

The Construction of News: Energy Crises, Advocacy Messages,
and Frames toward Conservation

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Abstract

Much of what people know about politics comes from the media. An oft-debated issue concerns the extent to which the news media provides people with "accurate" portrayals of real-world events. In this paper, I assess the extent to which news coverage coheres with world events in a particularly important policy area: energy conservation. I focus on communications targeting individuals' decisions about conservation. I compare a content analysis of news coverage with changing world events regarding energy (over time) and advocacy communications from energy conservation campaigns. These comparisons, over time and with advocacy messages, enable me to assess whether news coverage matches changing events and how it differs from information campaigns aimed explicitly at energy conservation. I find that media coverage does shift in similar directions to world events, and that information in advocacy appeals is systematically different from frames encountered in a traditional news source. While this does not mean that biases do not infiltrate media coverage, it suggests the news is relatively responsive to changes in objective conditions and differs from advocacy efforts.

Introduction

Much of what people know about politics comes from the media. An oft-debated issue concerns the extent to which the news media provides people with "accurate" portrayals of real-world events. A challenge in exploring the extent to which a news organization does offer a "fair" portrayal is that it requires (1) some "objective" assessment of the event, and (2) a baseline of comparison. In this paper, I assess the extent to which news coverage coheres with world events in a particularly important policy area: energy conservation. In particular, I focus on communications targeting individuals' decisions about energy consumption. I compare a content analysis of news coverage with changing world events regarding energy (over time) and advocacy communications from energy conservation campaigns. These comparisons, over time and with advocacy messages, enable me to assess whether news coverage matches changing events and how it differs from information campaigns aimed explicitly at energy conservation.

I pursue this research by focusing on how media frame issues related to energy conservation. I find that coverage does shift in similar directions to world events, and that information in advocacy appeals is systematically different from frames encountered in a traditional news source. While this does not mean that biases do not infiltrate media coverage, it suggests the news is relatively responsive to changes in objective conditions and differs from advocacy efforts.

I proceed by discussing my approach to studying media content. I then explain why energy is an issue particularly well-suited to an exploration of bias in the construction of news. Subsequently, I review distinct eras in the history of U.S. energy policies, and offer predictions about media content. I test these predictions through an approach which captures frames toward energy policy by looking at mainstream media and advocacy frames over time. This sheds light

on the mechanisms underlying news construction, and helps to identify communications that may shape individuals' willingness to conserve energy.

Studying Media Slant through the Analysis of Frames

A sizable literature in political communication explores the extent to which media is biased, or slanted, in terms of its portrayals of events, candidates, and issues (Hofstetter 1976; Kuklinski and Sigelman 1992; Dalton, Beck, and Huckfeldt 1998; Gilens & Hertzman 2000; Niven 2002; Kahn & Kenny 2002; Druckman & Parkin 2005); however, this research continues to struggle with standards to assess bias. While some scholars find evidence of slanted coverage (e.g., Goldberg 2002; Groseclose and Milyo 2005), other work suggests that comparable events produce comparable results (e.g., Niven 2002). Despite the unresolved nature of this debate, what has become clear in recent work is that one effective approach is to make relative comparisons in media content - e.g., across sources (e.g., Niven 2002; Druckman 2005; Druckman and Parkin 2005).

A prominent way to capture media coverage is through content analyses, particularly in looking at how media *frame* issues over time (Tewskbury et al. 2000; Tankard 2001; Shah et al. 2002; Entman 2007). A frame is a communication device – e.g., word, symbol, or phrase – that emphasizes an aspect of an object (e.g., the economic effects of energy conservation). *Framing* is a process that involves selecting aspects of the world to assemble narratives that promote particular interpretations of events (Entman 2007: 164; Chong and Druckman 2007).¹

¹ At the micro-level, these communications have been shown to affect the way individuals think about issues, candidates, and policies by altering the *accessibility* (salience) and/or *applicability* (strength) of relevant considerations – i.e., a *framing effect* (Chong and Druckman 2007; Nelson, Clawson, and Oxley 1997; Scheufele 1999; Druckman 2001).

Importantly, media set the frames of reference individuals use to understand politics (Tuchman 1978; Neuman, Just, and Crigler 1992; Gamson 1992; Iyengar 1991; Entman 1993; de Vreese 2004; Druckman 2005; Berinsky and Kinder 2006).

Elites and groups with interests at stake in a policy debate may attempt to influence media coverage through the strategic dissemination of preferred frames. For instance, communications advanced by the Bush administration regarding the Patriot Act – transmitted by the media - were instrumental in securing public support necessary for the bill’s passage (Domke et al 2006: 291). Similarly, Tewksbury et al. (2000) show that frames employed by policy advocates on a local issue – i.e., a debate over large-scale hog farms in Illinois - altered individuals’ support for policies associated with regulations toward the industry. In sum, strategic frames advanced by advocacy agents may infiltrate media coverage, thereby slanting coverage in ways that influence the public’s attitudes and actions. Therefore, I will evaluate media slant by comparing frames in a traditional media source with: (1) objective events over time; and, (2) frames employed by advocacy groups in targeted information campaigns.

I focus on frames related to individuals’ decisions about energy conservation. In doing so, it is sensible to focus on particular aspects of a frame including its *content* – i.e., its actual substance – as well as the *context* in which it is situated. Frames with content about the effects of energy conservation are likely to be particularly important in terms of motivating (or discouraging) action. This stems from the fact that most planned behaviors result from considerations about an action’s likely consequences (Ajzen and Fishbein, 1980; 2005). For instance, energy conservation may be communicated in terms of its economic, environmental, personal, or societal implications. Second, a frame’s content may differ in terms of its *direction* – promoting or discouraging an action. For example, an economic frame toward energy

conservation might emphasize the higher up-front cost of an energy-efficient product or the long-term economic savings of the device.

The *context* in which a frame is situated also helps it establish meaning. Frames do not exist in a vacuum; rather, they are embedded within contexts that help the people make sense of the political realm. For instance, the *tone* of a story in which frames are situated is relevant. A story's tone may be positive, negative, or neutral – e.g., focusing on the positive effects of taking action or the negative/threatening consequences of inaction. Negative information has been shown to directly motivate action by increasing psychological perceptions of threat and eliciting emotions that drive action (Miller et al. 2002; Geer 2006; Brader et al. 2008).

Another important aspect of the context relates to attributions of responsibility for dealing with the nation's energy problems. Causal attributions focus on the origin of a problem and help individuals understand why a problem is occurring, while treatment attributions relate to whom responsibility is assigned for dealing with the extant problem – i.e., “who or what has the power to alleviate the problem” (Iyengar 1991: 9). Scholars have known for decades that attributions of responsibility exert a powerful influence on individuals' attitudes and behaviors. For instance, Sniderman and Brody (1977: 338) showed that individuals who view government as responsible for dealing with important personal problems are more likely to turn out to vote. More recent work indicates that voters do not evaluate incumbent candidates based on changes in their own personal economic situation; however, citizens do hold government responsible for national economic conditions (Feldman 1982; Lewis Beck 1988). In sum, this literature illustrates the centrality that attributions play in the shaping political attitudes and behaviors.

A third aspect of the context of stories relevant to conservation is the presence of episodic news frames. Episodic frames focus on particular events and cases (e.g., specific stories about

how individuals conserve energy). Iyengar (1991) finds that episodic news frames encourage individualistic attributions of responsibility for social problems. Thus, episodic frames may increase individuals' willingness to reduce energy consumption by encouraging individualistic attributions of responsibility for dealing with the problem. Finally, stories may include explicit links to other variables known to motivate action such as values and social norms. For example, a story may link energy conservation to egalitarian or environmental worldviews, or make explicit reference to the attitudes and actions of peers. Thus, I account for the presence of this relevant contextual information in articles in which conservation is discussed.

Frames toward Energy Conservation

To study slant in the construction of news, it is advantageous to focus on over-time coverage related to energy conservation for several reasons. Most importantly, one can be fairly confident that events such as energy shortages, price fluctuations, and natural disasters are exogenous to media coverage. Put differently, media do not cause these events. Thus, I am able to exploit over-time variance in relevant events and assess the nature of corresponding changes in media coverage. This provides some leverage in terms of evaluating the degree to which media narratives correspond to real-world events. Moreover, by comparing coverage from a traditional news source with government-sponsored campaigns promoting conservation, I can evaluate the relative "objectivity" of coverage across sources. Finally, individuals are primary users of energy, and citizens' decisions ultimately shape collective outcomes. Although energy conservation may have private benefits (e.g., money saved from less consumption), it may also entail personal sacrifices (e.g., traveling less, purchasing smaller vehicles, etc.) with benefits that accrue to the general population. Thus, individuals' willingness to make sacrifices for the sake of a *public good* may depend, in part, on media discourses.

Individual Behaviors

I focus on two distinct classes of energy conservation: *energy curtailment* – which involves changing habitual behaviors (e.g., turning off lights and appliances when not in use, taking shorter showers, etc.); and, *capital investments* in energy efficiency – which generally involve infrequent decisions and may have greater situational constraints (e.g., purchasing a more fuel efficient vehicle, insulating one’s home, etc.) (Stern 2000). I assess messages with information related to twenty specific acts of *energy curtailment* and *capital-investment*. It is important to distinguish between these actions because they may be emphasized to different degrees over time.

Behavioral Effect Frames

As previously discussed, frames related to the effects associated with an action are likely to be especially relevant in deciding whether or not to conserve energy. Utilizing inductive procedures developed by Chong and Druckman (2008), I identified frames associated with the effects of energy conservation from an initial sample of articles. Five effect frames were identified: economic effects, environmental effects, societal effects (i.e., collective implications of taking action), personal effects (i.e. lifestyle changes resulting from conservation), and moral or ethical effects.

Causal and Treatment Attribution Frames

The initial sample of stories also allowed me to identify specific agents associated with blame or responsibility for the extant situation. Specifically, I code for causal attribution frames associated with: industry behavior (e.g., oil, auto, and electric companies), U.S. government, consumers, foreign nations (e.g., oil exporting nations), growing energy demand or dwindling

energy supplies, and natural events (e.g., disasters, hurricanes, etc.). I also code for treatment attribution frames associated with: industry, government, consumers, and foreign nations.

Prior to analyzing media and advocacy coverage, I first describe three distinct eras in the history of U.S. energy policies. This leads to predictions about the types of frames likely to emerge in response to real-world events. The purpose is to provide two baselines for comparisons in coverage: relevant energy-related events over time and advocacy messages. Thus, I turn to this now, after which I will describe methods for collecting, coding, and analyzing the data.

Eras of Action toward Energy

The U.S. has adopted distinct approaches to managing the nation's configuration of energy resources over time. The purpose of reviewing these periods is to identify from world events expectations regarding the content of frames toward energy conservation. Table 1 lists three distinct eras in the history of U.S. energy policies, the event(s) that gave rise to each period, and major policy actions within each era. The first period, labeled the Era of Crisis (1973-1981) in Table 1, was sparked by oil shortages stemming from an embargo on shipments to the U.S. The embargo sparked a period of crisis that would last until the early 1980s when the U.S. shifted to a policy of deregulation amidst an economic recession. I refer to the second period in Table 1 as the Era of Production (1982-1999). The most recent era, A Return to Crisis (2000-2007), has been characterized by record high energy prices, regional shortages, and increased government intervention in energy markets. I review these eras in detail to motivate predictions about media content if coverage is driven by actual events.

[Insert Table 1 here]

Era of Crisis: 1973- 1981

On October 15, 1973, the Organization of Arab Petroleum Exporting Countries (OAPEC) declared an oil embargo on the U.S. for sending support to Israel in the Yom Kippur War. The following day the Organization of Petroleum Exporting Countries (OPEC) also announced plans to increase the price of crude oil by seventy percent through a series of five percent, monthly production decreases. These events sparked what came to be called the First Energy Crisis and led to media attention to the nation's energy supply. Figure 1 charts the salience of stories about energy policy from 1965 through 2007 appearing in the *New York Times*. Prior to 1973, media stories about energy policy were virtually non-existent; however, hundreds of articles began to appear after the First Energy Crisis.

[Insert Figure 1 here]

The third column in Table 1 lists key legislation passed during the Era of Crisis. The first bill enacted in this period, the *Emergency Petroleum Allocation Act* (EPAA), created a two-tier pricing system (for oil produced from domestic wells) in which oil produced from newly developed wells could be sold at higher prices relative to oil produced from sites already in production (although still below market price). The pricing system was an effort to encourage investment in new energy production, while keeping a lid on gasoline prices for consumers; however, its actual effect was to discourage domestic production and inflate demand (Lazzari 2007). Smith (2002: 26) labels this sequence of events an *energy cycle crisis*. The cycle begins with demand for energy rising, creating a tight supply and a rise in energy prices, followed by large profits for energy producers. Industry critics subsequently claim that energy prices are being manipulated by firms for profit, and the ensuing public outrage leads politicians to enact

legislation to temper the economic effects of shortages– further contributing to the problem because lower policies encourage consumption.

A recession in 1974 and 1975 was attributed largely to the negative economic ramifications stemming from the spike in energy costs resulting from the oil embargo. Figure 2 charts the nominal and real gasoline prices in the U.S. from 1965 through 2006. Rising gasoline prices continued unabated through the latter half of the 1970s in spite of price controls artificially holding down costs. Consequently, successive administrations pressed for legislation that increased government involvement in energy markets. The *Energy Policy and Conservation Act* (EPCA) of 1975 was enacted under President Ford’s administration. This bill sought to increase oil production by gradually de-controlling the price of oil; it mandated the establishment of a strategic petroleum reserve with the capacity to store up to one billion barrels of oil; and, it included the first fuel economy standards for domestic vehicle fleets – 18 miles per gallon fleet-wide average beginning with 1978 models (Lazzari 2007).

[Insert Figure 2 here]

One of President Carter’s first steps in office was to create the Department of Energy to oversee the development and implementation of a national energy policy. In April of 1977, Carter declared the nation’s energy situation “the moral equivalent of war” and urged citizens to take action to reduce energy consumption (Smith 2002: 28). The *National Energy Act of 1978* contained a number of provisions to reduce national consumption and encourage the development of renewable energy – e.g., a gas guzzler excise tax on the sale of automobiles with low fuel-efficiency ratings, tax incentives for alternative fuels, and tax credits for consumer actions such as insulating homes and businesses.

The country experienced a Second Energy Crisis in 1978 and 1979 sparked by an interruption in global oil supplies resulting from the overthrow of the Shah in Iran and the country's subsequent war with Iraq. Although OPEC increased production, an "oil panic" led to hoarding, speculative buying, and, as Figure 2 charts, significant price increases on gasoline in 1979 and 1980. Figure 3 charts responses to Gallup's "most important problem" question from 1960 through 2005, and shows that during the Second Energy Crisis the percentage of the U.S. public citing energy issues as the most important problem facing the nation increased substantially (28% in February of 1978). Throughout this period energy policy remained salient in the media (see Figure 1). This remained so until 1982 when gasoline prices began to decline in real dollars amidst a severe global economic recession.

[Insert Figure 3 here]

Based on the events occurring in this period, I can make several predictions about the types of frames likely to emerge – assuming that objective events drive coverage. Table 2 (row 1) lists my expectations for frames associated with conservation during this period. First, I predict that the economic effects of conservation will be the most common dimension of rhetoric during periods of energy crisis (H1). When energy issues became a widespread public concern in 1973, taking actions such as driving less, lowering driving speed to save gasoline, and reducing home energy usage are likely to be portrayed as ways to deal with rising energy costs. Second, I predict the emergence of causal attributions frames toward "foreign nations" – reflecting the role that OPEC played in sparking initial energy shortages (H2a). Moreover, in part due to the nature of *energy cycle crises*, I predict that industry will be portrayed as an agent responsible for the nation's energy problems (H2b). Finally, I predict that government and consumers will be most frequently portrayed as the agents responsible for dealing with the

situation – stemming from rhetoric associated with the need for policy action and personal “sacrifices” to get through the crisis (H3).

[Insert Table 2 here]

Era of Production: 1982 - 1999

The election of Ronald Reagan as President in November of 1980 marked the beginning of a period of sharp change in the direction of U.S. energy policies (Smith 2002: 30). Reagan campaigned on a free-market approach that involved reducing government involvement in energy markets. Table 1 refers to this period as the Era of Production because the U.S. shifted its approach from active involvement in markets, with policies targeting demand reduction and the promotion of alternative fuels, to one guided by *lassie faire*, free-market principles, with policies favoring the oil and gas industries.

One of Reagan’s first steps as President was to end price controls on oil as part of the Economic Recovery Act of 1981.² He followed this with an unsuccessful attempt to abolish the Department of Energy. Nonetheless, his administration was successful in cutting funding to the government’s alternative fuels program, eliminating conservation programs, increasing the offshore production of oil, and allowing most tax subsidies for alternative energies to expire (Smith 2002).

Reagan’s election coincided with the most serious recession the U.S. had faced since the 1930s, leading to a decrease in the demand for energy in the first half of the 1980s. Record gasoline and crude oil prices in the late 1970s (see Figures 1 & 2) led to increased crude oil

² Although Reagan decontrolled the price of oil on January 28, 1981, the action was largely symbolic, as price controls on oil were scheduled to expire at the end of the year (Smith 2002:

32)

production (e.g., expansion of production in non-OPEC countries). Facing declining demand and increasing competition, OPEC responded initially by reducing production in an attempt to stabilize prices.³ However, in December of 1985, OPEC shifted course and increased production to defend its markets, leading to an oil price collapse – between December 1985 and July 1986 crude oil dropped from \$23/barrel to less than \$10/barrel (Lazzari, 2007). As energy prices remained low throughout the latter half of the 1980s, stories about energy issues dropped out of the news (Figure 1) and few citizens cited energy as an important national problem (Figure 3).

Although Iraq's invasion of Kuwait led to a short-term spike in oil prices in the fall of 1990, the lasting effect of the Persian Gulf War was a movement away from the Reagan administration's free-market philosophy toward managing the nation's energy supply. The *Energy Policy Act of 1992* increased government involvement in energy markets by promoting alternative fuels and renewable energy, funding research and development for energy efficient technologies, and providing tax incentives for energy production (including oil and natural gas). Thus, the latter half of this period was characterized by a return to interventionist policies targeting the production of a variety of energy sources in addition to oil and natural gas.

Cheap energy throughout this period had two primary implications: first, consumption increased – e.g., between 1985 and 2000 demand for oil climbed from 3.2 million barrels per day

³ For instance, Saudi Arabia was producing over 10 million barrels of oil per day from October of 1980 through August of 1981; however, by 1985, they were only producing 2.3 million barrels per day (eia.gov).

to 9.1 million barrels per day⁴; second, OPEC's share of oil imports rose from 41% to 51% over this same period. Gasoline prices continued to decline in real dollars reaching inflation-adjusted record lows in 1998/1999.

The Era of Production was characterized by relatively cheap energy prices and a stable supply. Thus, I have no predictions regarding causal attributions toward energy problems; however, as Table 2 shows, I predict an increase in treatment frames toward industry in this period (H4). This stems from technological advances and rhetoric associating markets as the solution to energy supply problems.

A Return to Energy Crisis: 2000-2007

To combat fledgling oil prices in 1999, OPEC agreed to a series of production cuts. Consequently, crude oil prices rose from \$24/barrel in January to \$34/barrel by March of 2000. Figure 2 shows that the average price for a gallon of gasoline climbed from \$1.17 in 1999 to \$1.51 in 2000 (Smith 2002: 37). Public outrage over gas prices made energy politics a central issue in the 2000 Presidential campaign. The focus of much of the debate was not over whether the government should intervene in energy markets, as in previous eras, but, rather, the extent to which the government should focus on increasing production (e.g., drilling in ANWR) versus curbing the demand for energy (e.g., mandating energy-efficiency and conservation) (Bamberger 2006). The debate also hinged on the extent to which government should favor short-term (e.g. reducing or eliminating the federal excise tax on gasoline) versus long-term courses of action

⁴ Cheap gasoline contributed to rising sales of notorious "gas guzzlers." In the first nine months of 2000, almost half of all new car sales were for SUVs, minivans, or pickup trucks (Smith 2002: 37).

(e.g. investing in research and development of alternative sources of energy). Figure 1 charts the resurgence of media attention to energy issues in 2000.

The words “energy crisis” also resurfaced in 2000 and 2001 in response to electricity shortages and rolling blackouts experienced by residents in California and neighboring Western states.⁵ In addition, several key geo-political events (e.g., 9-11 terrorist attack against the U.S., occupation of Afghanistan and invasion of Iraq in 2003, nuclear ambitions of Iran, etc.) highlighted the security concerns about the U.S.’s reliance on oil imported from the Middle East for its energy supply. This united partisans in calling for comprehensive energy legislation.

Comprehensive energy legislation indeed was introduced in Congress every year from 2001-2005.⁶ Legislative actions kept energy in the news between 2002 and 2003 in spite of leveling off in oil prices. A sharp rise in gasoline prices in the summer of 2005 created the political conditions necessary for passage of a comprehensive energy bill in the 109th Congress (*Energy Policy Act of 2005*). The bill included over 11 billion dollars in net tax cuts for producers of energy and funding for research and development of energy-efficient technologies

⁵ Price controls on utility companies coupled with population growth and stagnation in the construction of energy plants led to electricity shortages and rolling blackouts during peak periods of usage.

⁶ Over 200 energy-related bills were proposed in the 108th Congress. Although the comprehensive bills failed, The Working Families Tax Relief Act of 2004 and the American Jobs Creation Act of 2004 retroactively extended several energy tax subsidies including a tax credit for electricity produced from renewable energy, \$4000 electric car deduction, and other deductions for the production of “clean” energy (Lazzari 2007).

(Lazzari, 2007).⁷ Nonetheless, Figure 1 shows that crude oil prices continued to climb throughout 2006 and 2007.⁸ This prompted passage of a second major energy bill (*The Energy Independence and Security Act of 2007*) in two years. The bill takes steps to curb energy demand by increasing fuel efficiency standards for automobile manufacturers and mandates the production of renewable fuels.

Table 2 lists several expectations about media coverage in the Return to Crisis period. First, I predict the emergence of environmental effect frames associated with energy conservation as a result of the growing awareness of a connection between energy and environmental crises such as global warming (H5a) (Bolsen and Cook 2008). In addition, I predict a shift in the direction of frames associated with the personal (lifestyle) consequences of energy conservation – i.e., toward more positive frames as a result of conservation involving the use of energy efficient devices as opposed to making lifestyle sacrifices (H5b). Finally, I expect an increase in the frequency of causal attribution frames toward government for the nation’s energy woes – e.g., for lack of planning, coordination, and failure to learn from previous crises (H6).

⁷ The tax cuts were primarily incentives and guarantees for energy producers of various types – e.g., \$4.3 billion for nuclear energy, \$2.8 billion for fossil fuel production, \$2.7 billion to extend renewable electricity tax credits, \$1.6 billion for clean coal production, and \$1.3 billion for conservation and energy efficiency (Lazzari, 2007).

⁸ Crude oil had traded at inflation adjusted prices of less under \$30 dollars for its entire history prior to 2003; but prices doubled by 2005 (to close at over \$60/barrel in July of 2005), and reached a record high on July 11, 2008 closing at \$145.08 per barrel (Energy Information Administration, www.doe.gov).

Method

To investigate media frames from a traditional source, I conducted a content analysis of stories about energy conservation appearing in the *New York Times* between January of 1973 and December of 2007. I created a coding instrument using an initial sample of articles with content about energy consumption – i.e., identifying actual behaviors mentioned, effect frames, and responsibility attributions. Subsequently, I searched the Lexis-Nexis and Proquest databases for articles with the terms “energy conservation” or “conserve energy” or “energy consumption” or “consume energy” in the headline and lead paragraph of a story. The main objective was to identify articles that contained information related to *individuals*’ consumption decisions in order to evaluate frames associated with these actions. Articles that included information about energy conservation were coded with the instrument I developed.

To identify causal attributions, I employ a dichotomous code of 1 if blame is explicitly assigned to one of the following actors in an article (0 otherwise): industry, the U.S. government, consumers, foreign nations, growing energy demand, or natural disasters. Similarly, I use a dichotomous code for treatment attributions if industry, government, consumers, or foreign nations are explicitly mentioned as responsible for dealing with the situation. Each article was coded for the presence of the aforementioned effect frames, as well as a corresponding “direction” code – contingent on whether conservation is linked with positive or negative consequences. In addition, I employ a dichotomous code for whether stories include information that connects energy conservation with specific values (e.g. egalitarianism, individualism, etc.) or makes a connection to the social norms (or the actions of “others”). Finally, I evaluate whether negative or threatening language is associated with inaction, as well as whether stories include episodic news frames.

My initial analyses focus on the role that events play in driving the construction of news. To explore how coverage in a traditional news source compares to advocacy communications targeting reduced energy consumption, I transcribed and coded 27 government-sponsored television commercials targeting energy conservation aired during energy crises. Part of the mission of the U.S. Department of Energy (DOE) is to raise awareness to energy issues and promote energy conservation by citizens. Thus, the DOE has sponsored a number of public information campaigns, sometimes in partnership with non-profit advocacy groups such as the Alliance to Save Energy and the U.S. Ad Council, targeting individuals' decisions about energy consumption. These messages consist of "government directed and sponsored efforts to communicate to the mass public or a segment of the public in order to achieve a policy result" (Weiss and Tschirhart, 1994, 83). I have transcribed and coded all available energy conservation ads (using the procedures discussed above).⁹ To assess the reliability of the coding, I randomly sampled approximately 30% of the articles and transcripts from each source and had a second coder (an undergraduate research assistant) evaluate these stories. I found 91% agreement between coders (Cohen's Kappa = .85).

⁹ In the more recent period, I include DOE sponsored commercials as well as televised advertisements developed for the State of California's *Flex Your Power* (FYP) public information campaign (PIC) to encourage residents to conserve energy during the shortages in 2001 and 2002. FYP generously provided me with access to all of the 30-second commercial advertisements developed for the campaign. These advertisements were transcribed, coded, and included in the sample of advocacy frames (N=27 television advertisements in total).

Results

I begin by reporting the frequency of stories mentioning personal energy conservation in each policy era. I then explore the composition of frames in each period to evaluate my predictions regarding media content. Subsequently, I present the results from a second content analysis of government-sponsored, televised public information campaigns (PICs) targeting energy conservation.

Table 3 reports the number of stories captured by my search between 1973 and 2007 (N=781). The second column displays the percentage of articles in each era explicitly mentioning individuals' consumption decisions. As shown in the two columns on the right in Table 3, curtailments and capital investment actions were equally likely to be mentioned across policy eras ($z = 0.95$ for a two-tailed difference of proportions test).

[Insert Table 3 here]

Figure 4 charts the frequency of effect frames linked to energy conservation. The data support my prediction (H1) that economic effect frames would be the most prevalent effect frame in the initial Era of Crisis.¹⁰ Nearly half of all stories about energy conservation connect individuals' actions to economic consequences. The data in Figure 4 also support my expectation that environmental effect frames would emerge in later periods (however, H5a incorrectly predicted the emergence of this frame in the Return to Crisis era (2000-07) as opposed to the Era

¹⁰ I follow others using one-tailed tests to test for statistical significance given that my hypotheses are directional (e.g., Druckman 2005; Druckman and Parkin 2005). A difference in proportions test indicated a significantly greater frequency of economic effect frames compared to environmental ($z = 9.21$; $p < .000$), impact ($z = 4.87$; $p < .000$), lifestyle ($z = 6.57$; $p < .000$), and moral effect frames ($z = 10.42$; $p < .000$) in this period.

of Production (1982-99) as displayed in Figure 4). Nonetheless, it does show that as concerns such as global warming have become more salient, news stories have begun to emphasize the environmental consequences of energy conservation.

[Insert Figure 4 here]

Figure 5 charts the percentage of each effect frame that is positive (in *direction*) across time. Economic effect frames tend to be dominated by positive information focusing on the benefits of reducing consumption. Similarly, the balance of effect frames related to the impact of individuals' actions tends to be largely positive (87%, 78%, and 83% over each period); environmental effect frames are nearly universally positive as well. The lone dimension with a predominance of negative effect frames related to energy conservation is toward individuals' lifestyles. However, as shown in Figure 5, the balance of frames on this dimension shifts markedly from the first period of crisis to the most recent years. This suggests that technological innovations may have altered frames about the personal costs associated with energy conservation – e.g., switching to energy efficient devices rather than making sacrifices.

[Insert Figure 5 here]

Table 4 reports the percentage of articles including causal attribution frames toward specific agents. The results generally support my predictions regarding the composition of causal attribution frames within and across eras (H2a-b and H6). Real world events, in part, do appear to drive the construction of these frames. Foreign nations and industry are primary agents blamed for energy problems during the Era of Crisis.¹¹ In addition, the proportion of articles

¹¹ While there are no significant differences in the proportion of articles including causal attribution frames toward foreign nations, industry, and government, industry is significantly more likely to be cited as a cause of the nation's energy problem relative to consumers ($z=1.7$;

blaming government for energy problems increases significantly between the initial period of crisis and the latest crisis ($t= 5.45$; $p<.000$; one-tailed test of difference in mean). Finally, the increase in causal effect frames associated with “natural disasters” in the most recent Return to Crisis period (2000-07) stems from coverage associated with hurricanes Rita and Katrina that damaged U.S. refineries in the fall of 2005 ($t=3.2$; $p<.001$). It is important to note that a relatively small percentage of the sample makes any explicit link to an agent causally responsible for the extant energy problem. This may explain why citizens often have difficulty grasping the underlying causes driving energy shortages (Smith 2002).

[Insert Table 4 here]

Treatment attribution frames across time are reported in Table 5. I predicted government and consumers would receive the largest share of the responsibility for dealing with energy issues in the Era of Crisis (H3). Of the articles mentioning individual energy conservation, about one-third (33%) explicitly mentioned consumers as responsible for dealing with the energy problem (significantly more than in any other policy era),¹² and nearly half (46%) assign

$p<.04$), growing energy demand ($z=1.24$; $p<.10$), and natural disasters ($z=4.34$; $p<.000$).

Similarly, foreign nations are significantly more likely to be cited as a cause relative to consumers ($z=1.3$; $p<.09$) and natural disasters ($z= 4.05$; $p<.000$).

¹² A one-tailed test of difference in means shows significantly greater consumer attributions in period 1 relative to period 2 ($t=1.36$; $p<.09$) and period 3 ($t=2.57$; $p<.001$). Moreover, consumers are cited more frequently than industry ($z=1.34$; $p<.08$) and foreign nations ($z=5.90$; $p<.000$) in the initial period as a source of treatment.

government responsibility for the dealing with the situation.¹³ I also predicted that industry would be framed as a treatment source during the age of production (H4). Table 5 provides evidence in favor of this prediction, as industry (37%) is cited nearly as frequently as government (40%) as a treatment source in the Era of Production (1982-99) (and more than in the initial period of crisis, $t=3.98p < .001$, and the latest crisis period $t=3.07; p<.01$).

[Insert Table 5 here]

The data thus far provide some evidence that media coverage is shaped by real world events. The dynamics of the information environment seem to reflect changes in the actual events contributing to energy problems. Moreover, frames associated with the effects of conservation appear to reflect the actual implications of these actions – i.e., a mix of pro and con economic, environmental, personal, and societal considerations. While it is impossible to say whether the distribution of frames offers an “unbiased” portrayal of the actual energy situation, or what the *most important* implications are from energy conservation, it is possible to compare the extent to which frame usage varies across sources. This provides a snapshot of the relative “objectivity” of a traditional news source (*NYT*) as compared to advocacy messages explicitly targeting conservation.

Comparing Media Coverage across Sources

I begin by reporting the frequency of causal and treatment attributions linked to energy conservation in targeted energy conservation campaigns. Consumers more likely to be referenced as causally responsible for the nation’s energy situation in advocacy communications

¹³ Thus, government is cited significantly more than consumers ($z=2.01; p<.02$), industry ($z=3.32; p<.000$), and foreign nations ($z=7.45; p<.000$) as a source of treatment for the existing problem.

compared to traditional news (44% to 14%); this is even more pronounced with respect to treatment attributions (96% to 33%). In addition, every advocacy message included *only positive* effect frames.

Figure 6 provides a comparison of effect frames in public service announcements (PSAs) and the *NYT*. The difference in the distributions of frames across these sources is striking. Nearly half (46%) the sample of articles from the *NYT* reference the economic implications of conservation, whereas this frame is used in only a small percentage of the PSAs (11%). In contrast, the most common effect frame in PSAs is the (societal) impact effects frame (37%). The increased usage of this frame in advocacy messages reinforces the importance of collective considerations in encouraging energy conservation. Another noteworthy comparison in Figure 6 involves the prominence of lifestyle effect frames in PSAs (31%) compared to traditional sources (14%). This difference is even more pronounced than it appears given that PSA included only positive lifestyle changes – i.e., emphasizing the ease of behavioral changes – whereas this frame was predominantly used in a negative direction toward conservation in traditional news – i.e., emphasizing the sacrifices associated with conservation. This suggests that frames in advocacy messages are less reflective of the actual nature of reality – i.e., to the extent that energy conservation require any costs to consumers – relative to stories about conservation in the *NYT*.

[Insert Figure 6 here]

Figure 7 compares specific elements of the content of stories about energy consumption across sources. In particular, it focuses on differences in the usage of episodic news frames, negative or threatening information associated with inaction, content relating conservation to individual values, and content relating conservation to social norms (i.e., any information on the actions of others). One interesting finding is the greater percentage of episodic news frames in

advocacy messages relative to traditional sources. Recall that episodic news frames focus on a specific event and use concrete depictions of a problem. Although episodic news frames are maligned for their propensity to increase individualistic attributions for problems such as poverty and crime (see Iyengar 1991), they appear to be advantageous in messages targeting energy conservation. This may stem from knowledge by marketing experts that episodic frames increase individualistic attributions of responsibility, which, in turn, may increase one's likelihood of taking action. Second, values are much more likely to be connected to energy conservation in PSAs relative to stories in the *NYT*. Virtually all PSAs (96%) included contextual information linking values to energy conservation, as opposed to only 26% of articles focusing on conservation in the *NYT*.

Discussion

The results from this analysis suggest some level of responsiveness by media to changing conditions—i.e., frames shift in directions that reflect actual developments in the world. This is perhaps most evident with respect to the dynamics of causal attribution frames within and across contexts. In the Era of Crisis (1973-81), twenty-one percent of articles focusing on conservation explicitly linked the cause to the behavior of foreign nations. Insofar as energy problem did stem from OPEC's actions in this period (discussed previously), this indicates that coverage, at least to some extent, accurately reflected reality. The emergence of causal effect frames toward natural disasters in the Return to Crisis period (2000-07) clearly stemmed from the damaging hurricanes that hit coastal refineries in the fall of 2005. In actuality, hurricanes Rita and Katrina crippled nearly a quarter of U.S. crude oil refining capacity. Again, these frames emerge in response to changes in real circumstances. Finally, the growing construction of government as an agent

responsible for the nation's energy problems may stem from frustration with the magnitude and scale of previous federal actions.

The data charting frames associated with the effects of conservation also lends support to the view of media responsiveness to actual conditions. While economic effects are clearly the most important consideration associated with consumption over time, the emergence of environmental effect frames likely results from growing scientific (and public) understanding of the connection between burning fossil fuels to generate energy and climate change. Second, the data charting effect frames shows a significant decrease in the frequency of frames associated with lifestyle changes necessary to conserve energy. As mentioned previously, the decreased usage of these (predominantly negative) frames toward conservation likely stems from actual technological advances that changes the behaviors required to reduce consumption – e.g., switching to energy efficient appliances and light bulbs.

To evaluate the “objectivity” of media's construction of the news, I adopted an approach which involved making comparisons in coverage across sources. Specifically, I compared frames in a traditional news source to government-sponsored television ads targeting conservation. These public service announcements (PSAs) differed in numerous interesting ways from frames in traditional news including: more associations of causal and treatment attributions toward consumers; a greater focus on the positive collective impact and ease of making lifestyle changes to conserve energy; more connections to values related to energy conservation; and, more likely to include episodic news frames which increase perceptions of individual responsibility for energy conservation.

Conclusion

A primary contribution media make to society is as producers and messengers of meaning about the world. Perhaps not surprisingly, media are sometimes criticized for their selection and interpretation of events. Concern about media bias is often rooted in fear that slanted perspectives may indoctrinate citizens by leading them toward particular views – potentially impeding democratic accountability. However, I find that media coverage does shift in similar directions to world events. Moreover, the content of stories about conservation differs in systematic ways from advocacy appeals. While this does not mean that biases do not infiltrate media coverage, it does suggest the news is relatively responsive to changes in objective conditions and differs in important ways from explicitly “biased” messages targeting energy conservation.

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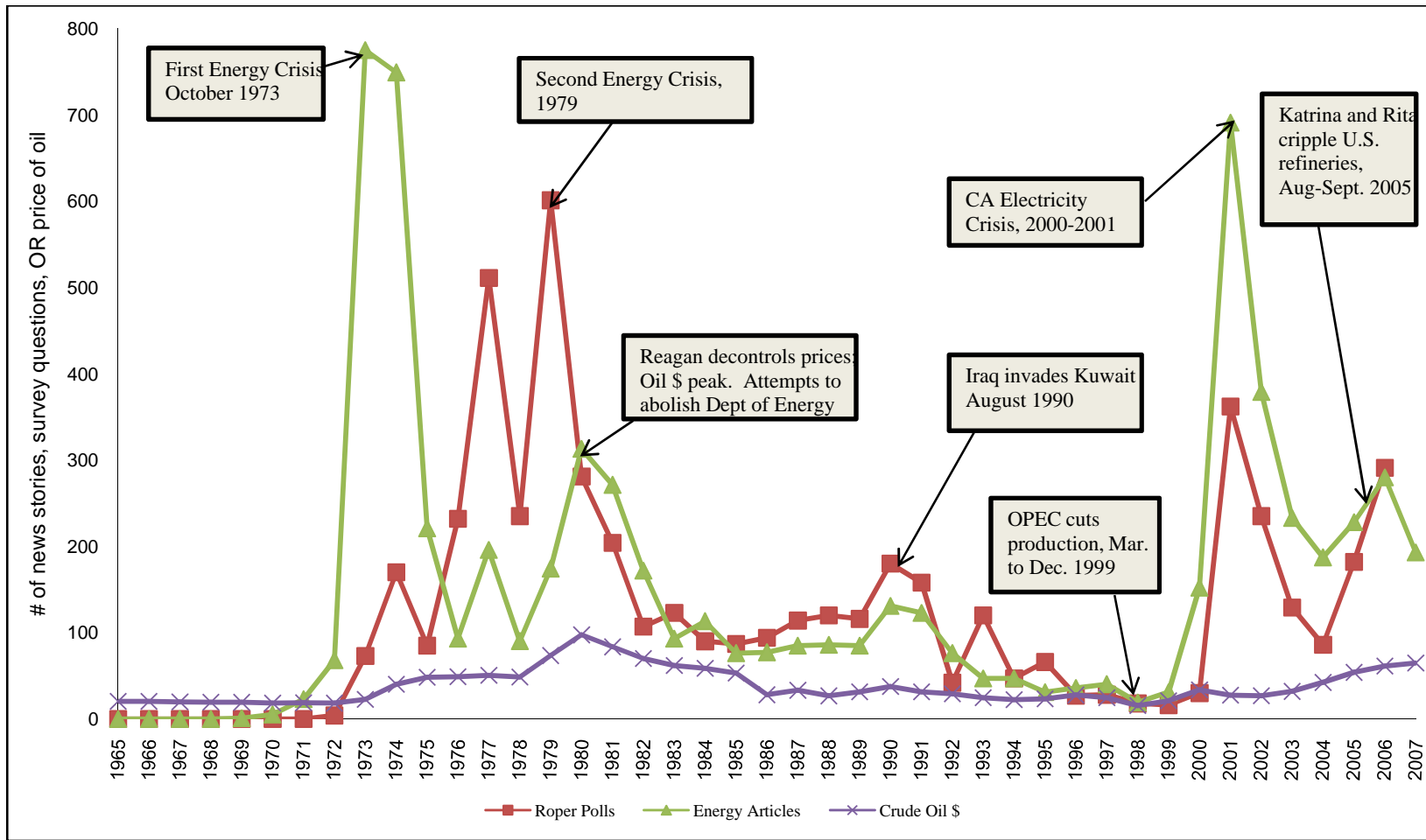
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Table 1. Eras of Action toward Energy Consumption

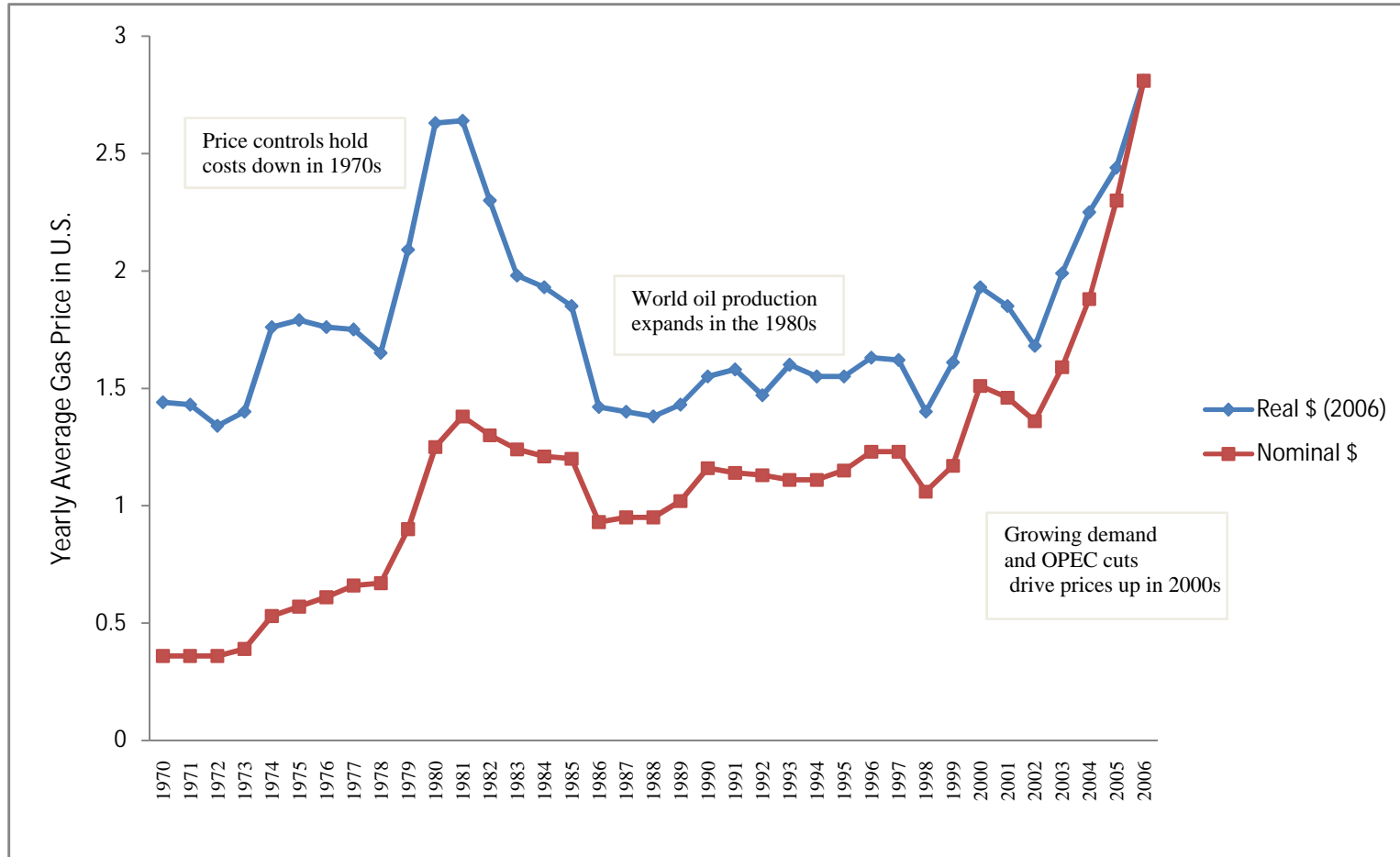
| | Origin of the Period | Major Policy Initiatives | Policy Focus |
|-------------------------------|--|---|---|
| Era of Crisis, 1973-1981 | <ul style="list-style-type: none"> • Arab Oil Embargo (sparks the First Energy Crisis) October 15, 1973 | <ul style="list-style-type: none"> • Emergency Petroleum Allocation Act of 1973 (November) • Energy Policy and Conservation Act of 1975 • Department of Energy Organization Act of 1977 • Second Energy Crisis 1978-79 • National Energy Act of 1978 | <ul style="list-style-type: none"> • Interventionist; Favors Renewables & Demand Reduction |
| Era of Production, 1982-1999 | <ul style="list-style-type: none"> • Ronald Reagan elected President (November, 1980). • Precipitous decline in oil \$ | <ul style="list-style-type: none"> • Economic Recovery Act of 1981 – Price of Oil Decontrolled • Repeal of the Windfall Profit Tax 1988 • Iraq invades Kuwait 1990 (August) • Energy Policy Act of 1992 • Oil \$ record lows in 1998/1999 | <ul style="list-style-type: none"> • Free-Market Deregulation*; Favors Oil & Gas Producers & Demand Growth |
| A Return to Crisis, 2000-2007 | <ul style="list-style-type: none"> • OPEC cuts production in 1999 • California electricity crisis begins in 2000 | <ul style="list-style-type: none"> • California Energy Crisis 2000-2001 • Northeast Electricity Blackout 2003 • Energy Policy Act of 2005 • Energy Independence and Security Act of 2007 | <ul style="list-style-type: none"> • Interventionist; Favors Renewables and Demand Reduction |

Figure 1. The Salience of Energy Issues in the U.S., 1965-2007



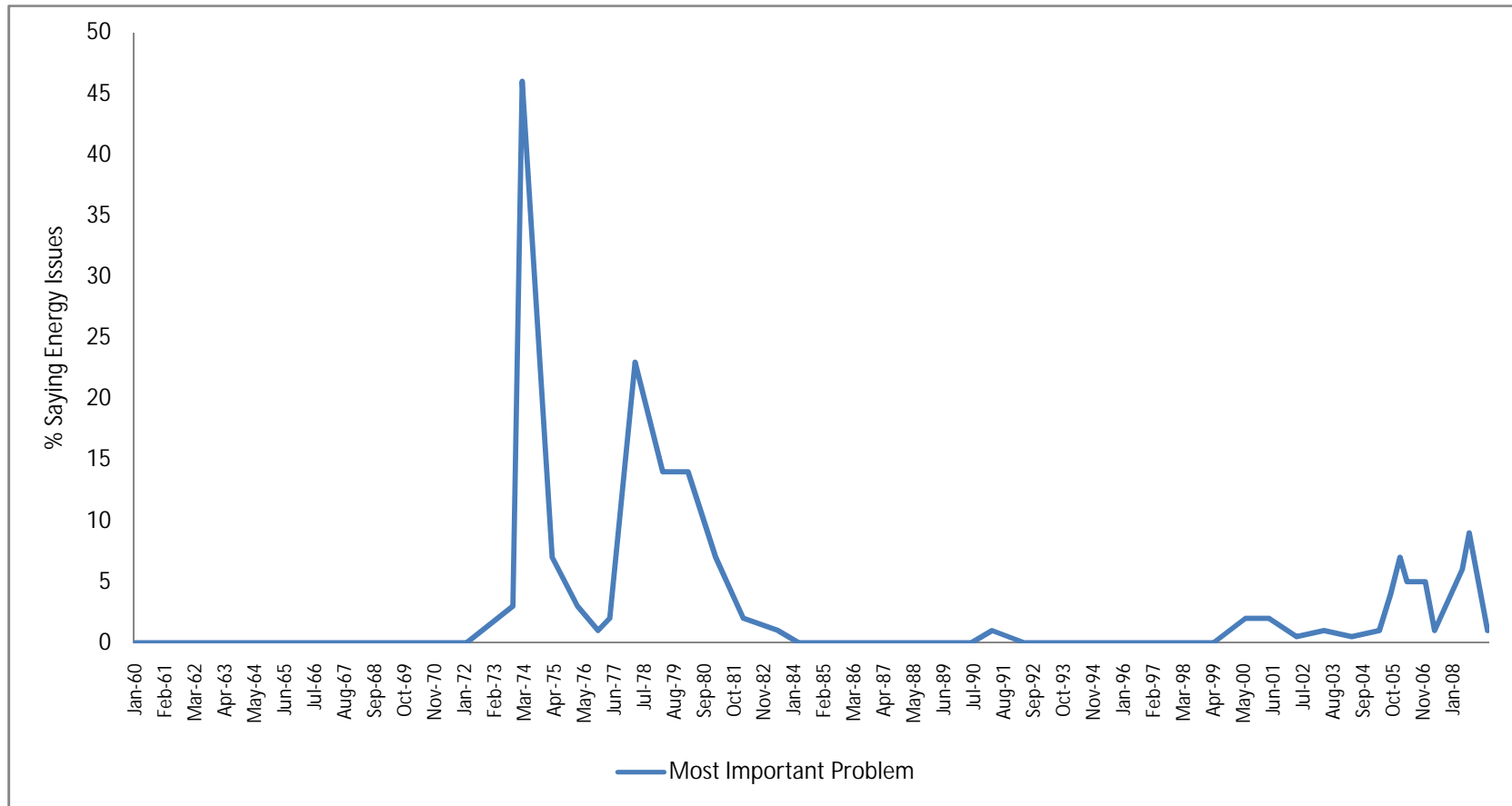
* *Energy articles* is the number of articles appearing in the *NYT* with the terms “energy policy, energy crisis, energy plan, or energy shortage” appearing anywhere in the article (see Wagner, 2008); *Crude oil \$* shows the annual average crude oil price adjusted for inflation (November 2008 prices) using the Consumer Price Index (CPI-U) as presented by the Bureau of Labor Statistics; *Roper polls* is the number of survey questions about energy topics in the Roper Center Archives (Bolsen & Cook, 2008);

Figure 2. Gasoline Prices in the U.S., 1970-2006



*This data is available from Energy Information Association and can be accessed at: <http://www.eia.doe.gov/emeu/aer/txt/ptb0524.html>
 Prior to 1976, the prices are for regular (leaded) gasoline; however, from 1977-2007 the prices are for regular unleaded gasoline.

Figure 3. Percentage saying Energy Issues are the Nation's Most Important Problem



This data was accessed from the Roper Center Public Opinion Archives *Ipoll* databank. Each data-point shows the percentage of respondents in a *Gallup Poll* saying energy concerns (i.e., “energy crisis, fuel shortage, high gasoline, oil, or fuel prices,” “energy problem,” “energy shortages,” “energy polices,” or “fuel/oil prices”) are the “most important problem facing this country today.”

Table 2. Predictions of Frames related to Conservation over Time

| | Behavior Effect Frames (Consequences of Actions) | Causal Attributions (Blame) | Treatment Attributions (Responsibility) |
|-----------------------------------|--|--|--|
| Era of Crisis (1973-1981) | H1: Economic effect frames most frequently cited | H2a-b: Foreign Nations and Industry most frequently blamed for extant situation. | H3: Government and consumers will be most frequently assigned treatment responsibility. |
| Era of Production (1982-1999) | N/A | N/A | H4: Increase in industry as a treatment source |
| A Return to Crisis (2000-2007) | H5a: Emergence of environmental effect frames; H5b: Shift in direction of lifestyle effect frame. | H6: Government increasingly portrayed as a cause of the problem | N/A |

Table 3. Stories about Personal Energy Consumption in the *New York Times*

| | Total # of articles in this period | # of articles focusing on personal energy consumption in U.S. | Energy Curtailment | Capital Investments |
|-------------|------------------------------------|---|--------------------|---------------------|
| 1973 – 1981 | 413 | 45% | 69% | 64% |
| 1982 – 1999 | 220 | 16% | 50% | 53% |
| 2000 - 2007 | 148 | 39% | 66% | 59% |
| | <i>N= 781</i> | <i>N=190</i> | <i>N=124</i> | <i>N=115</i> |

*# of hits is based on a yearly search for articles in the *NYT* with the terms “energy conservation, energy consumption, consume energy, or conserve energy” in the headline or lead paragraph; the number reported in each cell is a count of the articles mentioning the action in each period. The percentage listed in each cell is of the total number of articles in that period.

Figure 4. Effect Frames toward Actions over Time

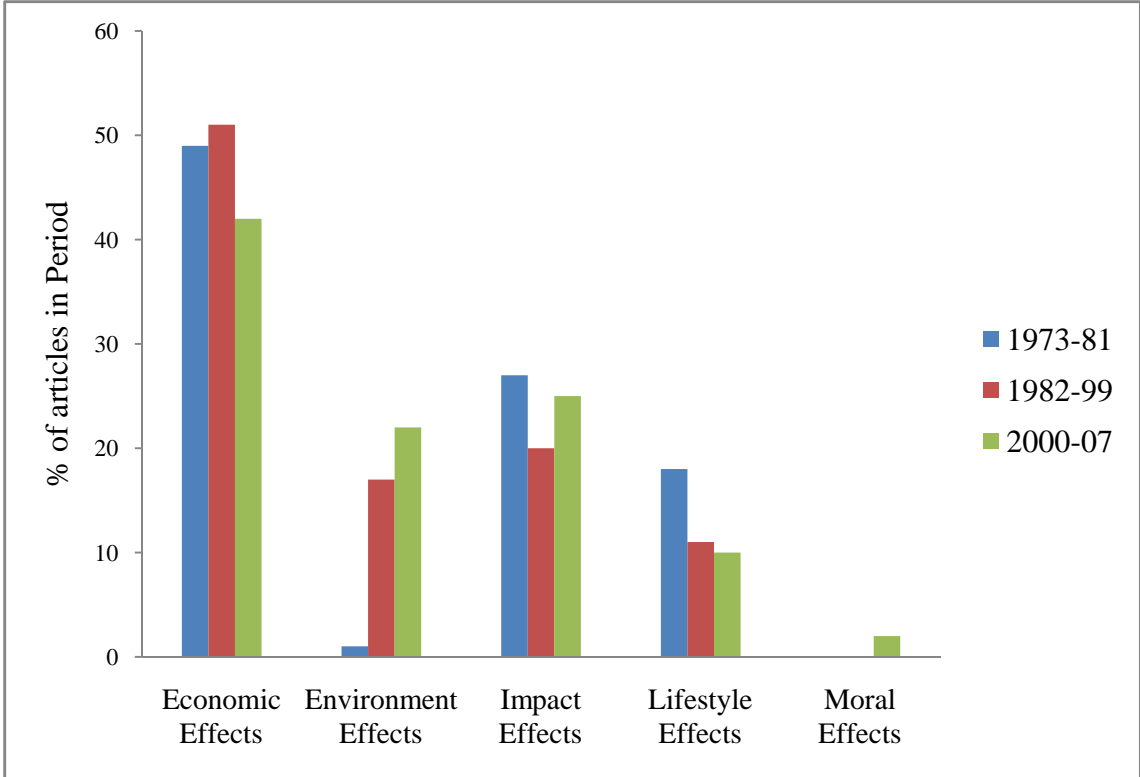


Figure 5. Direction of Effect Frames over Time

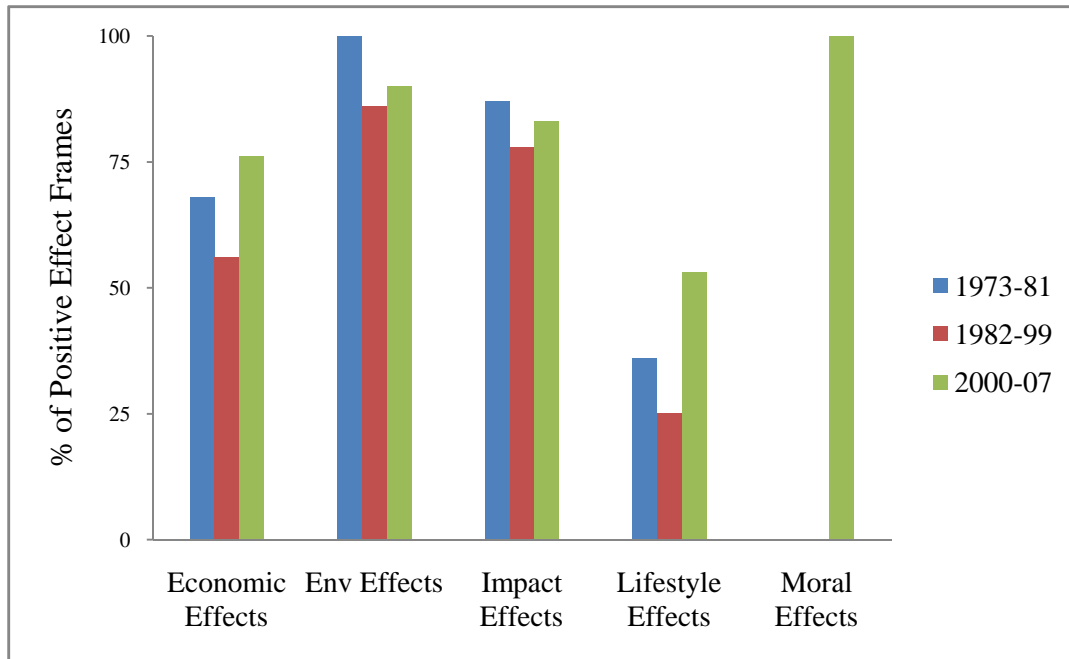


Table 4. Causal Attributions toward Energy Problems by Era

| | 1973-1981 | 1982 – 1999 | 2000-2007 | Total |
|-------------------|-----------|-------------|-----------|-------|
| Industry | 24% | 29% | 22% | 24% |
| Government | 25% | 20% | 35% | 29% |
| Consumers | 13% | 20% | 14% | 14% |
| Foreign Nations | 21% | 15% | 6% | 13% |
| Growing Demand | 16% | 15% | 13% | 14% |
| Natural Disasters | 0% | 2% | 12% | 6% |
| Total | N=70 | N=41 | N=96 | N=207 |

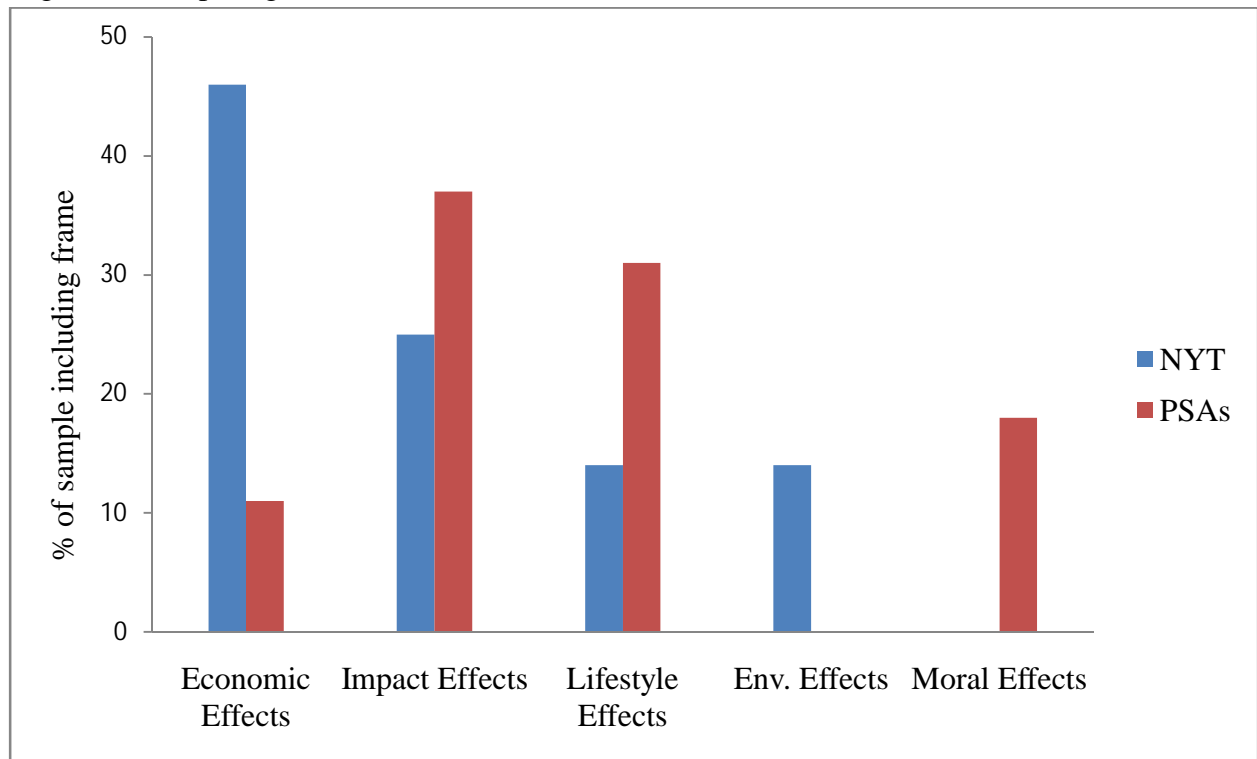
The percentage reported in each cell is of causal attribution frames within a period.

Table 5. Treatment Attributions toward Energy Problems by Era

| | 1973-1981 | 1982 – 1999 | 2000-2007 | Total |
|-----------------|-----------|-------------|-----------|-------|
| Industry | 23% | 37% | 29% | 28% |
| Government | 46% | 40% | 46% | 45% |
| Consumers | 32% | 20% | 23% | 27% |
| Foreign Nations | 0% | 3% | 3% | 1% |
| Total | N=92 | N=35 | N=69 | N=196 |

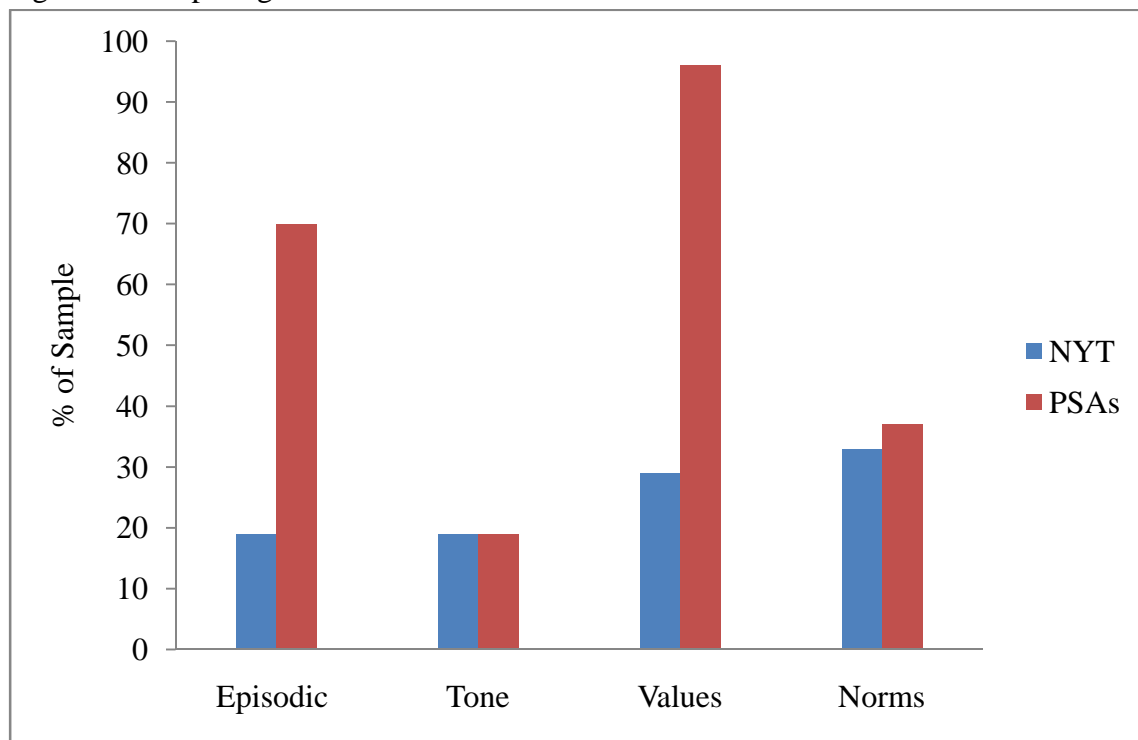
The percentage reported in each cell is of treatment attribution frames within a period.

Figure 6. Comparing Effect Frames across Sources



*Effect frames in the PSAs are universally positive in direction; the percentages displayed for the NYT sample includes positive and negative frames. N=303(NYT); N=67 (PSAs)

Figure 7. Comparing News Content across Sources



N=190 NYT; *N*=27 PSA