol frames have been counterbalanced by competing issue definitions that evaluate ethanol less favorably. Detractors have argued that ethanol subsidies harm the environment, artificially inflate global food prices, and unnecessarily deplete federal coffers. These frames

have mixed with the together to produce a complex, contested area for issue definition.

The ethanol issue environment includes both relatively stable and relatively dynamic frames. While use of the economy, environment, and agriculture frames remained fairly constant over time, use of the energy dependence, energy prices, food prices, and budget frames changed considerably across this time period. The energy frames were much more prevalent from 2006 to mid-2008, the food prices frame in 2008, and the budget frame from early 2011 onwards. All three of these frames are associated with “crises,” namely high energy prices, high food prices, and the congressional budget stalemate. While this may partially explain the temporal patterns of these frames, it does not explain why the economy frame did not show a similar spike beginning around the time of the 2007 financial crisis, nor does it explain why the energy and food prices frames did not continue to climb with their price indicators after 2008. It appears that significant changes in exogenous variables may partially explain, but do not always cause, fluctuations in the use of related frames. Adding another helpful layer to this explanation is the role played by changing opinions. The “stable” frames showed a higher incidence of “negative” evaluation over time, while the generally positive energy frames receded from the frame landscape and generally negative food prices and budget frames increased in frequency. Thus both external events and changing opinions on ethanol influenced the frame environment from September 2005 to September 2011.

CHANGING FRAMES AND EVALUATIONS: THREE FINDINGS

Various schools of thought have proposed different theories for the process of issue redefinition in Congress and the media. Some have argued that Congresspersons strategically influence the media, others have proposed a more dynamic mutually-reinforcing process, and still others have claimed the media may shape congressional frames. The data analyzed in this thesis show that

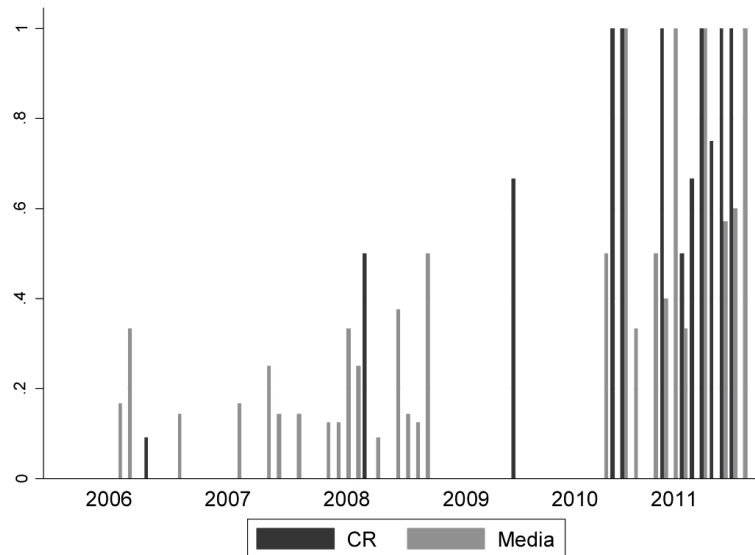
none of these theories entirely captures the framing and re-framing occurring around ethanol policy. The defining feature of ethanol frame transmission, largely ignored by all three of these schools of thought, is the role of opinion in determining frame use. Furthermore, the data show that the direction of “influence” is more complicated than simple frame transmission. In many cases, the use of a frame by one group diminishes its use by others.

Finding One: Changing Frames is a Dynamic Process

Out of the seven frame categories analyzed, five show no discernible “leader” in any of several studied dyads and triads. In the economy, energy dependence, energy prices, environment, and agriculture frames, neither the media nor Congress appears to be adopting the frame earlier than others. This result persists when frames are measured as a proportion of each document’s representation in the sample. This method controls for the slight differences between the sizes of the CR, national media, and regional media samples and also for the larger size of the combined “media” dataset. Several other scenarios are analyzed, including potential frame transmission between: regions, media and Congresspersons from the same region, national media and regional media, political parties, and congressional chambers. No leaders are detectable in any of these scenarios for any of these five frames.

Figure 27, online shows the characteristic pattern of “dynamic” frame change in the combined energy frame. Energy is chosen simply as an example; the economy, environment, and agriculture frames show similar leadership patterns. No “leaders” are present in either an absolute or relative sense. As an *absolute* measure, the media and Congresspersons began using the energy frame around the same point in time. As a *relative* measure, both groups tended to increase their use of the energy frame at similar times.

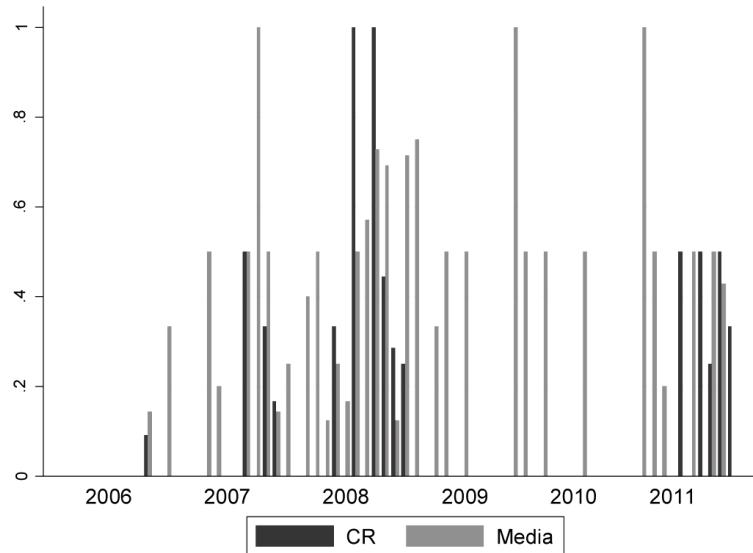
Figure 28. Use of the Budget Frame in the CR and Media, Sept. 2005 – Sept. 2011



The budget and food prices frames, however, show a different pattern. *Figure 28* shows each document type's use of the budget frame as a percentage of all observations for that document at a given time. The media clearly began using the budget frame before members of Congress. In fact, the media intermittently used this frame throughout the 2006 to 2009 period while almost no Congresspersons did the same. The budget was a noticeably minimal part of congressional framing until mid-2010. It is questionable, however, whether this pattern indicates frame *transmission* by the media. If the CR was "responding to" the media's reframing, then the CR waited at least three years. In this sense, it is difficult to conceptualize the media as "leading" and the CR as "following." More precisely, the media appears to have reframed ethanol as a budget issue while Congresspersons *refused* to follow for an extended period of time. Not until 2010, after four years of largely ignoring the media's framing of ethanol as a budget issue, did Congress take up the frame in a meaningful way. This raises an interesting and under-explored question about the conditions under which Congress may be inclined to delay or avoid adopting particular frames

that are already prevalent in the media.

Figure 29. Use of the Food Prices Frame in the CR and Media, Sept. 2005 – Sept. 2011



The food prices frame shows a similar congressional “stubbornness.” *Figure 29* displays the percentage of CR and media documents using the frame over time. Initially, it seems that perhaps the media was leading an issue reframing in late 2006 and early 2007. The CR seemed to respond to the prevalence of the food prices frame by mid-2007 with a noticeable uptick in the use of the food prices frame by Congresspersons. This apparent responsiveness comes into doubt, however, as we look farther into the future. During the period from late 2008 until early 2011, only the media used the food prices frame. If the CR is in fact sensitive to changes in the media, then we would have expected a similar responsiveness in this period.

Finding Two: The Media Leads Changing Evaluations

While the transmission of frames does not follow a clear leader-follower pattern, the ways in which frames are used to *evaluate* ethanol almost universally show Congress lagging.

For every frame except food prices, Congress did not use a frame to evaluate ethanol negatively until the media had already done so.* This trend is most easily seen in the environment frame (*Figure 30, online*). Although overall evaluations in the environment frame were mostly mixed over time with a slight negative trend, Congresspersons showed a distinct resistance to use the frame negatively. Not until mid-2008 did the Evaluation Score of ethanol in this frame turn negative.

It is unclear to what extent this phenomena reflects “transmission.” The media may be supplying Congresspersons with evidence within the frame which convinces them to alter their opinions. In the environment frame, for example, more evidence emerged over time which questioned ethanol’s contribution to carbon emission reductions and highlighted previously unconsidered environmental externalities. Alternatively, the media may be necessary to “get the attention” of ethanol opponents and introduce a new frame into their repertoire. This explanation also depends on the media’s role as an evidence-supplier, but it does not assume individual Congresspersons are changing their opinions. Instead, this attention-grabbing explanation assumes opponents are always “shopping” for useful frames, and the media points them to the blue-light specials. Finally, the media may be providing opponents “cover” to begin using a frame negatively. In this explanation, Congresspersons depend on the media to educate the public about the potential drawbacks and complications of ethanol in a formerly-positive frame. Congresspersons may resist using a generally positive frame to make a negative argument because they risk faltering in their explanation and boosting the salience of an issue that remains a positive evaluator. For example, talking about ethanol as an environment issue but failing to convince listeners that ethanol could be harmful for the environment just boosts the cause of the ethanol proponents who *want* ethanol to be seen as an environmental issue. Waiting for the media to lay the groundwork reduces the educational costs and potential risks to congressional ethanol opponents.

* Because the food prices frame is an almost entirely negative frame, this one exception is unsurprising.

Finding Three: Everyone is Avoiding the Argument

The process of media-to-Congress transmission of negative evaluations is stunted, however, by the general resistance of ethanol proponents to use frames which are usually “negative” and vice-versa. If we classify the budget and food prices frames as “generally negative,” the agriculture and environment frames as “generally mixed,” and the economy, energy price, and energy dependence frames as “generally positive,” then we see a disproportionate attraction of ethanol proponents to the “generally positive frames” and ethanol opponents to the “generally negative” frames. In general, both the congressional Record and Midwest display more favorable opinions towards ethanol than other documents and regions, while the national media displays decidedly negative opinions (*Figures 8 and 10*). Consequently, both the CR and Midwest show a disproportionate use of “generally positive” frames and appear to avoid using “generally negative” ones while the national media does the opposite.

Figures 31 and 32 (online) display the “deviation score” of each frame’s use from the norm across both regions and document types. To generate these scores, each document’s/region’s frame was evaluated as a percent of all frames. So, for example, the South’s use of the budget frame represented about 38% of all “budget frame” use by the various regions. Second, each document’s/region’s share of the whole sample was subtracted from this frame-specific percentage score. So, because the South represents about 31% of the entire sample, the “deviation score” of the budget frame in the South is about 7%. Given the South’s overall propensity to discuss ethanol, it uses the budget frame slightly more than we would expect. This measure prevents variation in region, document, frame-use, and sampling from influencing the score because all deviations are measured in comparison to others. The drawback, however, is that in some cases it may be difficult to determine if, for example, one document “over-uses” a frame or if the other two documents are “under-using” the frame. This measure shows us the relative use of frames across document types, but because the baseline is a rela-

tive measure, it does not allow us an analytical angle to determine which document type is the “deviant” and which are “normal.”

Several trends become clear in these two figures. First, the generally pro-ethanol Midwest and CR tend to avoid using the “generally negative” budget and food frames. The CR uses about 5% fewer budget frames than we would expect, which is especially remarkable given Congress’s featured role in the budget crisis, while the Midwest is about 16% below expectations. This pattern is slightly more pronounced in the food frame, with the CR about 16% and the Midwest about 12% below what we would expect given their prevalence in the dataset. An interesting pattern appears in the “generally positive” frames. The CR uses the energy frames more than we would expect, but the Midwest does not. The Midwest does, however, over-use the economy frame, while the CR under-uses it. The causes of these differences are likely do to some combination of the document’s target audience, author/speaker preferences, and sampling error. In any case, both figures show a propensity for pro-ethanol groups to over-use at least some “generally positive” frames. This pattern also holds true in the reverse for ethanol opponents. The national media uses the budget frame 11% more often and the food prices frame 9% more often than we would expect given its prevalence in the dataset. Similarly, the national media under-uses the generally positive economy, energy dependence, and energy prices frames by 18%, 6% and 11% respectively.

This trend may seem obvious at first glance, but it provides some interesting evidence about ethanol debates. The fact that ethanol proponents, measured in the data set as expressing a positive opinion towards ethanol policy, do not evaluate ethanol negatively in a particular frame is unsurprising. More significant, however, is that they do not evaluate ethanol *positively* in those frames either. In essence, proponents (and opponents) are “preaching to the choir,” presenting the issues which make ethanol “look good” (or “look bad”) as the most salient considerations to ethanol debates. They do a poor job, however, of addressing the negative frames presented by the other side. Instead of acknowledging and minimizing the effects of ethanol in a particular frame, opponents more often prefer

to ignore the frame entirely.

Towards a Synthesized Model of Reframing

These three trends offer us a valuable first cut at formulating a coherent, synthesized theory of issue framing and frame transmission. First, we should be skeptical of totalizing models that assume frames are transmitted through a strictly unidirectional pathway. The results here show that, at least in the case of ethanol, leaders and followers are much more difficult to pull apart than these simplistic theories might suggest. Second, we should pay attention not only to frames but also to the evaluations which are assessed through those frames. These results suggest that the media and Congress show distinct patterns in their use of negative evaluations, with the media more willing to “go negative” first. Finally, the contours of the frame environment have important implications for the tenor of “public debate” over an issue. At least in the ethanol case, each side of the issue shows an affinity for particular frames. Facing opposition, proponents tend to emphasize their own frames rather than engage the other sides. Taken together, these three findings offer the beginnings of a more robust understanding of framing. In the final chapter, I will attempt to outline one potential model and suggest areas for further research.

WHO REFRAMES, WHEN, AND WHY?

Frame transmission is a complex, poorly understood process. In the case of ethanol, I find that for many frames neither the media nor Congress appears to be “leading” the other in any meaningful way. Rather, changes in external conditions, including high-profile events and “crises,” seem to hold at least moderate influence over the frames adopted by these two groups. I also find that Congress tends to express more positive opinions on ethanol than the media. This preference influences congressional frame adoption in two ways. First, Congress appears reluctant to use any given frame negatively,

almost always lagging behind the media in “going negative.” Second, Congress appears reluctant to use generally negative-trending frames *at all*, avoiding the opportunity to offer a reevaluation of ethanol in negative frames.

This finding cautions against wholesale acceptance of the Elite Control or Media Control models of frame transmission. It does not appear that that as Entman (1993, 57) fears, elite framing need raise “radical doubts about democracy itself.” Elites certainly influence the frame environment, but the existence of independent media patterns in this dataset show that in at least some instances, the public receives a “frame menu” instead of one coherent message from media and congressional elites. This thesis did not address the framing behavior of other political elites, including the president and bureaucratic experts in the executive branch, but my findings nonetheless addresses this potential threat. If the media and Congress offer independent and divergent frames to the public, then at least two frame “options” will be presented no matter what frames other political elites may choose. This prevents any single elite group, including political and media elites, from imposing a singular, hegemonic frame environment on the public. Furthermore, the data here show that even when the media and Congress offer similar frames, the media often short-circuits the potential for political “manipulation” by offering negative evaluations in frames that Congress has presented as positive. In essence, even when Congress can influence the *standards* by which we judge a policy, they are less effective at dictating the *opinion* that such evaluation generates. Conversely, we cannot conclude that the media influences Congress in any impactful way. Although the media “leads” on some issues, Congress can hardly be said to follow. As evidenced by Congress’s selective use of the budget and food prices frames, it appears that Congresspersons are highly capable of maintaining autonomy from the media.

Elements from the Institutional Fluidity school, when combined with a more precise focus on differences between frame adopters and frame avoiders, helps to explain at least part of the change in the ethanol frame environment. Baumgartner et al.’s

(2009) theory of punctuated equilibrium argues that friction in the policymaking system and the inherently limited attention of Congresspersons combine to produce uneven, dynamic change. This may explain why the media and Congress, while tending to adopt similar frames at similar times, sometimes express uneven or unsynchronized frame adoption.

It seems likely, however, that something other than random institutional error is causing Congressperson's systematic delay in "going negative" and overall reticence to utilize generally negative frames. This bias may be at least partially explained by institutional features of Congress itself. A strong status quo bias operates on congressional policymaking, creating friction against even popular policy changes (Baumgartner et al. 2009, 217). This simple institutional inertia, the product of limited congressional time and attention, is dramatically compounded in the ethanol case by a strong contingent of pro-ethanol supporters. Together, these factors would have dissuaded many ethanol opponents from devoting significant efforts to end ethanol support. Given limited time and resources, why fight a losing battle? The shock expressed by media outlets at the June 2011 vote shows just how crazy the idea would have sounded to ethanol opponents in 2006. Thus the delay in expression of negative opinions in the CR may not necessarily indicate that Congress favored ethanol support. Rather, it simply shows that opponents quite literally were unwilling to "waste their breath" on a fight they could not win.

Viewed from this angle, the media may have laid essential groundwork for congressional opponents of ethanol subsidies. From mid-2006 to mid-2008, the media expressed decidedly mixed opinions on ethanol even in the face of expressed congressional support. The media was also willing to evaluate ethanol negatively within individual frames much before Congress in most cases. These negative trends in the media may have sent the critical signal to congressional opponents that there was an opening on the national agenda for a reconsideration of ethanol support.

Finally, after the ethanol debate picked up steam in both the media and Congress, we see an interesting pattern emerging

in the *way* those debates play out. Instead of engaging the other sides' arguments, both proponents and opponents preferred to use their time to emphasize more favorable frames. Baumgartner et al. (2009, 114) argue that institutional stickiness explains why status quo defenders often ignore the opposition; agenda gatekeeping prevents most reframing attempts from posing a serious threat. After an issue has emerged as the site of contested debate, however, the ethanol case suggests that both sides might find it advisable to strategically ignore inconvenient frames. We could hypothesize that opponents find it more difficult to beat an argument than to distract the public and make us forget it existed.

These hypotheses are only one potential set of interpretations; further research is necessary to determine how applicable they may be to other issues. The ethanol case displays a few distinct features we may expect to see in other issues following this general pattern. First, ethanol itself has long been a relatively salient issue to politicians and the media. Ethanol has been included in many major pieces of legislation and regularly appears in the CR and newspapers. Baumgartner et al. 2009 remind us that most issues which receive lobbyists' attention in Washington are particularistic, fairly one-dimensional, and struggling for a few minutes' meeting time. Of the 98 issues in their study, for example, only four underwent even a partial reframing (Baumgartner et al. 2009, 176). We should expect reframing attempts to be quite different for lower-profile policy areas than for issues such as ethanol which have already leapt the "attention getting" hurdle. Second, ethanol was characterized by a downward trend in both federal support and national opinion over time. For issues with little legislative or evaluative change, we should expect patterns of frame and especially evaluation transmission to be much different. Finally, ethanol may be unique in its relationship to many highly salient issue areas. While many policy areas could potentially be rhetorically connected to many issue areas, ethanol has a scientifically and/or statistically proven relationship to areas as diverse as the environment, rural economies, fossil fuel displacement, food prices, and more. These relationships provide rich potential for an issue environment that other policy areas may

not. To address all of these potential caveats, further case studies are necessary in other areas to create a more robust picture of reframing events in American media and Congress.

This paper could be improved by work in a number of areas. Sample sizes could be dramatically increased to produce a more robust, complete dataset. Richer data would allow researchers to examine finer questions. What association might exist between frames used by regional and state media and the frames used by Congresspersons from those areas? Are there frame leaders who operate at the scale of days or weeks instead of months? Does the presence of scientific or statistical evidence influence frame or evaluation transmission? The answers to each of these questions were not possible given the size of my sample, but they could provide valuable insight into the ethanol case and more generalizable findings. In future studies, researchers may also wish to treat the data more statistically than graphically, using multivariate regression to determine the significance of the media's effect on congressional evaluations when compared to lobbying money, interest group testimony, general patterns of non-ethanol media coverage, international crises and prices, Presidential statements, and more.

The ethanol case provides a few answers and many more puzzles. A closer look at changing frames and opinions over time sheds light on the "shocking" June 2011 Senate vote. As ethanol became characterized more negatively within frames and framed more negatively by additional frames, congressional policy changed as well. Who caused these opinions to change, however, is less clear. We know that *what* frames were used, but we do not know why. Why did the tide turn against ethanol when it did in mid-2008? And why did Congress take a full three years to enact a significant policy response? And if neither the media nor Congress "led" the other, then who led both? The answers to these questions lie only in further investigation of framing effects and reframing events in American politics.

To view all charts and tables, visit:
<http://www.helvidius.org/2012/weiner>

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