To the Graduate Council:

I am submitting herewith a dissertation written by Patra Bonham Rule entitled "Policy Images, Agenda Setting, and Policy Disarray: Energy Images In the Network Evening News, 1970-1990." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the Doctor of Philosophy, with a major in Political Science.

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We have read this dissertation and recommend its acceptance.

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POLICY IMAGES, AGENDA SETTING, AND POLICY DISARRAY: ENERGY IMAGES IN THE NETWORK EVENING NEWS, 1970-1990

A Dissertation

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Doctor of Philosophy

Degree

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Patra Bonham Rule

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ABSTRACT

America's economy and national security are highly dependent upon fossil fuels, especially foreign oil and its by-products. The inability of this nation to forge a coherent, consistent, and effective national energy policy constitutes a most conspicuous failure of the contemporary American polity. To determine the causes of failure in the energy policy arena, this study focused on the nature and role of the mass media, especially television, because it is recognized as a powerful influence in the public policy process.

The thesis of this study is that energy stories broadcast on television news programs during the period 1970 to 1990 produced policy images that significantly contributed to disarray in the policy domain. A systematic content analysis of energy news stories broadcast by the three major networks--ABC, CBS, and NBC, during five sample years (1970, 1975, 1980, 1985, and 1990) was executed. All stories that mentioned oil, coal, natural gas, nuclear energy, alternative energy sources, or a generic energy reference were identified and coded based on information contained in the *Television News Index and Abstracts* from Vanderbilt University Television News Archive. The operation of the television news as a major source of policy images was explored. The frequency of coverage, portrayal, and content, especially aspects employed in news stories, each were found to contribute to the process whereby networks mediate policy reality and help set policy agenda.

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CHAPTER 1

ENERGY POLITICS, POLICY IMAGES, AND THE POLICY PROCESS

Introduction

The central importance of energy resources, production, and use as a feature of modern national life is beyond dispute. America's economy and national security are based directly on its status as a prodigious producer and consumer of energy. The foundation of America's exceptional living standard and trademark culture of consumer materialism is its position as an energy *superpower*. The inability of this nation to forge a coherent, consistent, and effective national energy policy constitutes a most conspicuous failure of the contemporary American polity. This study proposes to inquire into the causes of what one policy scholar characterizes as "energy policy in disarray" (Rosenbaum, 1987: 1) by focusing on the nature and role of mass media in the public policy process.

Since President Richard Nixon heralded the onset of the "Energy Crisis" on November 7, 1973, America has moved unevenly from crisis to complacency. During this period the federal energy role expanded dramatically but inconsistently. Most especially, the Reagan administration sought with mixed success to dismantle and redirect the energy policy framework of federal regulation erected by the administrations of Nixon through Carter. The vicissitudes of energy policy led Rosenbaum (1987: 17) to observe that: "The most predictable elements of federal energy policy since the 1970s are inconsistency and unpredictability." Such a course is not without significant consequences, especially in that fundamental energy problems remain unresolved:

> The impressive improvement in U.S. energy conditions in the late 1980s has created a persuasive illusion that national energy problems have been largely overcome. They have not. Many of the crucial economic and political problems that triggered the energy crisis in the 1970s remain. Moreover, public indifference promotes governmental negligence of newly emerging energy problems sure to worsen in coming years. Two decades of public policy meant to eliminate or ameliorate energy problems have substantially failed (Rosenbaum, 1987: 11-12).

There are a variety of possible explanations for the "public indifference" and "government negligence" that foster energy policy failure. Energy problems compete with myriad other issues for a position on the public policy agenda, and significant swings in public concerns have occurred since 1970. One common explanation for the kind of shifts in concerns that affect policy-making is mass media coverage. As recently described by Baumgartner and Jones (1993: 20), media coverage of issues powerfully influences the policy process:

> In the United States, media attention to public policy issues tends to follow a pattern either of feast or famine. Important political questions are often ignored for years, but during certain periods almost every general media outlet features similar stories prominently. Because individual media outlets tend to base their coverage partly on what other media outlets are covering, this mimicking behavior offers further reinforcement to the lurching behavior of agendas. Issues are low on the public and media agenda during certain periods, but during others a huge proportion of the general media outlets in the United states may feature coverage. No wonder policy experts often view the media with disdain or even outright hostility. Each time there is a surge of media interest in a given topic, we can expect some degree of policy change.

To what extent does this generalization apply to energy problems and to what consequence for energy policy? In studying television news stories about energy during the period 1970–1990, this study proposes to answer that question. The methods applied in this study will permit an analysis of the extent to which television news coverage produced policy images of energy which carry relevance and consequences in the policy arena.

Policy Images and the Policy Process

As Baumgartner and Jones have observed, "social conditions do not automatically generate policy actions (1993: 27)," nor we contend, do they generate specific policy options. What government does, and how it does it, depends on the nature and detail of relevant public discourse. Media coverage of conditions, events, and actors over time contributes to how problems are discussed and understood. After a given problem gains a position on the policy agenda, **i.e.**, is generally accepted as a problem to be addressed by government, the manner in which the problem is framed, discussed, and understood becomes its *policy image* (Baumgartner and Jones, 1993: 25). The policy image of energy ultimately affects its position on the policy agenda relative to other problems, as well as the contours and details of subsequent energy policy formulation, implementation, evaluation, and redesign efforts. The thesis of this study is that energy stories broadcast on TV news programs during the period 1970 to 1990 produced policy images that significantly contributed to disarray in the energy policy domain. By tracking energy stories over time a foundation is established that then permits analysis of television news effects on the policy process which in turn contributes to a better understanding of how policy agendas are set and shift in the modern American polity.

From Energy Bounty to Crisis and Complacency

Throughout American history national security and economic stability have been integrally linked to the seemingly unlimited energy bounty of the North American continent, and to the apparently boundless development of affordable energy technologies. Beyond doubt the American living standard resulted from easily accessible, affordable energy. The accessibility and

affordability of energy depended in large part on disparate and often disjointed government incentives and tax subsidies that sustained both monopolistic and free market energy development. As a result, individual concern for energy was limited, and per capita energy consumption steadily increased. Even in the immediate post-World War II era, as most of the industrial West lay crippled by six years of destruction unprecedented in history, American industrial development continued apace - - propelled by cheap international energy sources, especially Middle Eastern petroleum. The result was mass affluence and a national living standard that became the baseline for judging modern economic performance.

During the 1970s certain events "shocked the American public and policy makers into a sharp, if temporary, awareness of the nation's dependence on foreign oil as an energy source," according to Heilman and Walsh (1992: 42). During two periods, 1973-74 and 1978-79, putative energy crises occurred. The first energy crisis occurred when Arab producers cut off supplies and imposed an embargo, attempting to impact American foreign policy actions. Oil-producing nations, primarily in the Middle East, banded together and instituted the embargo in hopes of affecting western nations' foreign policies toward Israel (Cochran, et al., 1993: 93-95). The second energy crisis resulted from the Iranian revolution, which was preceded by oil-worker strikes that were part of a popular movement to overthrow the Shah of Iran. The revolution threw Iran into chaos that resulted in constrained supplies available to American markets. When the American embassy in Tehran was overrun by Iranian dissidents who seized the diplomats as hostages, foreign diplomacy and relations between the two countries reached an all-time low.

While each crisis served to temporarily constrain supplies and cause steep price increases, the U.S. became dependent upon Venezuela and Iran as alternative suppliers of oil during the first crisis. Oil consumption levels by Americans also declined throughout this period (Davis, 1993: 98-112). The effects of the oil crises were primarily economic, which forced American policy makers and industry leaders into an examination of existing energy policies. Compounding the energy situation further during this period, the nation also experienced natural gas shortages and regulatory activities which had varying impacts on domestic pricing. When global events and international politics combined with unaddressed domestic energy problems during the decade, the impetus for placing energy prominently on the national policy agenda proved unavoidable.

Environmental Concerns and Demands for National Energy Policy

Before 1970 there was little concern among policy makers for the effects of industrialization on the environment. Beginning in the late 1960s, however, America experienced a national environmental movement that eventually contributed significantly to pushing energy issues onto the public agenda. When the deleterious consequences of industrial processes, especially energy production and utilization, upon the ecosystem began to receive prominent attention in the national mass media, environmental concern among the public dramatically rose. By the end of the 1960s, "a series of catalytic events--most notably an oil spill off the coast of Santa Barbara, California, in early 1969" -- spurred environmental groups into action in attempts to mobilize the mass public (Kraft and Vig, 1992: 12). It is noteworthy that the growth of the environmental movement essentially coincided with what came to be known as the energy

crisis--especially problems with oil production, importation, and consumption. The cumulative effects of these events ultimately produced widespread acknowledgment of the need for a coherent, consistent, and effective national energy policy that could produce both *energy independence* and *environmental protection*.

The Tide of Governmental Energy Initiatives

A review of presidential policies during and following the energy crises is useful for understanding how the energy policy arena moved, from an agenda focused on crisis to one dominated by complacency over the last two decades. In 1973 Middle East countries enacted measures designed to grab attention and influence American oil policy. Constrained oil supplies and escalating prices confronted President Richard Nixon, his administration, and the nation with the first oil crisis. Natural gas shortages compounded the crisis and plagued the country during the decade (Goldinger and Moore, 1985: 3-4). President Nixon took immediate steps to address the *energy crisis* by focusing significant federal attention and resources. Nixon's initiatives included the creation of a Federal Energy Office within the White House staff, and of an administrative agency with the purpose of devising broad federal energy policies (the Federal Energy Administration), utilization of emergency presidential powers to impose mandatory supply allocations, and support of Congressional action to create a federal energy agency to centralize all energy research efforts (the Energy Research and Development Administration, ERDA). President Nixon supported market solutions such as increased energy exploration and weakening of environmental standards that inhibited energy development (Rosenbaum, 1987: 4). The range of energy initiatives favored by the Nixon administration provides

insight into a vision of increased participation and regulation of the energy arena by the federal government. Rosenbaum's (1987: 3-4) description of Nixon's approach suggested that the President's efforts were "The first significant White House initiatives in U.S. history to promote comprehensive national energy planning."

Gerald Ford ascended to the presidency during the period of the first oil embargo. A sense of urgency for solving the crisis prevailed at the time which impacted his administration's policy planning and decision making. President Ford supported initiatives introduced during the Nixon administration, and he sought to expand them through immediate removal of existing price controls, which his administration saw as a barrier to U.S. energy independence. Congress endorsed the creation of the ERDA; yet this success for the Ford administration was tempered by the fact that price controls were designed to phase out gradually rather than immediately. Many other substantive energy initiatives occurred during Ford's presidency. Congress and the Ford administration replaced the Atomic Energy Commission with the Nuclear Regulatory Commission, initiated a one billion gallon strategic petroleum reserve, established mandatory fuel efficiency standards for new automobiles, created presidential standby emergency powers, and devised a federal program for testing and labeling the energy efficiency of major consumer products (Rosenbaum, 1987: 5-6; Smith, 1992: 131-132). President Ford's ambitions for energy independence were never fully realized, partially because the Democrat-dominated Congress was divided by geographic and economic factors that tended to limit initiatives focused on conservation and production (Davis, 1993: 106-110).

Solving the energy crisis was also a high priority on the Carter administration's policy agenda. President Carter, like his two predecessors, sought to address the nation's energy woes, but he attempted to create a national energy policy that would establish *conservation*, *efficiency*, *environmental protection*, and *social equity* as its central tenets (Rosenbaum, 1987: 6-7). In an effort to secure mass and elite support for his National Energy Plan and to emphasize the urgency with which the nation needed to act, President Carter symbolically characterized the energy crisis as the "moral equivalent to war" (Smith, 1992: 132).

The National Energy Plan (NEP) focused on reform in governmental institutions through increased regulatory activities and proposed to limit non-governmental market activities. The Congress was strongly divided on the President's energy plan although it eventually passed a diluted version of the NEP. Strong support was lacking for several specific reasons. First, regional differences in energy availability and consumption divided the Congress within and across party lines. Second, energy price increases were resisted from nearly all quarters. Finally, the administration's relationship with congressional leaders affected the process of policy making, partly due to Carter's inexperience at the federal level and his unwillingness to observe practices of consultation long established and respected in each house. The cumulative effect of was a lack of agreement necessary to formulate the comprehensive approach proposed in the President's original National Energy Plan.

Significant strides toward energy independence and development of alternative energy sources occurred despite the differences and difficulties. Highlights of the successes include: the creation of the Department of Energy (DOE), regulations for industrial fuel consumption, federal tax and subsidy

incentives for conservation, deregulation of natural gas and domestic oil, a *windfall profits* tax on oil companies during periods of rising prices, and a research and development program for synthetic fuels (Goldinger and Moore, 1985: 4).

Recognizing the increasing criticism of government intervention in the energy arena, Ronald Reagan campaigned on a deregulation platform aimed specifically at abolishing the DOE (Goldinger and Moore, 1985: 4-8). Once elected, the Reagan administration supported a *mandate* that dictated a distinctly different view toward energy planning and policy from that of the three previous administrations. In his discussion of the Reagan administration's legacy, Vig (1990: 35) cites the disdain that the President had for laws which gave the federal government primary responsibility to promote energy conservation, consumer and environmental protection. Vig summarizes Reagan's approach:

> In Reagan's view, developed during long years of speaking for General Electric before serving as governor of California, government was the problem rather than the solution. He perceived the growth of the federal government, particularly its regulatory functions, as a basic threat to political liberty as well as the source of many of the country's economic and social ills (1990: 35).

The Reagan administration's market-centered approach was exemplified in a proposal that would have permitted federally-held lands to be opened to mineral exploration and development by commercial companies. A leading proponent of such an approach was Secretary of Interior, James Watt. Secretary Watt sought regulatory relief for business while decreasing the emphasis on environmental considerations. The de-emphasis of the environment was substantiated by overall budget reductions of the Environmental Protection Agency (EPA) of about thirty percent, which included

reductions to the Office of Surface Mining's budget by more than forty percent within the first three years of Reagan's first administration. The budget of EPA's research and development division was reduced during this same period by approximately forty-five percent (Rosenbaum, 1987: 9-10; Vig, 1990: 35-40). Despite these significant changes, Reagan's administration was somewhat constrained by Congress, although the successes left an unmistakable impact according to Rosenbaum:

> By the final years of his second term , however, President Reagan had achieved enough of his original energy agenda to change fundamentally the direction of U.S. energy policy. The administration had largely undermined the institutional, legislative, and political foundations for the aggressive federal approach to energy management begun with Nixon's Project Independence and ended with Carter's National Energy Plan. The private sector was given far greater responsibility for the production and allocation of the nation's energy resources than it had under any previous administration since the energy crisis occurred (1987: 10).

Vice President George Bush tried to distance himself from the Reagan administration's opposition to environmental protection in favor of economic development during his campaign for the Presidency. Once elected, President Bush opened the White House doors to environmentalists, who had been largely excluded for eight years. Although Bush's presidency commenced with positive relations with environmentalists, one scholar suggests that his ultimate success in implementing an environmental agenda was mixed, due to three factors: (1) the type of appointees to key environmental positions, (2) budget allocations for environmental programs, and (3) the administration's legislative proposals (Vig, 1990: 48).

The Iraqi invasion of Kuwait in 1990 set off international concern that fuel shortages and price increases might negatively impact already constrained

national economies. Because U.S. dependence on Middle Eastern oil was at an all-time high, a direct response to the third oil shock in twenty years seemed warranted as President Bush took his case to the United Nations and the American people. Following the brief war dubbed *Desert Storm*, the U. S. Congress wrestled for two years to address national energy issues. On October 24, 1992 President Bush signed the Energy Policy Act of 1992 (*Knoxville News-Sentinel*, Sunday, October 25, 1992: A7). While the 1992 Act includes provisions which promote energy efficiency and conservation, it is criticized for not alleviating American reliance on foreign oil (*Wall Street Journal*, Friday, October 9, 1992: A3). The impacts of this Act on energy consumption practices in American society are as yet unknown.

The Energy Politics and Policy Process

Energy politics and policy making have been described as taking place in arenas that tend to be energy-source specific. This process, as modeled by Davis (1993: 20-24) is portrayed in Figure 1.1. (Figure 1.1 and all other figures and Tables are found in the Appendix.) Davis' model is based upon the premise that policy making for each of five major energy-sources (coal, oil, natural gas, electricity, and nuclear power) takes place in separate *policy arenas*. According to Davis, because policy making is energy-source specific, it tends to produce a distinctive set of actors and pressures for each energy type. While the actors and pressures often do overlap, each energy policy arena has its own resultant set of actors and issues, or what Davis refers to as the *politics of the fuel*.

Davis' conceptual scheme of energy politics incorporates three basic components that are the fundamental elements for understanding what affects energy policy making: *physical characteristics*, *market forces*, and *the general*

political context, each with its own set of independent variables. The physical characteristics component includes geographic and production variables, supply factors, economies of scale, and natural monopolies. The second component of the model includes market force variables that are capable of producing price, quantity, and labor regulations. Fuel subsidies and toleration of externalities also are variables in the market component. The third component, the general political context, refers to factors that shape the policy process. Variables in this component include specific *events*, such as a war, or *issues*, such as inflation or economic depression. When an event or issue creates effects in many areas of society, it becomes an intervening variable influencing institutional actors' abilities to impact national and foreign policy during a given time period. According to Davis (1993: 24): "They [an event or issue] so transcend the political issues of their specific arenas as to impose their characteristic features on other arenas. This imprinting of the general political milieu is especially critical in the era in which a particular form of energy first emerges."

Although Davis' model frames most of energy politics and policy, it lacks a component that explains how the flow of information about energy actors, events, issues, and problems influences the national policy agenda. This component is critical for the nature and detail of information exchange in society drives public discourse about policy issues. In the contemporary political process, most public discourse relies heavily on the mass media: "Conditions in society that are not recognized as problems never get on the agenda of government policy makers; those that are, do. Participants in the policy process are usually forced to turn to the mass media to create, dramatize, and call attention to an issue (Starling, 1988: 62)." The Davis model does not

accommodate this feature, and therefore neglects policy images that are likely to shape public understanding, discussion, and decisions affecting energy policy.

A comprehensive model of energy politics and policy needs to incorporate a mass communication component. Figure 1.2 illustrates this model and encompasses every mass media channel—electronic as well as print. The mass communication component includes those aspects of the media likely to affect the development of energy policy images: media type, level of coverage, salience of coverage, content and context of coverage. The placement of mass communication at the center of the model reflects the importance of mass media's role in channeling information within the energy policy arena and within society. The mass media present more than a mere reflection or mirror of reality when they process, filter, and distill information into news stories (Nimmo and Combs, 1985; Graber, 1982; Altheide, 1976; Lang and Lang, 1968). Journalists, reporters, and editors make choices about what topics are presented in news stories. News stories suggest to the audience what subjects are relevant to society by focusing on specific elements of the subject. News stories, especially *television* news stories, are "the primary source of news and entertainment for the average American," and thus create perceptions and images of the subject matter through the attention focused on them (Graber, 1989a: 3-4). Therefore the energy policy arena is essentially a "mediated political reality" in which the mass communication process is a critical component (Entman, 1989; Graber, 1989a; Bennett, 1988; Iyengar and Kinder, 1987; Parenti, 1986; Nimmo and Combs, 1985; Graber, 1982; Cobb and Elder, 1981). Any understanding of the policy process must account for the policy images that frame issue definition and subsequent public discourse. As explicated by Baumgartner and Jones:

> Policy images play a critical role in the expansion of issues to the previously apathetic. Because all people cannot be equally interested or knowledgeable about all issues facing society, specialists in any particular area have an advantage over all others. Since they know the issue better, they are sometimes able to portray the issue in simplified and favorable terms to non specialists. Specialists spend most of their time communicating with each other, of course, but from time to time they must explain their policies to the broader public or to elites with only a passing interest in the area. This type of communication requires some simplified ways of explaining the issues and justifying public policy approaches to them. As a result, every public policy problem is usually understood, even by the politically sophisticated, in simplified and symbolic terms (1993: 25-26).

In contemporary America, these images are developed, shared, and acquire their mass public dimension through mass communication. A comprehensive model of energy politics and policy must accommodate the role of the mass media in producing relevant policy images.

Energy, Environment, and Policy Image: The Santa Barbara Oil Spill Case

To appreciate the general nature and dynamics of how mass media coverage generates policy images, it is instructive to examine a specific example of how the merger of energy and environmental issues forge powerful energy policy images: the oil leak off the coast of Santa Barbara, California that began January 28, 1969. Although oil drilling had been on going for nearly a century within the off-shore three-mile coastal limit, area conservationists and residents had been vocal opponents of the more recently designed federal oil lease program. Their opposition arose out of concern for preservation of the area's natural beauty. But despite local opposition, drilling rights off the California coast were extended and leases executed as part of the federal oil lease program.

When oil was spotted bubbling on the ocean surface around a Union Oil Company well in 1969, investigators discovered a leak in a Union Oil drill pipe shaft. Upon further investigation it was determined that oil was also leaking through natural fissures deep in the ocean floor. These leaks caused a sizable oil slick which posed a serious threat to area beaches, wildlife, and the tourist industry. Reports of the uncontrolled oil leak increased in correspondence to the size of the oil slick. Despite public and private efforts to contain and monitor the oil spill, the slick eventually covered eight hundred miles. Stench from the oil slick blew inward, beaches became polluted, and birds died. Local and state officials, conservation groups, and residents reacted with calls for a ban on offshore drilling until the leak was stopped and the slick was contained (Smith, 1992: 138; Miller, 1988: 268; Gladwin Hill, *New York Times*, February 2, 1969: A1).

As the magnitude of the oil leak became apparent, the mass media *emblazoned* the devastation upon the nation's consciousness through widespread and sustained media coverage. The *New York Times*, recognized as the newspaper of national record, featured five front-page articles on the Santa Barbara oil spill during nine consecutive days of coverage beginning Friday, January 31, 1969. Headline news stories were accompanied by photographs of the ocean polluted with the oil slick, oil-contaminated beaches, an oil covered bird, booms and logs floating to surround the slick, and workers toiling to spread straw on slick-covered beaches.

Television news coverage was also extensive, as evidenced by the twenty-one evening network news stories that were broadcast during the month following the spill (Vanderbilt University Television News Archive, *Television News Index and Abstracts*, January and February, 1969). Network news stories

employed dramatic, indeed alarming, film footage to illustrate the spread of the oil slick as it polluted beaches and endangered wildlife. Environmental degradation and wildlife endangerment were the dominant features in news stories carried by the three national television networks. As a result of the nature and frequency of the media coverage of the oil leak off the Santa Barbara coast, the devastating impacts of large oil slicks commanded national and international attention (Smith, 1992: 138), and a significant environmental dimension pervaded the policy image of petroleum.

This extensive coverage of the Santa Barbara oil spill by the mass media pushed the issue onto the national agenda at a time during which the environment was emerging as a serious political issue. Newspaper and television coverage pointed to an environmental ill caused by oil production. Individuals, environmentalists, and local and state government representatives demanded federal help in solving the problem since the incident occurred on federally leased land. In response to the crisis, Interior Secretary Walter Hickel temporarily halted drilling, the U.S. Coast Guard coordinated containment and clean up efforts, and Union Oil Company workers attempted to plug the leaks. The environmental focus of the news stories on the Santa Barbara oil spill catapulted energy regulation, especially in regards to off-shore oil production, to the top of the national agenda.

The Santa Barbara oil spill served as a triggering event for energy policy images requiring immediate legislative response. Senator Edmund Muskie seized the opportunity to lead anti-pollution legislators to enact revisions to the Outer Continental Shelf Act, creating stricter regulations and clarification of oil company responsibilities and liabilities (Smith, 1992: 138; Weaver, *New York Times*, February 4, 1969: A1). Media and public attention converged to

dramatically alter the general political context and images upon which energy policy was being formulated. NBC reporter Jack Perkins, in a news report five years after the incident, most aptly characterized the impact of the Santa Barbara oil spill, suggesting that it was: "Where mass environmental awareness probably began (Vanderbilt University Television News Archive, *Television News Index and Abstracts*, November 21,1974: 2077, and videotape). "

Factors that contributed to the perception of an energy-environment linkage were the types of sources and the comments that the mass media used to interpret the incident. Conservationists and residents, along with high-ranking local, state, and federal officials, were featured by quotation or appearance in news stories. California Governor Ronald Reagan and other state officials called for improved federal regulations of the oil industry, specifically seeking to expand federal authority to inspect wells outside their existing three–mile jurisdiction. Additionally the state filed a lawsuit to recover the costs of expenditures related to cleanup efforts and to cover damage caused by the oil slick. The timing of this convergence of events and activities introduced new pressures into the politics of the energy policy arena. From that point onward policy images would, at least to some degree, include an environmental dimension.

Because the Santa Barbara oil spill experience marks a watershed in the politics of energy, it provides a prototype for comparing and analyzing all subsequent energy news stories. News coverage of environment issues in general has heightened public awareness and concern for such issues over time. Public awareness has in turn created demands for environmentally safe energy production, alternative technologies, research, and conservation education. Since any news story has many components which contribute to

perceptions and images about a topic such as energy, it becomes instructive to determine the extent to which the addition of an environmental component in energy news stories has influenced perceptions and ultimately policy images over time. Mass images of energy technologies that evolve from sustained attention in network news stories likely provide opportunities and constraints in the options that become acceptable to legislators, interest groups, the president, and other policy actors.

Tracking Energy Policy Images: The Study Design

The purpose of this study is to identify and analyze a sample of all energy news stories that were broadcast in the evening news programs of the three major networks (ABC, CBS, and NBC) from 1970 to 1990. The mass images that emanate from energy news stories are of particular interest because of the influence they may have on public opinion, policy making, and political institutions of society. Vanderbilt University Television News Archive (VUTNA) is the main source for information on television news in the nation.

Beginning in August of 1968, the evening news of the three major networks has been videotaped daily, and then abstracted and indexed on a monthly basis by the Archive. Although Cable Network News (CNN) currently enjoys widespread popularity as a source of news, cable television was not nationally widespread or available until the mid-to-late 1980s. Furthermore, no archive for CNN currently exists, although VUTNA began taping the "prime-time news" program broadcast by CNN in 1991.

Because this study is interested in how energy has been portrayed in news over time, a comparison of the networks' coverage to CNN's coverage is not possible. To determine if news coverage focused on some energy types

more frequently than other, news stories that specifically discuss oil, refined oil products, (*i.e.*, gasoline, kerosene, and jet fuel), coal, natural gas, nuclear power, and alternative fuels including solar, wind, wood, waves, waste, and geothermal (Davis, 1993: ch. 7) are identified and analyzed. Collecting information by energy type allows for comparisons and distinctions of images for each.

Energy policy images are important to an understanding of the process of public opinion formation, and its resultant influences on the policy process. Policy images are not simply conveyed in a single or several news casts but emerge over time through the portrayal, content, and sources that are used to interpret the energy reality. A study of this kind requires a longitudinal design in order to capture the extent to which the mass media have covered energy incidents and events such as the energy *crises* and the environmental movement.

In previous studies of news coverage of energy (The Media Institute, 1982; The Media Institute, 1979; Rankin and Nealey, 1979) the number of energy news stories identified and analyzed by researchers indicated a significant level of news attention to energy. The sheer volume of stories found in these studies, most of which analyzed one to three energy types, along with preliminary testing of a research design for this project, indicates that a monumental data gathering effort would be required to examine energy news coverage for a twenty-year period. To make this study manageable, data collection is limited to sampling energy coverage in five one-year increments: 1970, 1975, 1980, 1985, and 1990. The time period collectively represents sixty months of news coverage. Data collected for these years should cumulatively provide a significant amount of information with which to determine if energy

policy images emerge from information conveyed in the evening network news programs.

The time frame for this study was chosen in order to span various events, social movements, political activities, and market forces as suggested by Davis (1993: 1-25). Because the period of study immediately follows the Santa Barbara oil spill, it permits a comparison of subsequent energy stories to determine if a pattern of coverage focusing on environmental aspects of energy developed. The time frame is of sufficient length to assess the volume and nature of network news coverage and to establish the basic parameters of resultant energy policy images. Although the sample design and period of study will provide a basis for understanding how energy has been portrayed in the network news, the author acknowledges that all sampling designs have inherent limitations which constrain the depth and breadth of information that would be revealed if the universe of TV energy stories were instead collected. The sheer volume of TV energy news stories and the labor intensity involved in content analysis, however, justify the chosen design.

Triggering Events and Media Coverage

Energy events and incidents often create pollution, health and safety hazards, or deep economic impacts. These occurrences become *triggering events* when they create consequences of a magnitude that warrant immediate and often sustained action by both public and private officials. The Santa Barbara oil leak and tanker spills such as the Mega Borg, the Exxon Valdez, and a more recent spill in the stormy North Sea off the coast of the Shetland Islands, had widespread consequences and thus can be considered *triggering events.* Each of these events became widely known, not just because of governmental

action, but because the mass media frequently and often prominently featured them in the news. Two nuclear power plant incidents at the Three Mile Island nuclear power plant near Harrisburg, Pennsylvania and at the Chernobyl nuclear power plant accident in the former USSR are also considered triggering events. Media attention to these events was quite intense and focused on hazards and safety issues of nuclear power. News coverage of societal triggering events has been uneven over the years to the extent that those receiving attention in nightly network news become widely known, and those which have not remain virtually unknown to the mass public (Mazur, 1990; Mazur, 1984).

Media coverage of *triggering events* tends to bring a problem to the attention of the mass populace. For the purpose of this study, a triggering event is *any energy accident or incident, technological breakthrough or new application of an energy source, or policy initiative that would be expected, if publicized, to merit significant public concern. These types of activities have the potential to trigger public opinion, shape policy images, and drive political response.* Table 1.1 lists *energy triggering events. Triggering events* are important for several reasons. First, because triggering events may produce widespread society effects or consequences it is expected that the national news media will cover them—they are by definition *newsworthy.* Second, when triggering events are reported by the news media they tend to affect future coverage, by providing an impetus for follow-up stories or stories with a similar theme. Initial news coverage of an energy triggering event is likely to have important effects on individuals' perceptions of that specific energy type in relation to energy issues in general. Follow up stories that reference a triggering event allow reporters and journalists to summon or cue the audience to an existing image of an incident that is shared among viewers of the prior event. The reference draws

upon an existing picture of reality that was created during interpretations of the event which were initially mediated through news coverage (Iyengar and Kinder, 1987; Gans, 1979). Thus, triggering events and the manner in which they are covered by the mass media are expected to substantially shape policy images.

Television News and Public Policy: The Research Literature

When scholars study the television news, the findings have varied depending on the research focus (direct, indirect, subtle), the length of time examined (points in time by weeks, months, years; longitudinal), and the number of events evaluated (aggregate, cross-sectional, individual). An area that has been extensively explored is television news coverage of electoral activities, as evidenced in Graber's (1987) comprehensive review of this topic.

Television news coverage of another aspect of the political process arose from the work of McCombs and Shaw (1972) who found that the mass media affected policy agenda setting. For these researchers, the process of agenda setting was affected by the type of problems the mass public considers important as a result of sustained news coverage about particular issues or problems. It is through the repeated presentation of problems in news stories that they become salient in people's minds. The notion that agenda setting was a process in which the mass media figured prominently led others to investigate the role and nature of television news coverage as it influenced mass attitudes and opinions (Behr and Iyengar, 1985; Mazur, 1984; Iyengar, Peters, and Kinder, 1982; Lang and Lang, 1981; Gans, 1979; Zucker, 1978). Another line of research sought to examine mass communications, especially TV news, as mediator of political reality through its portrayal of issues and problems in news stories (Nimmo and Combs, 1990; Ranney, 1983; Tuchman, 1978; Altheide, 1976).

Although media studies have generally found support for the agenda setting power of television news stories, several limits to this power have been identified. Issue salience was found to decrease when people have direct experience with the problem or issue, and when an issue is too abstract for most people to conceptualize (Yagade and Dozier, 1990; Neuman, 1990; Demers, et al., 1989; Atwater, Salwen, and Anderson, 1985; Zucker, 1978; Frank, 1973). Studies indicate that news coverage tends to be highly effective in leading public opinion when: (1) viewers have limited or no direct experience or knowledge of a problem; (2) news stories are about a newly identified problem or technology; and (3) stories lead the broadcast, or are prominently featured (Gamson and Modigliani, 1989; Iyengar and Kinder, 1987; Behr and Iyengar, 1985; Mazur, 1984; Iyengar, Peters, and Kinder, 1982; Mazur, 1981; Zucker, 1978).

Interest in media effects beyond the agenda setting process has been explored by at least one additional approach - referred to as either *priming* or *framing*. Although based on the assumption that television news stories affect what people think about and how this changes due to the emphasis or themes of news stories, priming and framing often measure the agenda setting capacity of television news. Priming has been described by Iyengar and Kinder (1987: 4, 63) as:

> A manifestation of television power that is more insidious and perhaps more consequential than agenda-setting. Priming presumes that when evaluating complex political objects...citizens do not take into account all that they know. What they do consider is what comes to mind, those bits and pieces of political memory that are accessible. And television news ...is a most powerful force determining what springs to the citizen's mind and what does not. *By calling attention to some matters while ignoring others, television news influences the standards by which governments, presidents, policies, and candidates for public office are judged* (emphasis in the original). Priming refers to changes in the standards that people use to make political evaluations.

Studies in this vein have found evidence that individuals incorporate the theme of information and sources utilized in news stories when they think about issues and form their opinions (Iyengar, 1991; Krosnick and Kinder, 1990; Demers, et al., 1989; Iyengar and Kinder, 1987).

Energy policy formation was influenced by television news portrayals of events and actors surrounding the energy crises of the 1970s. An early study of television news coverage of the energy crisis and public perceptions of the importance of energy determined that both were sensitive to "real world events (Zucker, 1978)." Zucker also found that if the energy crisis periods were excluded from the time frame studied, energy stories on network television news had a direct effect on public perceptions of the salience of energy in general. Television studies examining news coverage of the Three Mile Island nuclear power plant incident found that issue salience and public opposition toward nuclear power in general increased sharply, but that the duration of the increased rate of public opposition was tempered by a decline in opposition within several months (Mazur, 1981). Opposition toward nuclear power is noteworthy because the rise in opposition is linked with the national and international environmental movement, as well as opposition to nuclear weapons and general military uses of nuclear power. Several studies found that negative opinion formation was associated with high levels of attention in network news coverage to scientific or technical subjects, and even suggest that network news *creates* scientific controversies (Mazur, 1990; Iyengar and Kinder, 1987; Mazur, 1981).

In their study of network television coverage of the Three Mile Island nuclear power plant incident, Nimmo and Combs (1985: 60-86) found that each network provided a unique narration with differing scenic backdrops of the

incident. Visual usage and prominence varied by networks, and the most notable difference among networks identified was the type of story they told. Nimmo and Combs found that the networks presented information in a neutral or somewhat alarming manner more often than in a reassuring manner, possibly impacting policy options available to governmental decision makers (Linsky, 1986: 112-116).

While attention to network news influence in other areas of the political process developed apace, few scholars have sought to explicitly link network news coverage to policy agenda and consequences, providing one impetus for this study. While many studies of television effects imply political consequences beyond agenda setting or public opinion formation, few have actually sought to measure the impact of network news coverage on political elites or on policy.

In an effort to understand news effects on the policy process, however, scholars performed a series of studies. The first , a nationally televised investigative news report of fraud and abuse in home health care sought to gauge agenda setting (Cook, et al., 1983). Although no policy changes were directly attributable to the televised report, symbolic activities such as legislative hearings and policy suggestions apparently resulted due from the broadcast. Actual policy changes were attributed to the pressures placed directly on policy makers by the participating journalists themselves, rather than by public or constituency demands.

Another study in this series investigated the impact of a locally televised series on police brutality. The study concluded that in comparison to other social problems, public judgments about the salience or priority of policy brutality were not affected by the TV coverage. The researchers found, nonetheless, that the attention that the issue garnered during a highly competitive campaign for

local office probably accounted for later policy changes within the local police department (Leff, Protess, and Brooks, 1986).

A third study examined a series of televised reports about toxic waste disposal practices at an urban university campus (Protess, et al., 1987). Researchers found no support for agenda setting among the mass public, but found that government policy makers were influenced to the extent that policy changes were devised and instituted. Evidence in this study indicates that policy changes resulted more from reporters pressuring and collaborating with local government officials than from shifts in mass attitudes. General findings derived from this three-part study series reveals that TV news attention to each of the problems resulted in a policy response of some type: symbolic, procedural, or substantive. The researchers concluded that public attitudes are more likely altered when the media clearly, dramatically, and unambiguously portray an issue on a frequent basis, that is to say, when a policy image is generated. Opinion change was posited as the most likely for non-recurring or break-through issues that are portrayed clearly and often (Protess, et al., 1987: 180-181).

In-depth content analyses of television news are based on the assumption that the information citizens get from network evening news stories has a variety of important effects (Bacot, 1992; Mazur, 1990; Rothman, 1990; Gamson and Modigliani, 1989; Rubin, 1987; Lichter, et al., 1986a; Lichter, Rothman, and Lichter, 1986b; Nimmo and Combs, 1985; Theberge, 1982; Mazur ,1981; Rankin and Nealey, 1979; Theberge, 1979). Several studies that examined network evening news' treatment of nuclear energy found a pattern of recurring negative themes about nuclear energy, even prior to the Three Mile Island incident (Mazur, 1981; Rankin and Nealey, 1979; Theberge, 1979). The

Media Institutes' (Theberge, 1979) ten-year study of nuclear power found that network news stories provided limited information about risks, benefits, or any other explanatory information with which the mass public could determine the viability of nuclear power as an energy option. The frequency of news stories about nuclear power varied among networks, by year, and the story line generally seemed to be related to an "environmental awakening" that led up to and followed the first Earth Day celebration in April 1970.

Although media attention to energy declined following the energy crises of the 1970s, research indicates that anti-nuclear activities in general were increasingly covered in the network news. In an attempt to uncover the basis for negative public and political elites' perceptions about the safety of nuclear power, several studies examined source use in network news nuclear power stories (Rothman and Lichter, 1987; Rothman and Lichter, 1982: 52). Their findings suggest that negative perceptions of nuclear power result from the sources employed in news stories due to the fact that they were limited in number and dominated by antinuclear scientists. Furthermore, when examining the broad perspective of nuclear energy as portrayed in the network news, the existence of available technology and the ability to provide nuclear power in a safe manner were judged to be inadequately portrayed. Assuming that network news affects the agendas of the general public as well as policy makers, evidence from these network news studies of nuclear power suggests that news content holds the potential to impact energy policy choices. These findings strongly imply the power of policy images as a feature of television news coverage.

One study that compared television news coverage of three energy technologies (coal, nuclear, and solar energy) found differences in the

prominence, story tone, and story content for each of the three energy technologies (Rankin and Nealey, 1979). Coal was most prominently featured, followed by nuclear power; news stories about solar energy lagged far behind the other two. A Media Institute study (1982) examined television news coverage of the oil crisis to determine how well the network news informed the public about the causes, effects, and possible solutions to increased prices and constrained supplies. In the process of identifying 1,462 oil stories lasting a total of thirty-nine hours and thirty minutes, the high rate of crisis news coverage became apparent. The study revealed that each network featured distinctly different causes while portraying similar government brokered solutions to the oil crisis. This was exemplified by the fact that in fifty-six percent of the stories on-camera comments were made by or attributed to governmental sources. In contrast, information was only provided by oil industry sources in fourteen percent of all news stories. Researchers found that news explanations of the roots of the oil crisis were dominated by a focus on governmental efforts to regulate domestic industry activities while generally excluding external factors such as OPEC activities and other socioeconomic factors.

Considering the findings from this multitude of television studies, one can conclude that the media appear to influence policy decisions, although to various degrees. There is evidence to support, for example, the proposition that, in certain circumstances, media significantly affects the public policy agenda. Once an issue is on the agenda, sustained coverage of that issue can facilitate or enhance public awareness and influence people's thinking about issues and policy options. Some studies suggest that the media can then constrain or provide opportunities for action in the policy arena. The purpose of this study is

to contribute to the unfolding debate over media effects by focusing on the role of television news in the energy policy arena.

Chapter Previews

Chapter Two introduces a generic model of the communication of policy images and effects by TV network news. It is a theoretical construct of how the news covers actors, events, issues, and problems which occur in reality to televised stories that create mass perceptions and policy images over time. The theoretical propositions guiding this study are provided and explained, and these provide the foundation for basic research questions and hypotheses. The specific operational research model framing this study is presented and the content analysis methods employed are explained. The chapter concludes with a discussion of the data and methods used to locate, code, and process energy stories contained in the Vanderbilt University Television News Archive.

The third chapter presents the findings from the content analysis of the TV news energy story data base. An analysis of the content of news stories identifies the trends and patterns of TV news coverage of energy issues and emergent energy policy images over time.

The final chapter evaluates the impact of network energy news coverage and policy images as these contribute to the contemporary complacency of national energy policy. It systematically assesses the performance of the

research model and then traces the implications of the policy images arising from network news coverage of energy issues and problems.

CHAPTER 2

THEORETICAL BASIS FOR THE COMMUNICATION OF POLICY IMAGES AND EFFECTS

Theoretical Framework

Network news presentations are a blend of various factors, both stylistic and substantive, which combine to create a complex set of images and icons. These images and icons not only affect the transmission of information but also its perception. In an electronic age, the process of communicating information about public problems and policy choices is exceedingly complex. Network news coverage, through the process of transmitting information and educating the public, creates mass perceptions and mass images that impact and influence public and policy makers alike. A theoretical framework which portrays the communication of information to society requires an acquisition of knowledge of the relationships and patterns of interaction that arise from the process (Hoover, 1988: 35).

Obtaining theoretical knowledge about the network news communication process is therefore an important step in the research design. "Theories provide sets of reasons why facts should be connected in given ways and make facts useful by providing us with a framework for interpreting them and seeing their relationships to one another" (Manheim and Rich, 1986: 16). Four specific uses of theory are suggested by Hoover (1988: 35):

(1) Theory provides patterns for the interpretation of data.

(2) Theory links one study with another.

(3) Theories supply frameworks within which concepts and variables acquire special significance.

(4) Theory allows us to interpret the larger meaning of our findings for ourselves and others.

A theoretical framework "is developed to isolate important relationships found in a specific situation" (Graham, 1971: 112) which is the purpose of the framework which follows.

This study offers a framework for the communication of policy images and effects by the network evening news. The research design facilitates the following activities: an organization of the study in a useful manner, the definition of assumptions upon which it is based, and a framework within which to evaluate its results. This framework provides a basis upon which to evaluate the relationship between network news, public perceptions and mass images, and policy. The general theoretical framework, depicted in Figure 2.1 is adapted from Bacot's (1992) study of environmental images of waste issues in the network news. A notable difference between Bacot's model and the one that is depicted in Figure 2.1, is that this model employs the term *policy image* to signify "public understandings of policy problems" that result from characterizations of them in news stories (Baumgartner and Jones, 1993: 25).

The thrust of this study, as reflected in Figure 2.1, is the effect of communication of information by stories featured in network news, from their occurrence to societal effects. Information that is broadcast in television news stories is assumed to result in mass perceptions and images that are relevant to policy. The creation of mass perceptions and images affects democratic governance by helping to shape public opinion. Symbolic and substantive actions by public policy makers are often influenced by their perceptions of public opinion. The theoretical framework generally represents the process whereby reality (actors, events, issues, problems) is transformed into news

stories, that once broadcast and viewed, create perceptions and images which impact policy making formulation both immediately and in the long-term .

The communication process begins when an incident becomes recognized as *newsworthy* by a news editor to the extent that resources are allocated for its coverage. Accessibility and legitimacy of information sources are two significant factors that impact the production of news. The story that is broadcast about a given incident is a news product which transforms or mediates reality for the mass public. If a reported incident is left in the news, continued coverage holds the potential for future influence on the public's perception of the importance of the incident. Implicit in the generic framework is an assumption that initial news stories about a phenomena are generally limited in time and resources allocated to them, competition within a news program broadcast is with a multitude of other daily incidents from which news editors must choose.

Despite these assumed coverage limitations, initial news stories nonetheless convey information and according to Graber (1989a: 5-8) "call attention to matters of potential political concern ... and also provide cues to the public about the degree of importance of an issue." In a similar vein Altheide (1985: 49) suggests that media formats provide clues to viewers which "in turn, impose expectations and parameters on what is forth-coming." The ability of the media to draw attention and provide some level of information and cues in news stories signifies the centrality of the media in the process of creating perceptions which over time cumulatively create policy images. Perceptions about an incident that emerge from initial news stories are capable of manifesting immediate effects, such as raising public awareness or concern for the phenomena.

When media attention about an incident continues, perceptions that were created initially tend to develop further. This process, if repeated and reinforced over time, will ultimately lead to the production of a *policy image* of the incident. Policy images are created over time as a result of the nature of network coverage and frequency. Important story features influencing perceptions of an incident include the aspect(s) presented, placement in news broadcast, and the depth and type of information contained in news stories. A story that is sustained on the media's agenda can cause intermediate societal effects upon citizens' and policy makers' concern, awareness, and opinion formation about the phenomena. Over an extended period of months or years, prolonged coverage of an incident tends to communicate a wide range of information about the incident, including its causes, effects, and proposed solutions. The cumulative nature of prolonged communication is more complex and thus over time, permits a mass *mediated reality* to evolve into what Baumgartner and Jones (1993: 25) define as *policy image*. The policy images then produce cumulative, long term effects, such as limiting or constraining policy options available to decision makers.

The communication of energy phenomenon from incident to policy image is therefore the primary focus of this study and the key component of the research model depicted in Figure 2.2. The analysis specifically seeks to determine what *policy images* of the various energy sources are communicated over time by the three networks' evening news broadcasts.

A second goal of this study is to compare energy policy images among the three networks to determine similarities and differences in the stories and information that they convey. Most of the effects theorized in the general theoretical model as portrayed in Figure 2.1 are not evaluated in the present

research framework presented in Figure 2.2. Limits on researcher resources and time prevent inclusion of the effects component in the present study. The results of this study should, however, provide a basis upon which some inferences can be drawn regarding the relationship between energy policy images and their affects on energy politics.

Television news by way of its widespread availability and its visual and aural power, is the main mechanism by which information is disseminated throughout society. The effect on specific policy types such as the energy policy arena are profound because most people rely on television for information about public affairs issues. News organizations determine which energy phenomena are *newsworthy,* therefore energy news stories that receive continued or prolonged coverage tend to focus on *triggering events* such as the Santa Barbara oil spill case described earlier. Decisions by network news organizations about which aspects of these triggering events to cover over time create the *mediated* reality through the portrayal of specific energy aspects (*i.e.*, environment, health and safety, technology, cost). The news process moves from news cast to creation of initial perceptions; if coverage continues policy images emerge over time to impact public opinion and the policy formulation process.

News coverage which focuses on environmental aspects constrains time available to convey information on other aspects of an incident. Regardless of the focus of news stories, all invariably result in mediated reality. A prime example is exposed in the information about offshore oil production contained in news stories on the 1969 Santa Barbara oil spill case. The mediated reality portrayed in the Santa Barbara stories affected public perceptions and mobilized state and local officials and interest groups into action. Although

conservationists had previously voiced concerns, it was not until the mass media focused attention on environmental problems associated with oil production that the public became focused on pollution created by offshore oil drilling. News stories created the perception of energy causing environmental impact through the film footage which presented a visually compelling record of oil spill damage which viewers could easily understand. By linking oil production to environmental damage, news coverage provided a prime opportunity for the convergence of state and local governments, and national interest groups to rally support and pressure on decision makers within the energy policy arena.

Operationalizing The Model

Acquiring theoretical knowledge of the communication of information by the network news requires the development of a set of propositions which link concepts together through the explication of relationships (Manheim and Rich, 1986: 20). Once concepts are linked, relationships are proposed which provide a framework for explaining reality.

Propositions

Four general propositions about the communication of information to the mass public which propagate the formation of public perceptions and policy images are derived from the research model employed in this study:

> *Proposition I* : Network news mediates energy reality for the mass public.
>
> *Proposition II* : Network news stories about energy phenomena create mass public perceptions.
>
> *Proposition III* : Continued news coverage of an energy phenomenon contributes to increased public awareness and

concern, and creates a generalized policy image that may impact the policy process.

Proposition IV : Prolonged news coverage of energy phenomena reinforces and refines the policy image which may produce wide-ranging societal effects which in turn impact the public energy policy arena.

It is reasonable to expect that, although the environmental aspect of energy production was traditionally not an aspect of energy that was conveyed through the mass communications process (as compared to cost, availability, safety and health aspects), the rise of environmentalism coinciding with the transition to television news *hegemony* had the effect of increasingly linking energy with environmental issues. Environmental issues therefore became a major aspect of energy policy images. Television news coverage now leans toward entertaining, dramatic, and highly visual events; evidence of these characteristics in energy news stories is found in coverage of oil spills, coal mining disasters, natural gas explosions, and opposition to siting nuclear power plants or waste facilities. Network news coverage that mediates energy reality in this manner renders the environment as a major feature of energy images conveyed to the mass public in network news stories.

Basic Research Questions

This study empirically tests the research model portrayed in Figure 2.2. Four basic research questions that focus and guide this study are:

1. To what extent did network evening news programs cover energy actors, events, issues, and problems between 1970 and 1990, and did the coverage change over time?

2. How did the networks cover the various energy types and did this coverage relate to energy *triggering events* between 1970 and 1990?

3. What perceptions and policy images of energy emerge between 1970 and 1990, and did each network produce similar or distinctive images?

4. What are the implications of network evening news coverage of energy between 1970 and 1990 on public knowledge, public policy, and society?

The answers to these four basic research questions are sought by testing hypotheses that flow from the propositions, explicitly stating the relationships that exist among the components of the research model employed in this study.

Empirical Categorizations and Hypotheses

As a unit of analysis, network news stories constitute the sample for this time series analysis. A system of categorization for energy stories becomes necessary for empirical and analytic purposes. The categories utilized to guide the research and analysis in this study are adapted from other content analysis studies: Bacot (1992), Nimmo and Combs (1985), Theberge (1979 and 1982), and Rankin and Nealey (1979). Parameters of energy news stories are analyzed in the following designated categories :

1. *Frequency* - (a) the actual number of energy stories broadcast during research time frame, and (b) the actual number of stories broadcast for each individual type of energy;

2. *Story Length* - time of story length in seconds and minutes; *simple* stories are less than 60 seconds and *complex* stories are one minute or longer;

3. *Story Prominence* - is determined on the basis of story placement and emphasis within a thirty minute newscast; prominence is the sum of story designation into the following categories: *lead* story, a *feature*, or an *editorial* of a given broadcast;

4. *Network coverage* - comparison of energy coverage over time by networks;

5. *Aspect* - the specific (*i.e.* economic, health/safety, economic, or environment) component(s) of information presented in the news story;

6. *Policy Image* - of each energy type that emerges over time as a result of the frequency, story length, prominence, and aspects of network focus in energy stories.

With the categorization scheme outlined, the hypotheses to be empirically tested are as follows:

H_1 The frequency of energy stories will vary over time, shifting with the occurrence of *triggering events*

H_2 The prominence and complexity of energy stories will shift with the occurrence of *triggering events*

H_3 Networks over time will vary in energy coverage

H_4 Energy policy images will emerge over time

H_5 Energy policy images will increasingly include an environmental aspect

It is assumed that television news coverage of energy will vary over time in response to *triggering events*. When an energy incident causes or may cause environmental damage, media attention would be expected to increase. Because the United States is a fossil fuel based economy, it is expected that among the energy types, oil will be covered at the highest level in energy news stories. It is further expected that news stories which feature *alternative sources* of energy will increase during an energy crisis.

Analyzing the Content of Energy Coverage in Television News

As previously noted, the focus of this study is on energy images that emerge from the actors, events, issues, and problems that are featured in network news stories on energy. Holsti (1969, ch. 4; 1968, ch. 16) and Krippendorf (1980, ch. 2), two of the leading scholars in the technique of content analysis, provide general descriptions of the situations in which content analysis is beneficial. Citing the sophistication and importance of content analysis in analyzing communications, Holsti states that:

> Content analysis is a multipurpose research methodology developed specifically for investigating a broad spectrum of problems in which the content of communication serves as the basis of inference (1968: 597).

Adams (1978: 19) summarizes how the use of content analysis in the study of television news has evolved during the last two decades, with a central focus on the "composition of news broadcasts" to determine the priority or agenda of coverage, and the nature or depiction of that coverage. The priority or agenda of news coverage refers to factors that convey story emphasis which Adams (1978: 19-20) refers to as the "frequency, length, and order in newscasts"; analysis of the nature or depiction of coverage refers to story slant, depth, or form in which phenomena are presented.

"Objectivity, system, and generality" are the three most important characteristics of content analysis, Holsti (1968: 598) states, noting that "these requirements are not unique to content analysis, but are necessary conditions for all scientific inquiry." The broadest definition that Holsti offers is useful for the present study: "Content analysis is any technique for making inferences by systematically and objectively identifying specified characteristics of messages

(1968: 601). " Content analysis enables the researcher to determine what energy images are conveyed when information in television news stories. The insights gained from such an endeavor provide a basis for understanding perceptions and images that are conveyed to the public about energy, and which ultimately foster energy policy images. In addition, this information will permit future research endeavors that attempt to compare the policy images portrayed in the mass media with energy and environmental policy proposals debated in Congress.

Content analysis of information provided by the Vanderbilt University Television News Archive (VUTNA) is the primary source of data for scholars studying televised news (Nimmo and Combs, 1985: 21). Based on summaries drawn from the videotapes, the VUTNA produces a quarterly publication, the *Television News Index and Abstracts* (TNIA), which contains information on daily newscasts, by story, for each network. The TNIA includes the following information by network and day: start time of each news story, story location, anchor/correspondent reporting, sources mentioned or quoted, film clips, and commercial sponsor breaks. By analyzing energy news stories over time, it should become apparent if *triggering events* are leading news coverage, which allows direct testing of the theoretical framework.

The start time in the TNIA signifies the story which is the basic unit of analysis. Textual material on every energy story reported by ABC, CBS, and NBC was content analyzed for the years 1970, 1975, 1980, 1985, and 1990. The Index of the TNIA is not used as a primary information source because Index topic headings (*i.e.* atomic power, Atomic Energy Commission) are so numerous and have changed so often during the twenty-year period that the list of topics required to ensure the identification of all energy news stores proved

too large to be useful. Although atomic power, for example, may be distinguished by more numerous key word identifiers and topic headings than most of the other energy types, once all the energy types are aggregated and their topic headings as a whole taken into consideration, it became a formidable problem. It should be noted, however, that depending on the scope of a research topic and time frame, utilization of the Index of the TNIA Abstracts is widely accepted in network evening news research and may be the method of choice.

Because the Index portion of the TNIA was a sole source - the process of identifying and locating energy news stories that pertain to oil, coal, natural gas, nuclear power, alternatives, and generic energy required the systematic perusal of the TNIA Abstracts one page at a time, by network, for every day of each of the years encompassed in the time frame of the study. This search for energy stories is guided by the variable categories and operational definitions for content analysis as presented in Table 2.1. Table 2.2 is the Coding Guide for content analysis of energy stories.

Once energy news stories are located three basic types of information are collected which then permit content analysis: (1) story identification and location information (*i.e.* page number, broadcast date, network, story start and end time) (2) story aspects (*i.e.* environment, economy, health and safety), and (3) news sources mentioned and/or featured (*i.e.* government, industry, citizen, expert). This phase of the research process is important because the location and coding of energy news stories results in a sample population which serves as the data

to be analyzed. The next step of data collection includes designing and building an electronic computer database.

The electronic data base is designed to facilitate ease of data entry and analysis. Energy news stories identified and coded in the first phase are then prepared for the data entry process. Once the information is electronically recorded, the propositions are analyzed and the basic research questions and hypotheses are tested. News stories are analyzed to determine the frequency of attention to energy in general and to each energy source specifically. Using the variables described in Table 2.1, the goal of the study is to discover what energy policy images emerge from network news stories. Variable and frequency counts, along with substantive content analysis, permit the evaluation of the prominence, complexity, and perspectives accorded energy, which result in the creation of policy images in the network news broadcasts.

An integral part of content analysis of communication is reliability and validity, which require these aspects of the data collection process to be verified by a research team (Krippendorf, 1980: ch. 2; Holsti, 1968: ch. 8; Budd et al., 1967: 66-67).[1] To ensure reliability in each of the years that data is collected, two individuals (members of the STaMP research team) identify and code

[1]The research team is associated with the Science, Technology, and Media Project (STaMP) which is a larger project sponsored by the University of Tennessee's Energy, Environment, and Resources Center (EERC) and the Waste Management Research and Education Institute (WMREI). The STaMP members are conducting research under the guidance of Dr. Michael R. Fitzgerald, Senior Fellow at the EERC and formerly under the guidance of Dr. Amy Snyder McCabe, Senior Research Associate at the EERC and Fellow at the Vanderbilt Institute of Public Policy (VIPPS). Members of the research team include Beth Secrist, Ann R. Harvey, Dr. Hunter Bacot, Steve Rechichar, Bill Howard, Amy Gibson, and Patra Bonham Rule.

energy stories, which is one proven method utilized in content analysis research. One of the two coders is designated lead coder and thus identifies and codes energy stories for an entire year. The second person independently identifies and codes energy stories for the three month period of each of the study years. This process nets a verification of one-fourth of the study period by two members of the research team. A calculation of inter-coder reliability scores is performed based upon the news stories collected by both research coders.[2] Coder reliability is determined by comparing the stories identified and information coded by each researcher for each variable listed in Table 2.1. The energy news stories and information coded by each researcher are processed electronically to evaluate the level of reliability . The minimally acceptable reliability scores must equal or exceed a .80 reliability coefficient for the identification and analysis of news story content for inclusion in the study findings.

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[2]Krippendorf (1980) and Holsti (1969) present a comprehensive discussion of formulas and calculations to determine reliability coefficients. The coefficient of reliability employed in this study is from Holsti (1969: 140); the formula is simply a ratio of observed agreements to the total number of judgments. The calculation presented by Holsti (1969: 140) follows:

$$CR = \frac{2M}{N_1 \pm N_2}$$

Where:

CR = Coder Reliability
M = the total number of coding decisions on which the two judges are in agreement
N_1 = the total number of coding decisions made by judge primary coder
N_2 = the total number of coding decisions made by judge secondary coder

CHAPTER 3

NEWS STORIES, PERCEPTIONS, AND ENERGY POLICY IMAGES

General Energy Findings

Content analysis of news stories provides a basis for understanding the fundamental aspects of information communicated in network evening news. An examination of the characteristics of network news energy stories reveals the basic information being broadcast, the amount of coverage and coverage patterns among the networks. All of the variables coded by the research team, except policy[1] reference, met the designated minimum inter-coder reliability score of eighty percent. The reliability coefficient for policy is seventy-seven percent, which means that when research coders categorized a story as mentioning policy, pairs of coders making such decisions were in agreement seventy-seven percent of the time. Although this rate is slightly below the level targeted for inclusion in the study, this level of reliability is judged acceptable due to the fact that it is within three percentage points of the cutoff level; therefore the findings for the policy variable are included in the following analysis.

Frequency

The first hypothesis (H_1) addresses the frequency of energy news coverage as it relates to triggering events. The general findings for frequency of energy coverage are shown in Table 3.1. A total of 3,008 energy news stories were broadcast by the three networks during the calendar years which were examined. Even the years in which energy coverage is the lowest (1970 and 1985) represent part of a sustained pattern of interest by the networks in energy

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[1]This variable is listed as *Policy Reference* in Chapter 2, Table 2.1.

issues and problems, as compared to the level of coverage afforded waste issues (N=788) for fifteen consecutive years (Bacot, 1992: 81-83, 166).

If energy coverage by the TV networks was random by chance, there would have been the expectation that coverage would be equal in each of the sample years; inspection of the numbers in Table 3.1 reveal major differences, however, in the rate of energy coverage by year. During 1970 the networks reported 300 energy stories which is 10 percent of the total number of energy stories identified. News coverage of energy dramatically increased to 1,050 energy stories in 1975 and comparably high levels of energy stories were also reported during 1980. The decreased level of energy news coverage during 1985 (N=214) reflects a fewer number of triggering events that year. The strong increase in energy coverage again in 1990 indicates that the years with the spikes in frequency are most likely related to the occurrence of *triggering events*. As shown in Figure 3.1 the frequency of coverage appears to shift, dramatically increasing with the occurrence of energy *triggering events*.

Continuing to explore the general frequency findings in network reporting turns to the level of attention to each energy type. Table 3.2 presents the percent of total and number of energy news stories that mention each energy type. The networks mentioned oil in 74 percent of the total number of energy stories (N=2,218 stories) broadcast. Generic energy[2] was mentioned in 15 percent (N=462), while nuclear power was mentioned in 11 percent (N=336) of all energy stories. Coal was mentioned in 6 percent (N=192), natural gas in five percent, and alternatives[3] in four percent of the total number of energy

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[2] Generic energy is any reference to energy policy, non-specific energy issue or problem, as defined in Table 2.2, Coding Guide for Content Analysis of Energy Stories.

[3] Alternative fuels include any reference to a non-specific energy source or a specific alternative fuel defined as: solar, geothermal, wind, wood, waste, waves, synthetic fuels, or electric/battery powered as defined in Table 2.2.

stories. These findings reveal that over time the network news stories mention oil in nearly three of every four energy stories. Oil dominates attention given to energy problems and issues by the network news.

News stories are examined by each energy type and year to determine if frequency of attention to energy type varied during any of the years. Tables 3.1 and 3.2 provide evidence that the frequencies of attention to energy with time and by each energy type were not equally distributed. This analysis facilitates a comparison of major energy *triggering events* and levels of news coverage. Table 3.3 shows the variation of coverage of each energy type in each year. During three years (1970, 1975, and 1990) "oil" is mentioned in at least four-fifths of all energy stories. Oil is discussed in almost two-thirds of all energy stories during 1980 and just over half of all energy stories during 1985.

Generic energy ranked second overall in network news attention but the frequency of news stories that mention generic energy range from over one-quarter of all energy stories during 1975, to four percent or less during 1970, 1985, and 1990. During 1980 more than one in six energy stories mention generic energy. News coverage of generic energy appears to dramatically increase when major energy policy proposals are considered. The general pattern of attention to generic energy appears to be influenced by *triggering events.*

Nuclear power news stories are reported more often during 1980 and 1985. Nuclear power is mentioned in one-fifth of all energy stories during 1980 and in nearly one-fourth of all energy stories broadcast for 1985. Fewer than one-in-ten of all energy stories during 1970, 1975, and 1990 mention nuclear power. The absence of steady attention to nuclear power indicates that triggering events are influencing network news coverage in a fashion similar to

that of generic energy. In other words, news stories that discuss nuclear energy tend to appear in noteworthy number only in those years in which a nuclear related triggering event occurs or in a year immediately following such an event.

Figure 3.2 depicts oil, nuclear, and generic stories as a percentage of all news stories on an overlay of major energy *triggering events*. A majority of the energy triggering events are oil related. The 1969 Santa Barbara, California oil spill focused media and public attention on the environmental dangers related to oil production which impacted the coverage of oil during 1970 somewhat. Proposed amendments and debate surrounding the *Clean Air Act* explicitly addressed the energy-environmental linkage by relating automobile fuel emissions to air quality. The contentious Congressional debate over amendments also triggered news coverage of oil during 1970.

Events that signaled the two energy crises in the United States during the 1970s have had enduring effects. These events had a significant impact on the level of attention to energy as did events in the late 1980s and 1990 on the level of attention to oil in 1990. Attention to oil noticeably decreased during 1985 although the level of coverage still exceeds the level of coverage for all other energy types when combined. The decrease corresponds to the absence of a major oil-related triggering event in the year immediately preceding or during 1985.

Oil news stories dramatically increase again in 1990 primarily as a result of oil triggering events: the August 1990 Iraqi invasion of Kuwait and several large oil spills. Iraq's invasion immediately sent a tide of anxiety through the oil-consuming nation's markets. This event and its far-reaching influence provided a needed platform for increased media attention on the American offshore oil drilling ban which had recently gained the support of the Bush administration.

The invasion came at a time when U.S. reliance on foreign oil was high and environmental opposition to new exploration was fairly solid. During 1990 there was steady attention to the 1989 Exxon Valdez oil spill in stories concerning Exxon's responsibility, the role of the ship's captain, and spill clean up. These stories contributed to the overall rate of attention to oil during the year.

The graph line for nuclear power indicates that frequency of attention to nuclear power increased following the occurrence the Three Mile Island (TMI) nuclear power plant accident in 1979. During 1980 the networks capitalized on this highly dramatic event by expanding the focus of attention on nuclear power to problems and incidents at other power plants (*i.e.* Crystal River and Calvert Cliffs), power plant licensing and construction in general, and nuclear waste issues. Because nuclear power was in the news during 1980, presidential candidates on the campaign trail voiced their positions on energy in general and nuclear power in particular.

News coverage of nuclear power in 1985 continued to report on the cleanup at TMI and power plant licensing. New Zealand's ban on ships powered by nuclear fuel, or armed with nuclear weapons attracted the network news coverage. Another reason for the number of news stories on nuclear power during 1985 was the Department of Energy's search for an acceptable site to locate a national nuclear waste facility. The percentage of news stories on generic energy graphed in Figure 3.2 shows that the two years (1975 and 1980) in which news coverage of generic energy peaks are also the years in which energy policy formulation is on the President's agenda.

Coal, natural gas, and alternatives are mentioned less often overall than oil, nuclear power, or generic energy. Network news stories mentioning coal peaked at ten percent in 1985. Network news stories on natural gas also

peaked at 10 percent during 1985. Alternative energy sources are never reported in more than one in twenty energy stories in any of the sample years, which is the least amount of attention any energy type received in network news stories.

Figure 3.3 portrays the percentage of news stories that mention coal, natural gas, and alternative stories as a percentage of all news stories on the overlay of major energy triggering events. None of these three energy types are mentioned in more than 10 percent of all energy stories during any given year. Coal stories during 1970 report on coal mining accidents and widows' settlement claims from such accidents. Legislation to reform surface mining regulations, a strike by West Virginia miners, and power plant conversion from oil to coal were the focus of stories during 1975. Miner strikes in Great Britain and West Virginia, and mining disasters with deaths or injury trigger the networks to report on coal in 1985. Coal stories tend to primarily report tragic mining occurrences as opposed to sustained coverage over time that present information on other aspects of the fuel such as pricing, technology, or supply.

Two types of events spark network news attention to natural gas. During 1970 and 1985 natural gas accidents prompted stories in the news. Natural gas shortages and pricing disparities provided the second impetus for networks to report natural gas. Supply shortages persisted through much of the 1970s which influenced the frequency of news stories during 1975. Alternative energy types are infrequently mentioned during any of the sample years of the study, constituting only one in twenty of all energy stories in 1980 and 1990. During 1980 after nearly a decade of energy crises, gasohol, synthetic fuels, and solar energy are reported as possible alternatives to oil. News attention to

alternatives in 1990 mention numerous energy sources with a majority of stories focusing on either ethanol/methanol or solar energy.

Prominence and Story Length

Prominence of coverage in the network news provides information as to the importance of energy issues and problems relative to competing issues of the time. Prominent energy coverage is defined by the sum of (1) the number of lead stories (first story of the evening news broadcast); (2) the number of stories presented as editorials; and, (3) the number of feature stories (a special segment or focus story on energy). The second hypothesis (H_2) proposes that prominence of energy coverage shifts as the result of the occurrence of *triggering events*. A total of sixteen percent of the energy stories are prominent. The findings indicate that although there was steady attention to energy news throughout 1970, only three percent of all energy news stories for the year were prominently featured. For the four other years of the sample, the percentage of news stories prominently featured is significantly higher than during 1970.

Table 3.4 presents the percentage of energy stories prominently featured and complex in length. Between 1970 and 1975 the percentage of prominently featured energy stories increases by twelve percent. The number of triggering events clustered before and during 1975 help explain the increased number of opportunities network news programs had available concerning new, breaking energy news stories during the year. For the remainder of years sampled the percentage of prominent stories remains fairly close to the percentage featured during 1975. The pattern of increased prominence during 1975 and 1980 is similar to the overall pattern of frequency of reporting on energy. Twenty-two percent of all energy stories during 1990 are prominently featured, representing

the highest level of prominence attained for any one year. The Iraqi-Kuwaiti territorial dispute included controversy regarding strategic oil fields. The unresolved dispute led to Iraqs' invasion of Kuwait which triggered increased attention and prominence to energy during 1990.

News story length (duration in time) is a useful indicator of the amount information and importance conveyed in individual news stories. Story length is defined as *simple* if 59 seconds or less, and *complex* if 60 seconds or longer.[4] In Table 3.4 the percentage of complex energy news stories for each year are presented. Nearly two-thirds of the total number of energy stories for the entire sample are complex. The percentage of complex stories increases during 1975 and 1990, reaching its highest point during 1990 when almost three-fourths of all energy stories broadcast are complex.

Figure 3.4 portrays the percentage of prominent and complex stories as a percentage of all energy stories on the overlay of major energy *triggering events*. Shifts in the percentage of stories that are prominently featured appear closely related to the incidence of energy triggering events, understandable due to editorial decisions to choose the most important or dramatic stories of the day. Important stories change almost daily and therefore the expectation is of an infrequently high percentage of energy stories prominently featured.

The sustained high percentage of energy stories which are complex appears to reflect an on-going interest in energy news, rather than just high attention surrounding periods of events. The United States has moved into a highly dynamic inter-dependent global economy with energy, especially oil, at the center. In recognition of the fact that energy is an important feature of the American economy in this global setting, the networks are designating a

[4] The variable story length is listed as Complexity in Table 2.1.

substantial amount of broadcast time to energy because as a highly important feature of our economy, energy is *newsworthy*.

Frequency, Prominence, and Story Length by Network

The third hypothesis (H_3) suggests that networks will vary in energy coverage. Thus far the data provide evidence that the level of attention to energy varies by year and that news stories cover oil at a significantly higher rate than all other energy types combined. The next step is to determine the rate of attention to energy by each network. Table 3.5 presents energy stories by network as a percentage of all energy stories. Of the 3,008 total energy stories broadcast, CBS reports thirty-seven percent overall to lead the networks. ABC broadcast 32 percent and NBC broadcast 31 percent of the total number of energy stories.

For three of the five years (1970, 1980, and 1985) CBS focused a higher number of stories on energy than the other two networks. Throughout the study period NBC broadcast nearly one-third of all energy stories each year. During two years, 1970 and 1985, ABC focused fewer stories (one-fourth or less) on energy than the other two networks. ABC led the networks in the number of energy stories during 1990 although the range of variation among the networks was minimal. No noteworthy differences in rates of reporting by each network were found for prominence, complexity, or energy type.

General Nature of Energy News Coverage

Network news combines a variety of information to create stories. Factors such as story focus, story-tellers, sources of information, story length, prominence, and type of aspects covered result in a specific portrayal of energy. Energy stories create perceptions. If stories sustain a particular type of story

over a period of years, the perceptions of that story line accumulate to the creation of policy images. The aspects of energy conveyed or ignored in news stories, therefore, have the potential for significant impact in the process whereby perceptions and policy images are formed. The fourth hypothesis (H_4) addresses the general emergence of energy policy images, and the fifth hypothesis (H_5) specifically proposes that energy policy images will increasingly convey an environmental aspect.

To gain insight into the information energy news stories convey the following eight aspects of information were operationally defined: availability, economic, technology, health/safety, environment, conflict/labor relations, conservation, and policy. [5] The operationalized definitions of the aspects are listed below.

- *Availability* - news story mentions energy availability, supply, or energy reserves.
- *Economic* - news story mentions energy prices, costs, taxes, and/or associated regulatory costs to the consumer, government, or industry. Pricing or market control references are included.
- *Technology* - news story mentions energy research and development innovations or applications of such.
- *Health/Safety* - news story mentions health or safety risks associated with working in an energy industry or general public health or safety risks as they relate to the combustion, consumption, or transportation of energy.
- *Environment* - news story mentions pollution, degradation, or contamination of air, land, water, or ground as a result of energy use or accidents. The mention of a risk of such incidents are also included.
- *Conflict/Labor Relations* - news story mentions opposition of an energy type by an individual, group, or the public in the form of protests, demonstrations,

[5]Each of the aspect variables are listed in Table 2.1.

boycotts, or lawsuits. References to labor negotiations, labor mediators, a proposed strike, walkout, or contract negotiations are also included.

- *Conservation* - news story mentions energy saving, energy efficiency, or conservation of energy.
- *Policy* - news story mentions a Policy or Act, or a proposed Policy or Act, or debate of such.

Table 3.7 presents the total and yearly percentage of energy news stories that mentioned each aspect. Economic factors such as costs of fuel exploration, prices of refined fuels, and taxes were mentioned in 42 percent of the 3,008 energy stories identified. Nearly one-third of all energy stories provide policy and availability information which places these aspects as the second and third most often cited , respectively. More than one in five energy stories refer to the environment and less than one in five mention health/safety. Conflicts and labor relations, conservation, and technology each were mentioned in fewer than one in ten of all energy stories.

Analysis of the data by sample year offers the following observations. The environment was by far the most important aspect in 1970, at a frequency of 65 percent but was relatively frequent again only in 1990. Attention to economic and availability aspects was low in 1970 (when supply was plentiful and cost was low) but relatively frequent in all other sample years. This point is illustrated by the fact that in three of the four remaining sample years economic information is conveyed more frequently than other aspects. The aspects of availability and policy did not dominate in any one year but consistently were relatively frequent. Both health/safety and conflict/labor relations were more frequently mentioned in 1970 and 1985 than in other years, rivaling economic and availability aspect frequencies; conservation peaked at 15 percent in 1975 and did not exceed a

five percent frequency any other year; and the aspect of technology never exceeded a six percent frequency.

Nature of News Coverage for Individual Energy Types

An examination of story content for each energy type is the final angle from which energy news coverage is examined and enables a determination of whether energy policy images emerge in news stories. Table 3.8 presents the percentage of energy stories about each energy type that mention the individual aspects. Half of all oil stories refer to economic information which reflects a strong focus on the cost and prices of oil. More than one-third of all oil stories cite availability of oil supplies and just less than one-third mention policy formulation concerning oil. An environmental linkage to oil is referred to in one in five oil stories, while one in ten oil stories mention health/safety. Oil conservation and conflict/labor relations problems are cited in less than one in ten stories; technological innovations, research, or development advances are rarely mentioned in oil stories. Oil's *policy image* focuses primarily on economic considerations and supply, and includes to a lesser degree an environmental component.

Nearly half of all nuclear power stories mention health/safety risks; almost one-third refer to availability and impact on the environment. Policies to regulate nuclear power were cited in nearly one-fourth of all nuclear stories; conflict/labor relations and economic information were reported in less than one-fifth of all nuclear stories. The nuclear power *policy image* which emerges focuses on health and safety of nuclear power generation as radiation is the ever present invisible risk associated with the generation of nuclear power. Availability of nuclear power, environmental impact, and regulatory policy are

also apparent in the policy image of nuclear power. The price of nuclear power is a lesser consideration in the emerging nuclear power *policy image*.

Conflict/labor relations aspects and policy formulation aspects each are cited in approximately one-third of all coal stories. Coal supplies and costs and environmental impact of coal mining or emissions from burning coal each are reported in more than one-fourth of all coal stories. Health/safety issues, especially as they relate to miners' health are reported in fewer than one in five coal stories. Coal conservation and technology are rarely mentioned in news stories. The emerging coal *policy image* centers on labor - management problems and regulatory or compensatory policy information. Coal supplies, costs, and environmental degradation are also part of coals' policy image.

Availability was the most frequent aspect of natural gas stories, while natural gas price information is conveyed in one-third of all natural gas stories. Natural gas injuries and deaths from explosions and policy formulation information are mentioned in more than one-fourth of all stories. Environmental impact associated with natural gas is reported in more than one-fifth of all stories. Natural gas' *policy image* is comprised of supply, cost, health/safety, and policy information.

Availability of the various sources of alternative energy is cited in more than half of all alternative energy stories. Technological advances, research, or development of alternatives is mentioned in more than one-third of all stories; investment or start-up costs associated with alternative energy sources are cited in almost one-third of all alternative stories. Policies to subsidize the development of alternative energy are mentioned in more than one-fourth of all alternative stories. Positive environmental impacts, usually the benefits of alternative energy, are referred to in almost one-fifth of all alternative stories;

energy conservation and conflict and labor relations are reported in more than one-tenth of all alternative stories. The policy image of alternative energy is primarily dominated by availability, technology, and economic aspects; to a lesser degree the positive environmental benefits are also a component of alternative energy.

Evaluation of Energy Hypotheses Using Content Analysis of Network News

Content analysis of information conveyed by the three major network news programs reveals variations in frequency, prominence, and complexity of energy stories over time. The first hypothesis suggests that the frequency of energy stories will vary over time, shifting with the occurrence of *triggering events*. The findings in Tables 3.1, 3.2, and 3.3 sustain the first hypothesis in general terms . Figures 3.2 and 3.3 support the first hypothesis regarding the effect of triggering events on the frequency of attention to each energy type. The number of energy stories during 1975, 1980, and again in 1990 dramatically increase over the 1970 level in response to *triggering events*. For example the Yom Kippur War which led to the first energy *crisis*, debate surrounding the passage of air emission regulations, natural gas shortages, the offshore oil leasing debate, and President Ford's energy proposal all served as triggering events which led to increased attention to energy in the network news during 1975. High levels of network news attention to energy occurred again during 1980, related to the second energy crisis brought on due to the Iranian revolution, President Carter's energy proposals, TMI, OPEC meetings, and the synthetic fuels debate.

Figure 3.1 portrays the decline in energy coverage during 1985, a point in time that is characterized by the absence of energy triggering events

surrounding the year. The level of attention to energy is still substantial during 1985 although news coverage is significantly decreased as compared to the number of stories in the two previous sample years. Attention to energy significantly increases again in 1990 representing a final shift in relation to triggering events. These findings provide strong support to uphold the first hypothesis.

The second hypothesis addresses the prominence and complexity of energy news stories; data presented in Table 3.4 and in Figure 3.4 provide a basis for evaluating this hypothesis. Energy stories dramatically increase in prominence between 1970 and 1975 as a result of several triggering events. The prominence of energy stories is related to triggering events in each sample year. When triggering events occur, prominence increases. The complexity of energy stories is substantial during each year of the sample. Triggering events tend to increase the number of complex stories somewhat, but due to the sustained level of complex stories over time, substantiation of the complexity component of the second hypothesis is more modest. Editorial decision makers have determined that energy news is sufficiently important to regularly provide a substantial amount of time and information to energy problems and issues.

The third hypothesis states that over time networks will vary in the frequency of their energy coverage. Tables 3.5 and 3.6 provide the data upon which to evaluate this hypothesis. CBS provided the highest percent of news stories broadcast during the period of study. ABC and CBS appear to vary the most in their percentage of energy stories broadcast by year; this was confirmed when a chi-square, goodness-of-fit test was calculated to determine if there was interaction between the networks and sample years. The chi-square was 31.79 (for the entire table) which is highly significant. This level of significance

suggests another question which aids in evaluating this hypothesis: did the networks vary significantly in their energy coverage to the extent that it would make a difference in viewer perception of salience of energy issues? The answer to this question is found by reviewing the information presented in Table 3.6. The chi-square test calculated reveals that there is a highly significant difference in the way networks cover energy although the variation is only contributed by two of the networks: ABC and CBS. NBC's coverage reflects a more equal and expected rate of coverage over time and is not statistically significant. Based upon these findings the third hypothesis is supported.

The fourth and fifth hypotheses state that energy policy images will emerge and that an environmental aspect will be increasingly part of energy images. Tables 3.7 and 3.8 present data the data upon which these hypotheses are evaluated. The fourth hypothesis is upheld based upon the findings that a distinct policy image emerges for each energy type as discussed in the last section. The fifth hypothesis is not supported based upon the findings. Environmental aspects are conveyed in nearly two-thirds of all energy stories during 1970 and in nearly one-third during 1990. Attention to environmental aspects of energy exploration and usage appears strongly related to environmental accidents (*i.e.* the Santa Barbara oil spill, the Exxon Valdez oil spill) and environmentally-related energy policy formulation.

The inconsistent frequency of attention to environment suggests that the networks and the public are generally interested and attuned to environmental consequences primarily when accidents occur. The cost and supply of energy and the general economic consequences of these factors for society appear to override environmental concern in the absence of major oil spills. One

explanation for the lack of support for this last hypothesis may be a product of a sampling error related to the limited number of years in the sample.

CHAPTER 4

CONCLUSIONS AND IMPLICATIONS OF ENERGY POLICY IMAGES

Summary

The role of energy resources as part of contemporary life is widely recognized. America's economy and national security are highly dependent upon fossil fuels, especially foreign oil and its by-products. The most recent example of the international importance of oil was dramatically apparent when in August 1990 Kuwait invaded Iraq. The U.S. reacted by quickly coordinating an allied force with which to pressure Iraq into withdrawal. When it became apparent that international pressure alone would not suffice, military advisors, troops, and other resources were committed to ensure protection of this strategic oil supply and markets for the allied nations. This incident clearly portrays the role of energy in not only America's national security and economy, but as a part of the increasingly global economy in which energy is a primary component.

Despite the central importance of energy, the United States has failed to develop and institute a coherent, consistent, and effective national energy policy during the last two decades. Efforts to gain control of socioeconomic and political factors which led to the energy crises of the 1970s were designed to include federal intervention as the solution to this vexing problem although this has occurred in an inconsistent manner.

Because mass media, especially television, is recognized as a powerful influence in the policy process, this dissertation sought to investigate the extent

to which energy policy image information was conveyed in television news stories. Editorial decisions which lead to coverage of energy (and other issues) are often based upon the visual and dramatic appeal of the events, issues, actors, or problems. Newsworthiness is therefore often dependent upon entertainment-like qualities which help shape the initial salience of a problem. One recent study of policy agendas (Stone, 1989: 281-283) discusses the process wherein causal stories attribute or place blame as a crucial component in facilitating image making and thus problem definition. Once a given problem is defined as solvable by government action and on the policy agenda, news stories which cover the problem create perceptions which over time result in a *policy image*. The manner in which a problem is framed, discussed, and understood becomes its policy image and it is, as such, central to public discourse in the other stages of the policy process.

The operation of the TV news as a major source of policy images in the modern American polity was systematically explored. The frequency of coverage, portrayal, and content, especially aspects employed in news stories, each were found to contribute to the process whereby networks mediate policy reality and help set policy agenda. This process includes the networks' capacity to define and interpret events, problems, and issues that significantly influence citizen disposition toward public problems and policies.

To what extent and in what fashion did the TV news between 1970 and 1990 convey information about energy problems and issues? This systematic

investigation of energy coverage during the period indicates that the TV news made an important contribution through: (1) the identification of certain *triggering events* that focused public attention on energy problems in general, and certain aspects of energy in particular; (2) shifts in the frequency, type, prominence, and aspects of energy coverage that resulted in important nuances in energy policy images over time; (3) a consistent emphasis on energy problems which focused a degree of public attention to energy issues and which could support energy's continued placement on the policy agenda.

Evaluation Of Findings

What do the study findings show about the dynamics of the process by which TV news contributes to the policy process? This is determined by returning to the basic research questions presented in Chapter Two.

Basic Research Question 1: To what extent did network evening news programs cover energy actors, events, issues, and problems between 1970 and 1990, and did the coverage change over time? TV news extensively covered energy over time (N=3008 energy stories), although the level of news coverage was not constant and instead highly variable on a year-to-year basis. The frequency of energy news stories varied from a yearly high of 1,050 stories in 1975 to 214 stories in 1985. Three years (1975, 1980, and 1990) account for nearly three-quarters of all energy stories broadcast for the five one-year samples.

Basic Research Question 2: How did the networks cover the various energy types and did this coverage relate to energy *triggering events* between 1970 and 1990? Each energy type was tracked over time to reveal that TV news attention is highly variable and unequal. Oil stories dominated network energy stories when aggregated for the period and also for every sample year. During years in which one or more oil-related triggering events occur (*i.e.* 1970, 1975, and 1990), the percentage of news stories that mention oil are higher than the other sample years. During 1980 and 1985, for example, the number of oil stories declines somewhat and non-oil news stories increase. Oil so dominated media coverage that a pattern of attention to energy over time emerges: network news stories covered oil at a consistently higher rate over time and this pattern is reinforced by energy triggering events. Nuclear energy was the second most often reported energy type.

The relationship between the frequency of TV news stories and energy triggering events is further substantiated by variations in the percentage of energy news stories prominently placed in newscasts during the period of study. Energy stories were more prominently featured in the years (1975, 1980, and 1990) when the highest number of triggering events occurred and when the highest number of energy stories were reported.

Basic Research Question 3: What perceptions and policy images of energy emerge between 1970 and 1990, and did each network produce similar or distinctive images? Analysis of the various aspects comprising a policy image

for each energy type showed a variation in content. The policy image of oil stories was dominated primarily by economic, availability, and policy aspects. When an energy triggering event with visible environmental consequences occurred (*i.e.*, the 1969 Santa Barbara and the 1989 Exxon Valdez oil spills), however, environmental information became a central component in oil news stories. In the absence of an environmentally related energy triggering event, oil's policy image was derived from information conveyed about the cost, supply, and federal regulatory initiatives designed to influence these market-related aspects.

Nuclear energy's policy image arose primarily from stories about health and safety risks, power plant operations and construction difficulties, and environmental impacts. News stories also mentioned regulatory policy initiatives which also contributed to nuclear energy's policy image. Coal's policy image was grounded in stories that focused on labor-management disputes and strikes, policy, cost, supply, and environmental impact. The policy image that emerged for natural gas was rooted in supply, cost, health/safety, and policy aspects. Information about alternative fuels' were presented the least often of all energy types studied. To the extent that alternative energy sources were covered, the policy image was dominated by availability, technology, design and start up costs, and policy initiatives.

There was some variation in the number of energy news stories reported by the three networks, and no other substantial variation among the networks

was found. They each reported energy types at a similar relative frequency and reported similar aspects for each. These findings establish that perceptions and policy images of each energy type emerge in network news stories.

Evaluation Of The Theoretical Framework

This study, by tracking energy stories over time, applied a theoretical model of the communication of policy images by the network news. What do the findings, conclusions, and implications of this research imply for the suitability of the theoretical framework laid out in Chapter Two?

Evaluation of Propositions

Four general propositions were associated with the framework that guided this inquiry. These were: (1) Network news mediates energy reality for the mass public; (2) Network news stories about energy phenomena create mass public perceptions; (3) Continued news coverage of an energy phenomenon contributes to increased public awareness and concern, and creates a generalized policy image that may impact the policy process; and (4) Prolonged news coverage of energy phenomena reinforces and refines the policy image which may produce wide-ranging societal effects which in turn impact the public energy policy arena.

This analysis of energy stories reveals that, indeed, the TV news operates in a fashion consistent with these propositions. That is to say, news attention to certain energy triggering events provided a focused basis for mass

perceptions of energy problems, issues, and policies. The consistency of news attention to certain *types* of energy (e.g., oil and nuclear as compared to coal, natural gas, and alternative fuels) and energy *aspects*, (e.g., availability and economics rather than environment, health/safety, conservation, or technology) produced the kind of *policy image* that could stimulate public concern for energy--but would not engender mass demands for innovative energy policy in the absence of a sustained crisis over oil/gasoline prices and supply. Thus, the continuing American dependence on imported oil, with its profound long-term social, economic, political, and environmental risks is reinforced by news-based policy images that are not well-rounded balancing of all dimensions of energy. Therefore, the findings of this study are not inconsistent with, or contradict, the basic propositions of the theoretical model.

Modification of the Framework

Based on this research, certain modifications of the original theoretical framework are in order. The importance of triggering events and the emergence of policy icons (discussed in the next section), especially, require refinement to accommodate a more complex coverage dynamic than originally proposed. The modified model is provided in Figure 4.1. News producers select those actors, issues, and events worthy of coverage with triggering events enhancing the likelihood of selection. As coverage of some triggering events continues, the events become policy icons driving sustained coverage. If policy icons endure

long enough, then, they become part of the socially-shared accounts that have the potential to assume mythical proportions. Those events, the model holds, form the most enduring and strongest elements of any policy image.

Conclusions and Implications

Several conclusions can be drawn from the answers to *Basic Research Questions* One through Three. First, triggering events are an extremely important feature of the energy policy image process. Not only do they provide the impetus to coverage of particular events, they seem to sensitize the media to similar future events, and thereby increase the likelihood that some issues will receive sustained public attention. Second, certain triggering events become virtual energy *icons* (*e.g.,* Santa Barbara oil spill, the Arab oil embargo, Three Mile Island, and Exxon Valdez). Such icons then allow the media to easily remind the public of certain events without extended explanation or discussion. This further enhances the likelihood that certain issues will endure over time in the public mind.

In an early discussion of "news as purposive behavior" scholars (Molotch and Lester, 1974: 101-102) discussed when and how "occurrences" are utilized in a fashion similar to icons, although they do not explicitly develop the same concept or terminology. They suggest that "...once such use occurs (important events, '"occurrences" are used to mark time periods) . . . an occurrence becomes . . . a resource for constructing events in the future." Third, once

established, such icons become important features of future public discourse about issues. That is, not only are these icons employed by the media to frame and present future stories, they become part of the language, context, and framework of public discussions about related issues.

The implications of these conclusions involve answering *Basic Research Question 4*: What are the implications of network evening news coverage between 1970 and 1990 for the public policy process? The implications are best delineated by focusing on issue-attention cycles.

Issue Attention-Cycles

In a seminal attempt to explain American attitudes toward "improving the quality of our environment, " Downs offered the notion of the *issue-attention cycle* (1972: 38). According to his conceptualization of shifting public concerns:

> Public perception of most 'crises' in American domestic life does not reflect changes in real conditions as much as it reflects the operation of a systematic cycle of heightening public interest and then increasing boredom with major issues. This "issue-attention cycle" is rooted both in the nature of certain domestic problems and **in the way major communications media interact with the public** (1972: 39; emphasis added).

The issue-attention cycle, as explicated by Downs, consists of five stages of varying duration depending upon the particular issue involved. The stages of the issue-attention cycle are summarized in Figure 4.2. In Stage I "a highly undesirable social condition exists but has yet to capture public attention, even though some experts or interest groups may already be alarmed by it (1972: 39).

As a "result of some dramatic series of events," the cycle moves to Stage II when the "public suddenly becomes both aware and alarmed about the evils of a particular problem (39)." The alarmed discovery in this stage is "invariably accompanied by euphoric enthusiasm about society's ability to 'solve this problem' . . . within a relatively short time (1972: 39)."

Two decades after Downs' original formulation, it is apparent that citizens tend in this stage to manifest *alarmed discovery*, but no longer is *euphoric enthusiasm* common. Downs recognized, it is worth noting, that a "more pessimistic view" of societal capacity to completely solve problems had "begun to develop in our culture (1972: 39). The third stage consists of a "gradually spreading realization that the cost of 'solving' the problem is very high indeed (1972: 39-40)," as reality settles into public perceptions. Almost "imperceptibly," the public's developing sense of reality is "transformed" into a gradual decline of public interest in the problem. In Stage IV most people develop some combination of feelings of discouragement, boredom, and threat leading to suppression of thought about the problem. "Consequently, public desire to keep attention focused on the issue wanes (1972: 40)" and some other issue begins to attract mass attention. In Stage V "an issue that has been replaced at the center of public concern moves into a prolonged limbo--a twilight realm of lesser attention or spasmodic recurrences of interest (1972: 40)." A refinement to Downs' fifth stage in the attention cycle may be in order in light of the discussion above describing the process whereby certain triggering events are transformed

and emerge as icons. No such refinement is described in the current study, but this consideration shall be addressed in future work.

Existence in Down' *twilight realm* does not mean an issue returns to its pre-problem status. Once through the cycle, issues tend to manifest a latent attention status that is higher than that originally held in the pre-discovery stage. Argues Downs:

> Any major problem that once was elevated to national prominence may sporadically recapture public interest; or important aspects of it may become attached to some other problem that subsequently dominates center stage. Therefore, problems that have gone through the cycle almost always receive a higher average level of attention, public effort, and general concern than those still in the pre-discovery stage (41).

The issue-attention cycle would seem to explain, therefore, the shifts in attention to energy problems, issues, actors, and triggering events found in this study, and may help explain the lack of consistent policy responses. As a generation of energy aspects moves through the issue-attention cycle, it retains a certain latent status that contributes to a higher overall level of public concern for energy issues. The cyclical nature of news attention to energy aspects is pictured in Figure 4.3 which presents the four aspects of energy most frequently mentioned in TV news stories. The cyclical attention to each aspect is apparent, but especially noteworthy is the strong appearance of the environment in 1970 followed by a drop off during the next three sample years, only to rebound during 1990. Once established in the public mind, the policy images of different energy

problems become important information filters through which subsequent events and information must pass as the issue-attention cycle progresses.

Triggering events that are reported by the news media play an important role in issue-attention cycles. They tend to affect future coverage by providing an impetus for follow-up stories or stories with a similar theme. Initial news coverage of an energy triggering event is likely to have some impact on individuals' perceptions of a specific energy type. Follow up stories that reference a triggering event allow reporters and journalists to summon or cue the audience to an existing image of an incident that is shared among viewers of the prior event. If this happens enough, over an extended period, a triggering event can be transformed into a *policy culture icon.* Thereafter, the mere invocation of the name of the event, *e.g.*, *Santa Barbara*, *Arab oil embargo*, *TMI, Chernobyl,* or *Exxon Valdez,* becomes a symbol invoking powerful images without extended explanation or discourse. That is to say, a triggering event potentially opens the process whereby future references to it draw upon socially shared vision of its reality that was created during interpretations of the event which were mediated through news coverage (Iyengar and Kinder, 1987: ch. 7).

Certain triggering events become conventionalized and abstracted through repetition. When this transpires, triggering events are reduced to *policy icons* : *deeply encoded devices of personal and social memory relevant to policy.* Policy icons readily are employed in mass communication and subsequent public discourse about public policy. If and when this occurs, the problems that

the policy icon has encoded socially are then easily summoned from Down's *twilight realm of lesser attention*. The potential for distortion, over-simplification, and misapplication of policy icons is immense--especially as they are employed within severe time constraints of the television news.

This research supports the idea that network news, especially through the development and use of policy icons, engenders simplified definitions of complex problem events. This is done by anchoring them to enduring symbols and feelings with which the problems can be associated. This process poses significant implications for the understanding of the interaction of news media, mass opinion, public policy agenda-setting, and political responsiveness.

Future research needs to probe more deeply the relationship among triggering events, policy icons, issue-attention cycles, mass communication, public discourse, and public opinion. The development and use of policy icons in the news media, and their role in policy debates merits exploration. Interest in energy on the part of the news media has assumed an enduring quality. The findings and conclusions of this study indicate that TV news has inconsistently presented the various energy aspects which in turn create incomplete policy images. Certain policy icons--such as TMI and Exxon Valdez, have assumed the status and quality of veritable *energy myths* via a common and widespread acceptance. Several definitions of myth are provided in **American Heritage Dictionary**[1] including the following:

[1] Second College Edition, s.v. "myth."

> (1) A real or fictional story, recurring theme, or character type that appeals to the consciousness of a people by embodying its cultural ideals or by giving expression to deep, commonly felt emotions. (2) A fiction or half-truth, especially one that forms part of the ideology of a society. (3) A fictitious story, person, or thing.

In their discussion of the politics, reality, and fantasies, Nimmo and Combs (1985: 14) present a definition that is pertinent to the theoretical model revisions:

> "A myth is a credible, dramatic, and socially constructed picture that people accept as permanent, fixed, unchanging reality. The genius of the Founding Fathers, the greatness of Abraham Lincoln, the Manifest Destiny of America are all examples of myths. Fantasy themes may combine to support enduring myths; at the same time, fantasies conforming to a nation's mythology endure and continue chaining out because of that mythology.

The possibility should be considered that certain triggering events have become the kind of stories Richard Slotkin (1992: 5-6) identifies as crucial to our historical memory and our future actions. These would be stories drawn from our recent history that have "acquired through persistent usage" the power to symbolize American society's energy and environmental ideology and dramatize its energy consciousness--"with all the complexities and contradictions that consciousness may contain" (Slotkin, 1992: 5). The role of the electronic news media may, indeed, have more far reaching impact on our policy culture than simply driving issue-attention cycles. As a possible source of policy myths, the effect on our political culture of the TV news may be profound indeed.

Policy Images and Policy Disarray

Our national failing in the energy policy arena, or what Rosenbaum (1987: 1) characterized as "energy policy in disarray" has generally been substantiated by this study. The findings reveal that the networks broadcast energy stories that were dominated by policy images which were focused on the economic and availability considerations of oil. The energy images which emerged for each energy type do not provide a consensus, nor the complexity of information required for public discourse which would lead our nation to forge and implement a comprehensive and effective national energy policy. A variety of factors which would be necessary to forge a comprehensive energy policy would probably include energy self-sufficiency, conservation, and renewable resources.

Rosenbaum suggests an answer to the disarray in energy policy arena in which "a balanced energy program" would prepare the United States for future energy needs. A program such as Rosenbaum envisions would lead the United States to undertake a comprehensive policy that "involves a balance between different, even competing alternatives. Balance creates greater resilience in energy management, providing the United States with more resources and options in dealing with energy problems. Based upon past experiences as well as anticipated future problems, balanced energy goals should include the following: (1) Reduced dependence upon imported petroleum; (2) Reduced dependence upon nonrenewable energy; (3) Reduced environmental stress from

fossil fuel combustion; (4) Increased energy efficiency; (5) Renewed federal programs that signal to the economy a long-term governmental commitment to energy efficiency, environmental protection, and renewable energy development; (6) Reduced governmental intervention into private sector decision making about energy development; (8) Increased economic growth; and (9) Conservation" (Rosenbaum, 1987: 190-191). With the continued international importance of energy, it seems that an approach similar to the one suggested by Rosenbaum is a viable avenue toward American economic and national security.

Study Limitations and Lessons

The limitations inherent in this study must be acknowledged and may assist future research and other scholars. First, because triggering events proved such an important feature of TV news coverage, the 5-year sampling design inevitably missed important events and is certain to underestimate to an unknown degree their subsequent impact on energy policy images. This design, for example, likely *underestimates* the role and impact of the Carter Energy Plan, TMI, Chernobyl, and Exxon Valdez. The lesson here is that future work should avoid such large gaps in the times sampled so as to increase the likelihood of capturing triggering event coverage and effects. Rather than gathering data for every month for a sample of years in a period, validity would be enhanced by (insofar as picking up triggering event coverage and effects is concerned) sampling months within every year. Better still, of course, would be to gather the

population of stories for the period. Table 4.1 provides the background information that would be necessary in order to link network news energy coverage to policy outcomes. To facilitate this type of future study, the research design would require incorporating one or more of the above-mentioned modifications. An example of such future research, Figure 4.4 displays the number of TV energy news stories identified in this study with a chronological overlay of national energy policies.

A second limitation of this study is that stories were not actually viewed. The frequency, prominence, type, complexity, and network of stories, as well as the aspects of energy covered in the evening news provides a substantial, but nonetheless incomplete, picture of energy images projected to the mass public. The visual and verbal dimensions of stories surely contribute to image formation, especially for that class of triggering events we define as *icons*. We suspect that much of the utility and staying power of policy icons is to be found in the relative ease with which these events, as compared to others, are amenable to dramatic electronic visualization and symbolization. The lesson here is that once the fundamental parameters of policy images are established, and important policy icons are discerned, attention to their visualization must be given. Otherwise, the policy image is incompletely drawn and understood.

The third limitation of the study is that it did not actually measure the images held by the consumers of the TV news--the mass public. Therefore, what is estimated from this research, at best, is the policy image *projected* by the

TV news--not the policy images actually held by the public. Both are clearly important in understanding the role of the mass media in the policy process. The relevant lesson here is that the dynamics of news coverage, while complex and changing, follows discernible patterns. Future research with improved sampling designs is likely to greatly enhance accuracy with which image-projection patterns are traced and understood. Far greater effort and resources must be devoted to studying the impact of these projections on individuals and groups in the public.

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APPENDIX

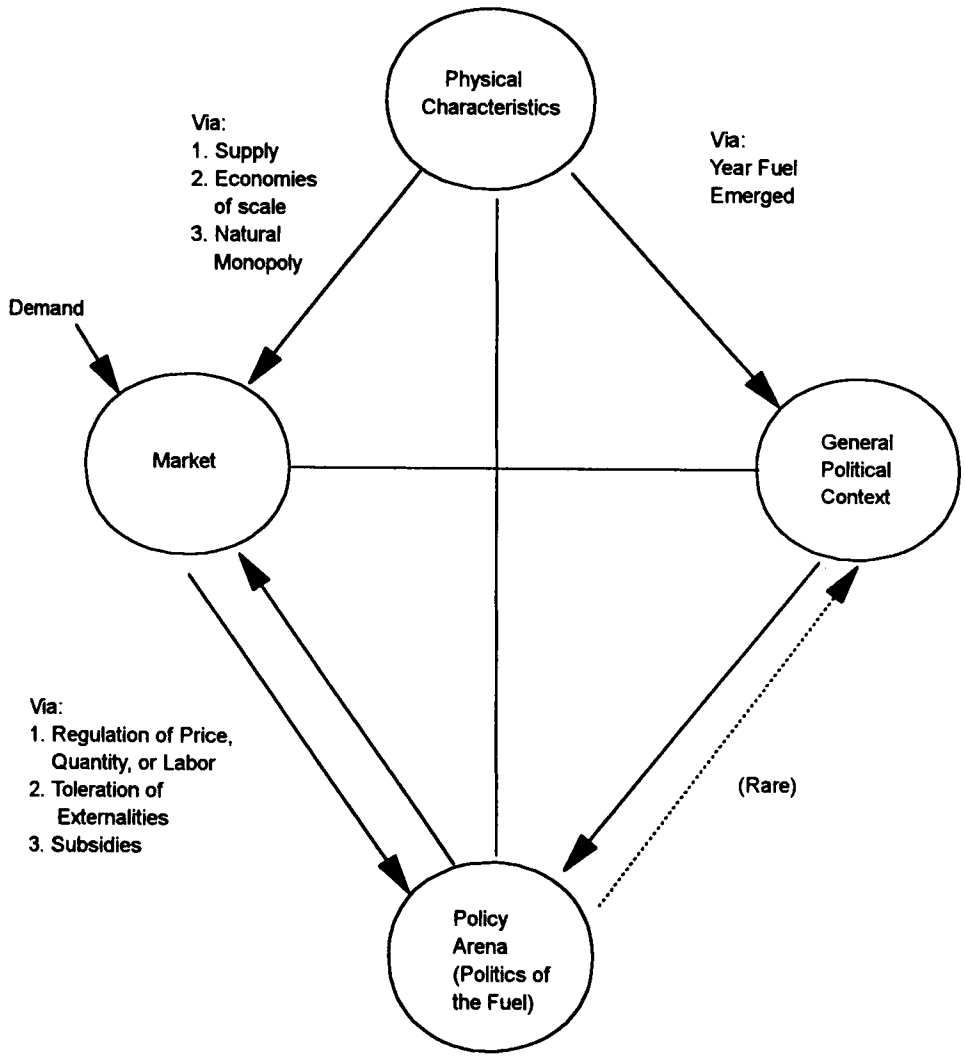

Figure 1.1 Conceptual Scheme of Energy Politics

(Source: Davis, 1993)

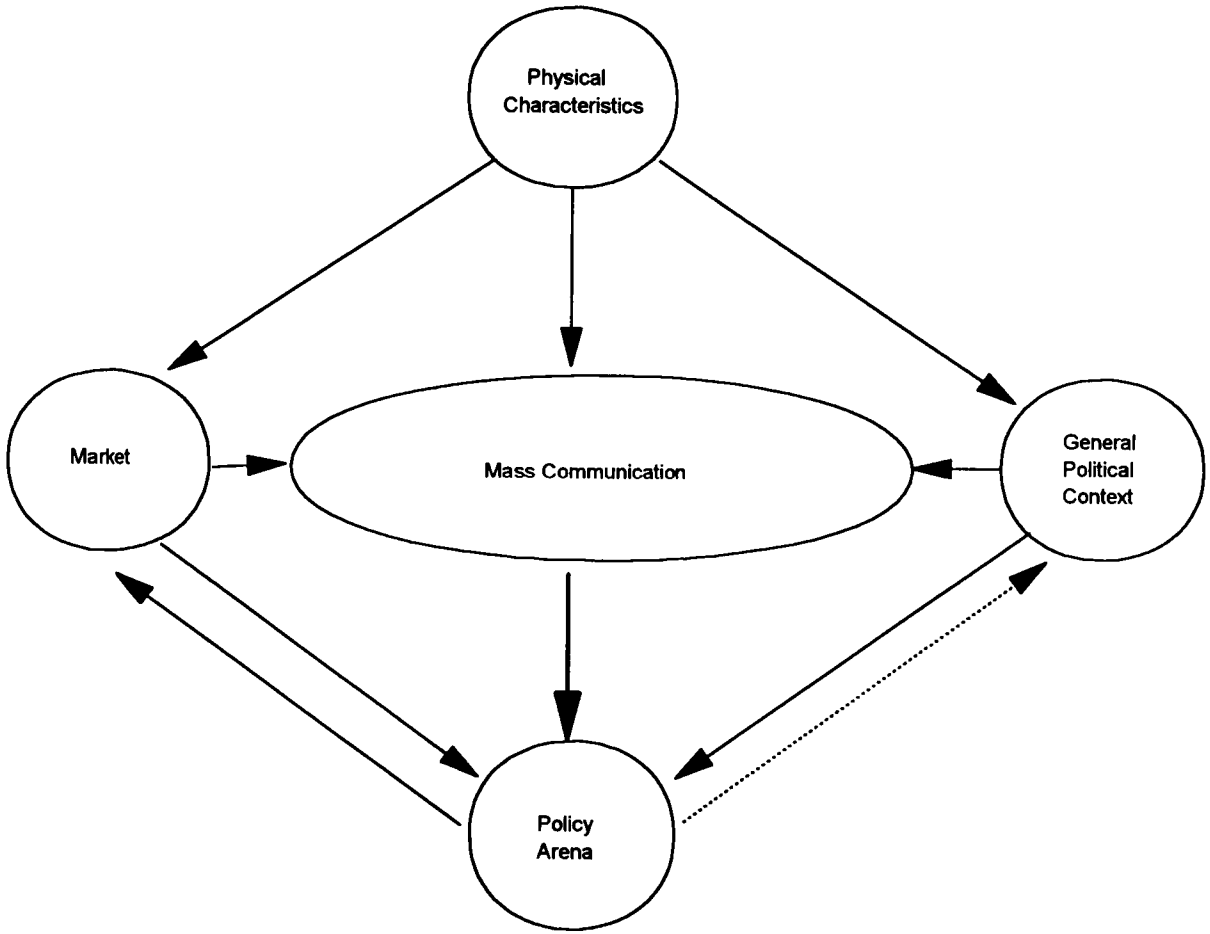

Figure 1.2 Conceptual Scheme of Energy Politics and Mass Communications

(Source: Adapted from Davis, 1993)

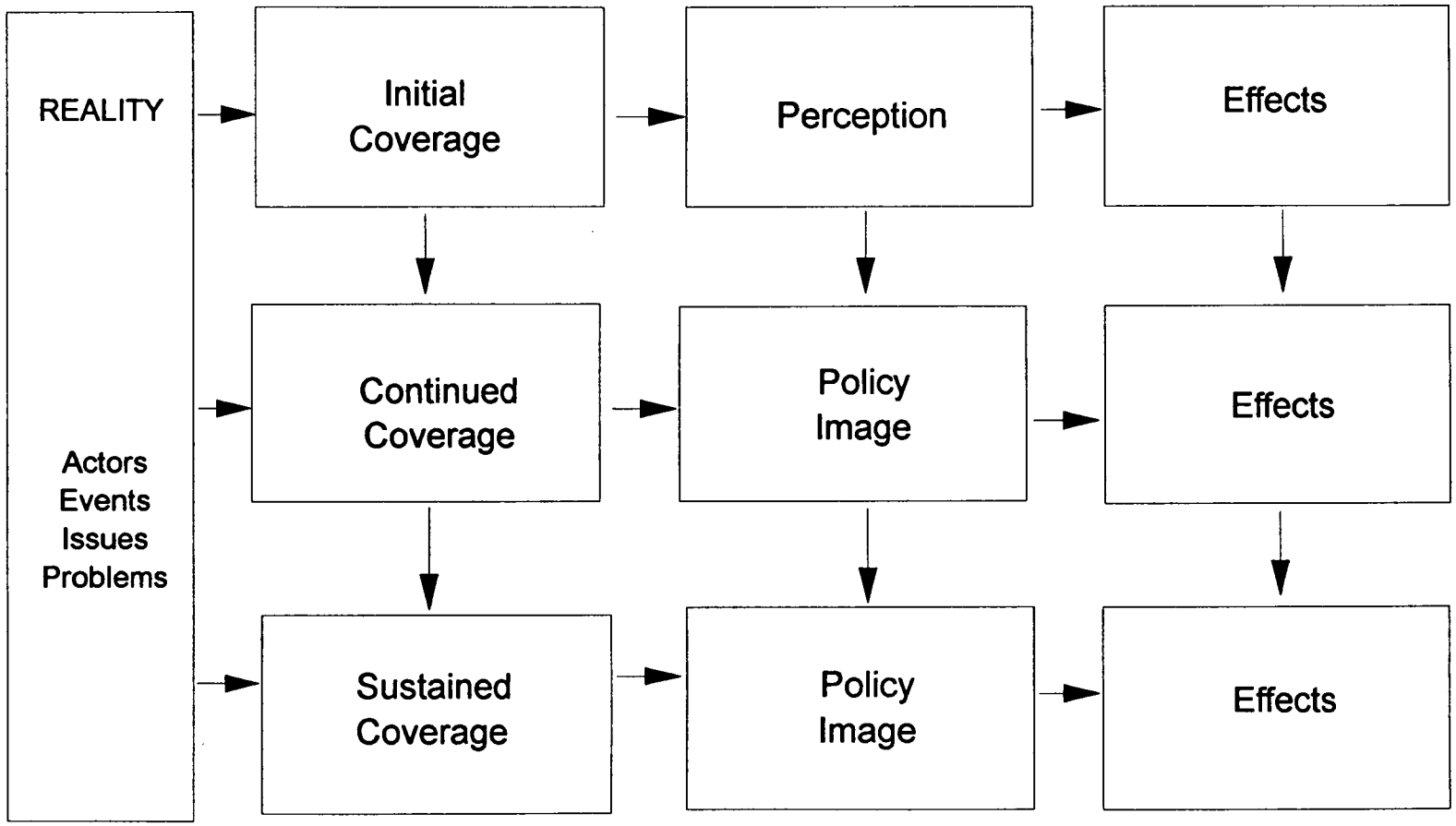

Figure 2.1 Theoretical Framework of the Communication of Images and Effects by the Network News

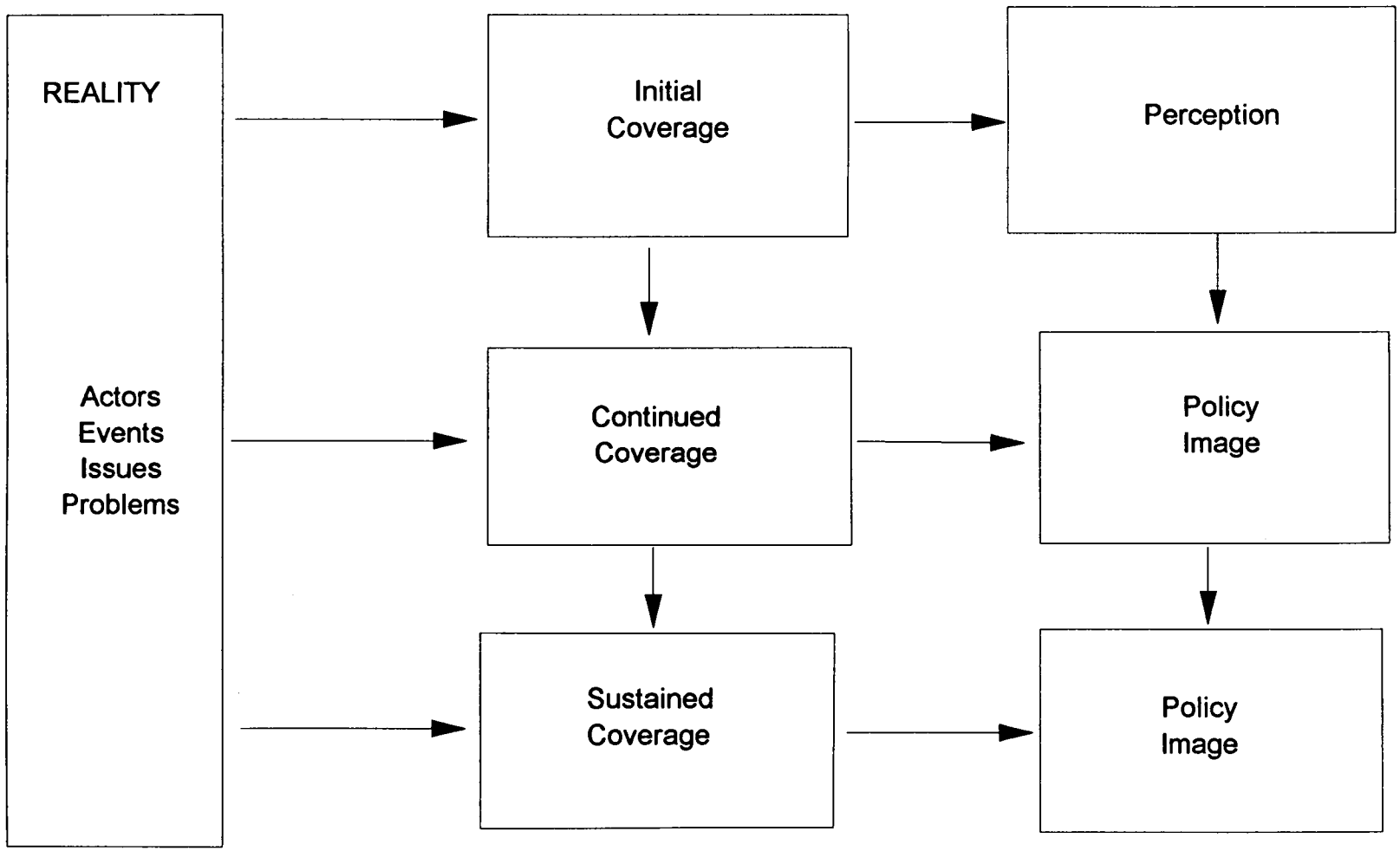

Figure 2.2 Theoretical Framework of the Communication of Policy Images by the Network News

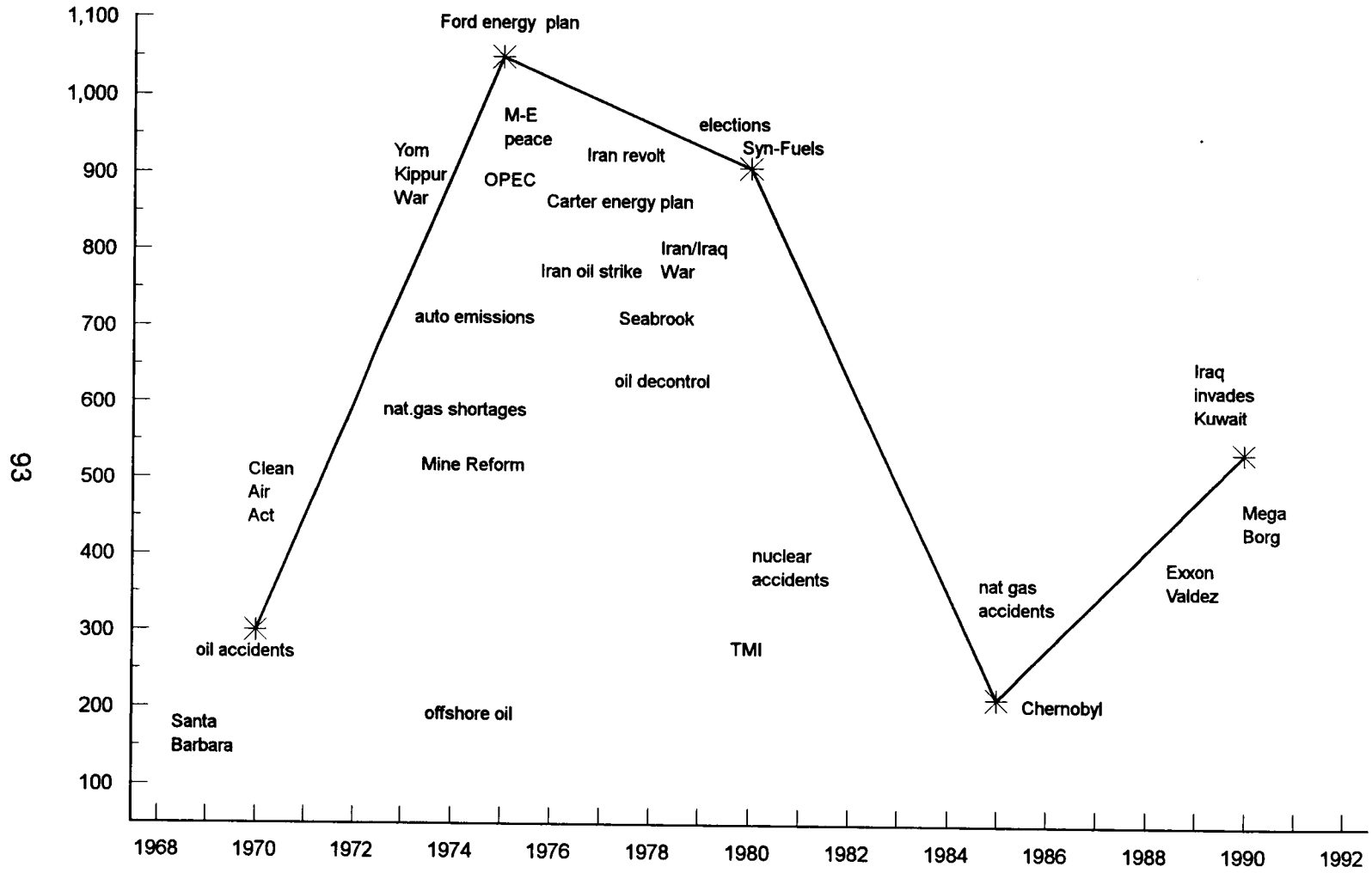

Figure 3.1 Number of Energy News Stories by Year and Major Energy *Triggering Events*

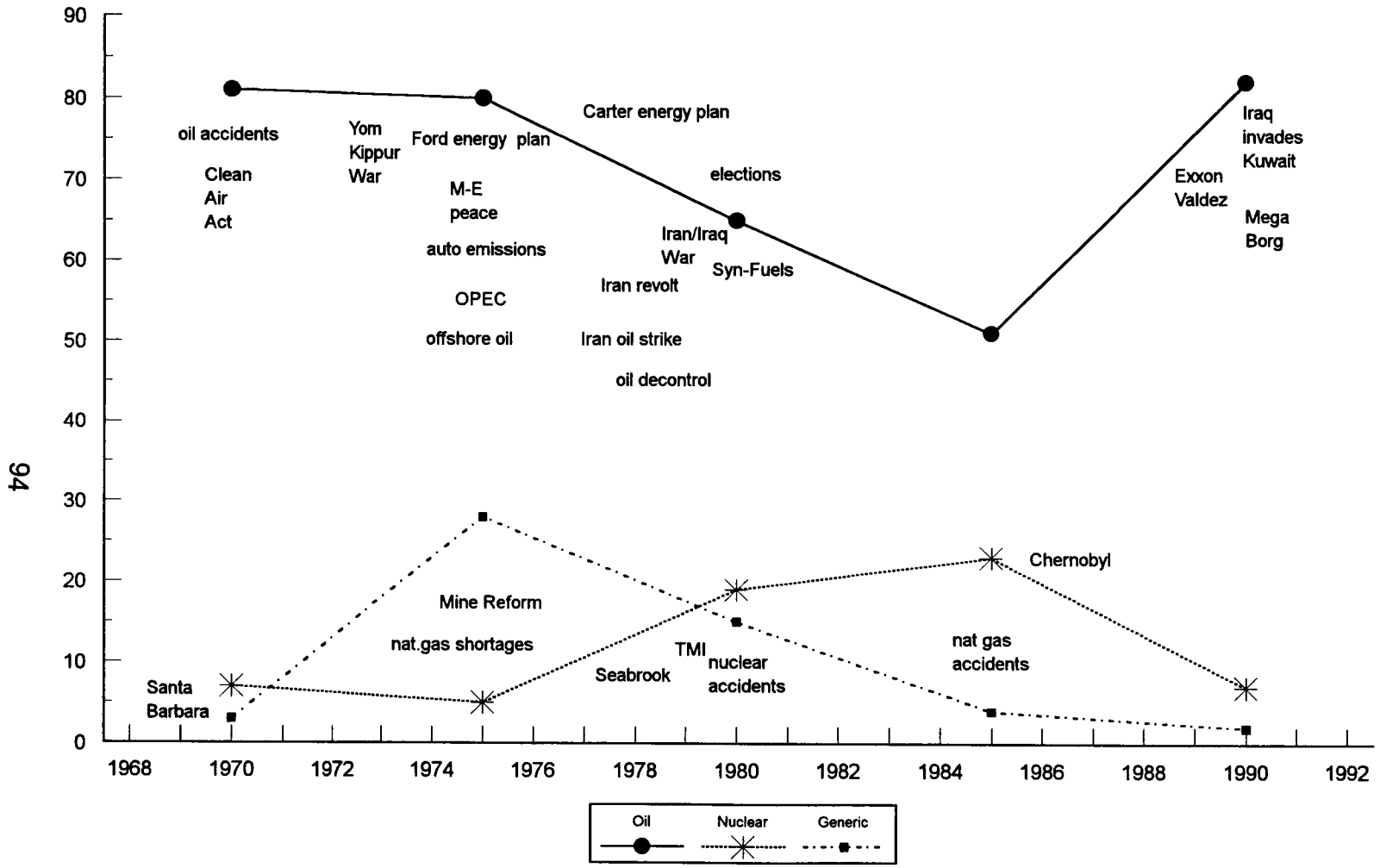

Figure 3.2 Oil, Nuclear, and Generic Stories as a Percentage of all Energy Stories in the Network News and Major Energy*Triggering Events*

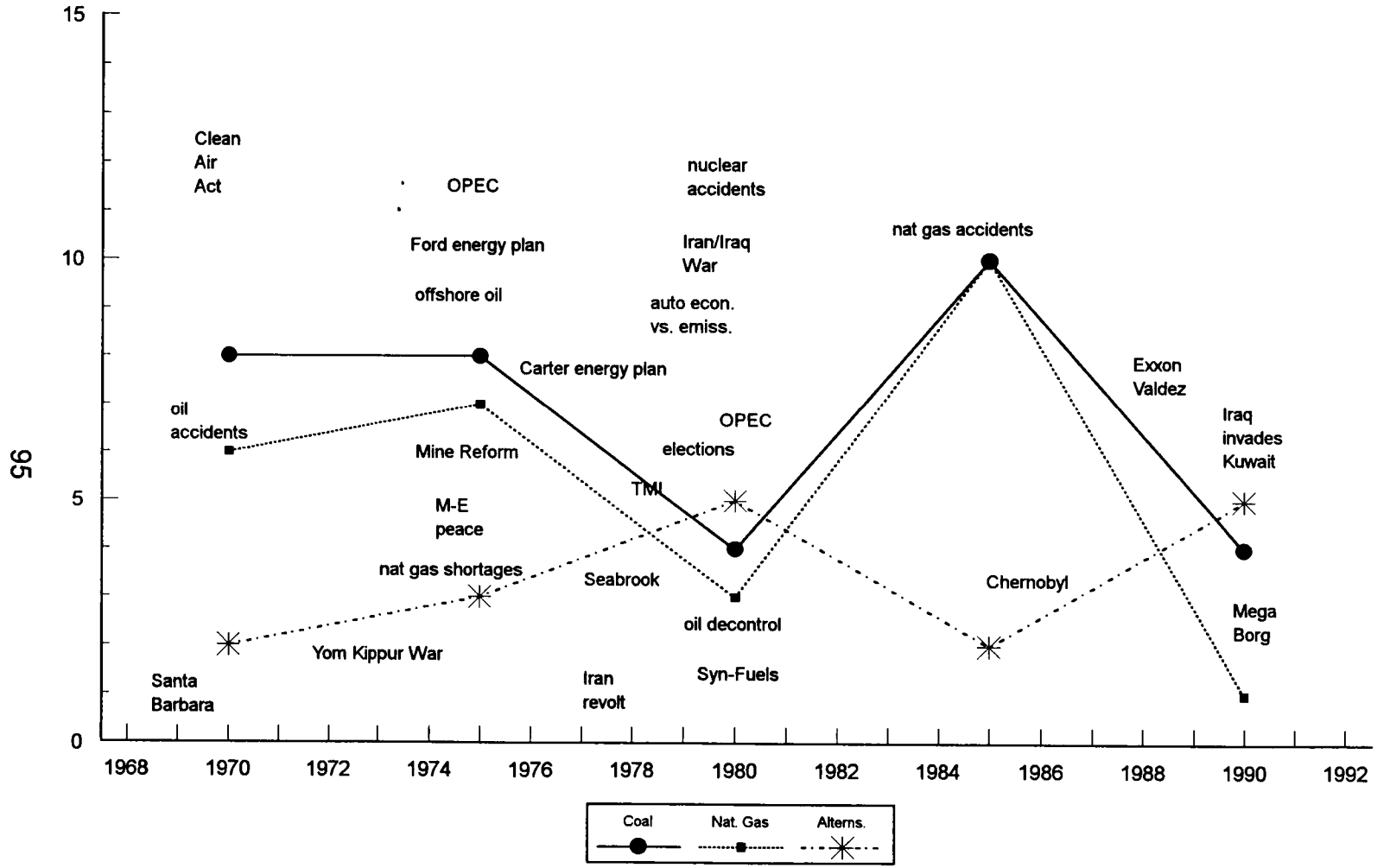

Figure 3.3 Coal, Natural Gas, and Alternative Stories as a Percentage of all Energy Stories and Major Energy *Triggering Events*

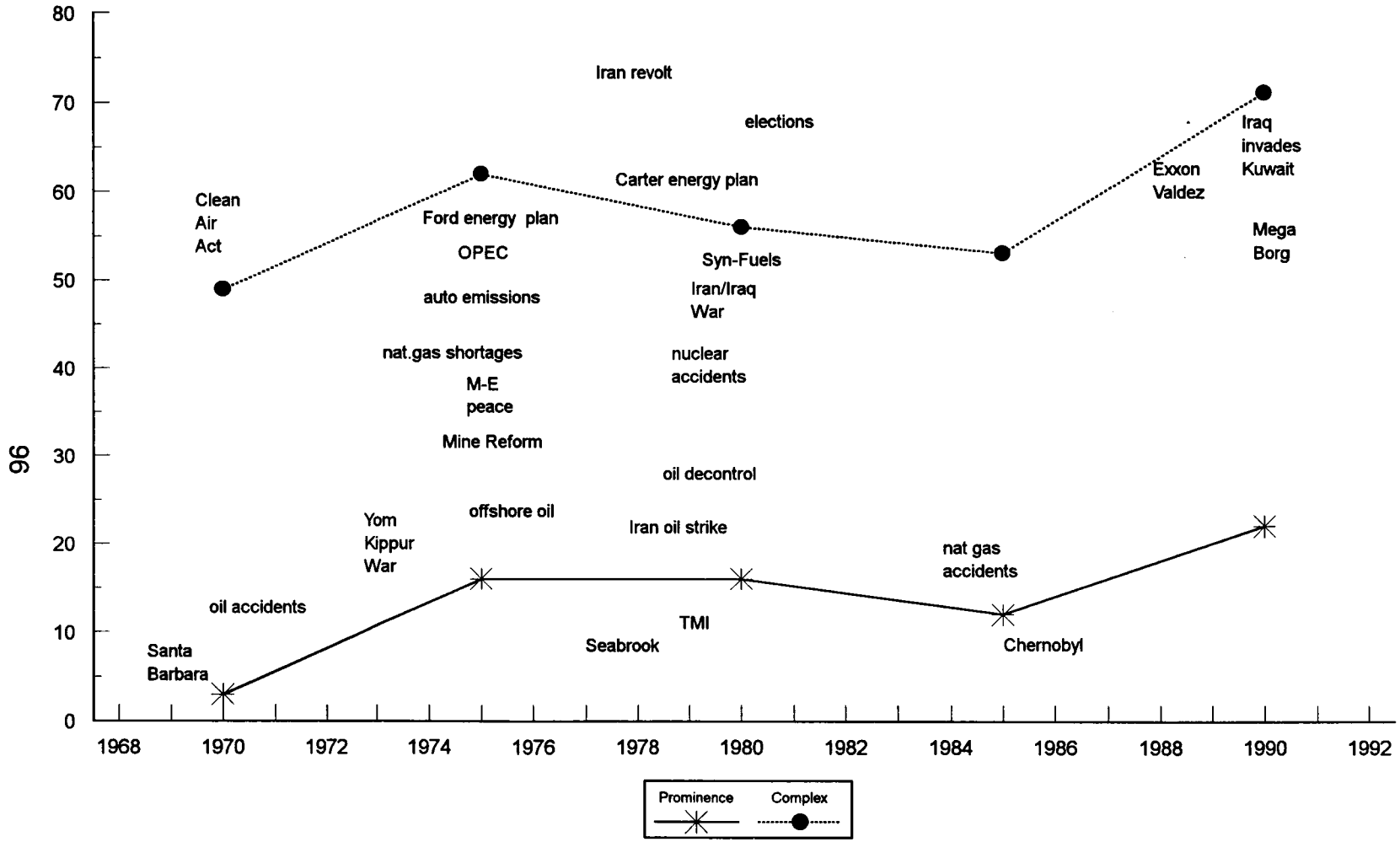

Figure 3.4 Prominent and Complex News Stories as a Percentage of all Energy Stories in the Network News and Major Energy *Triggering Events*

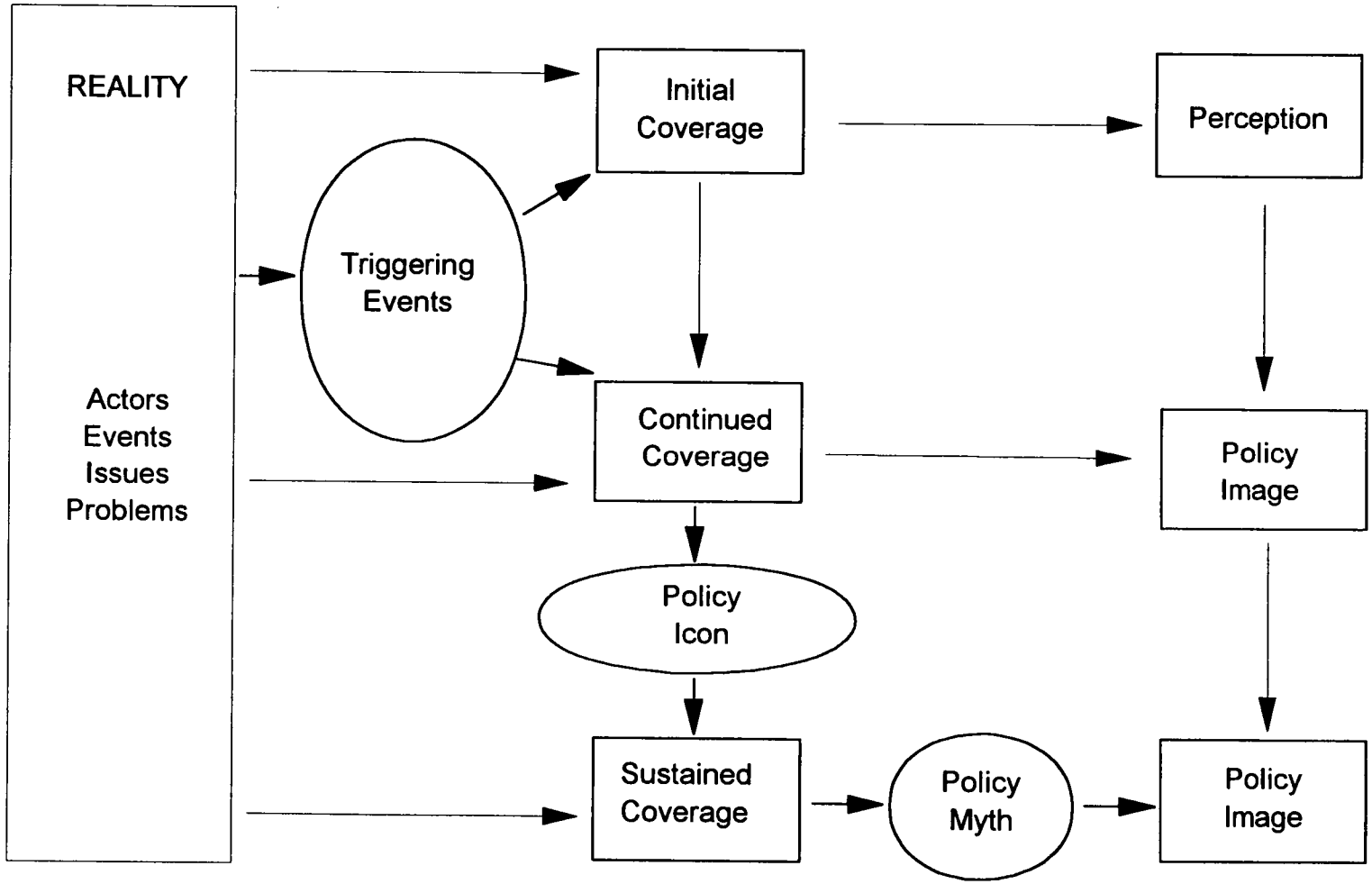

Figure 4.1 Modified Theoretical Framework of the Communication of Policy Images by the Network News

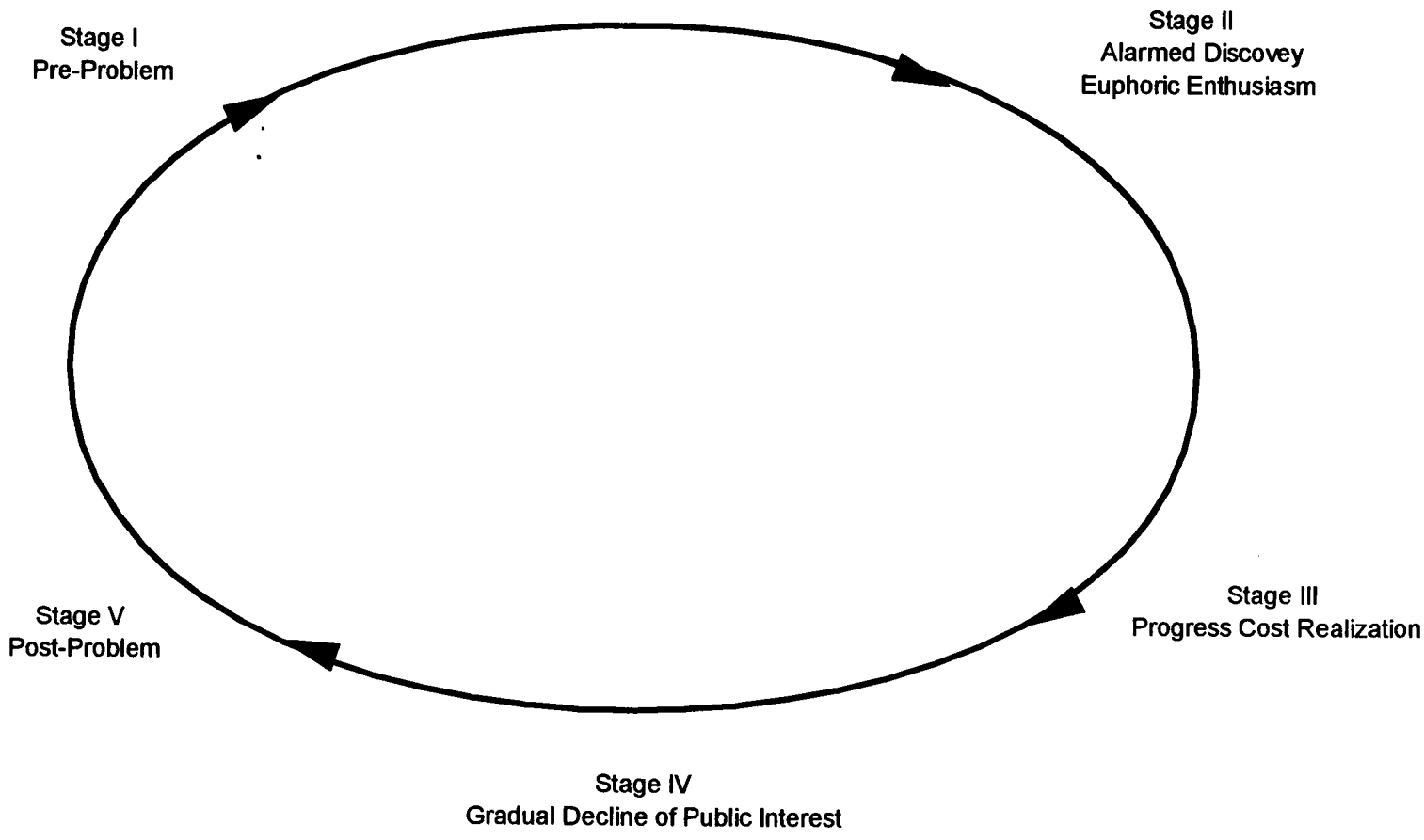

Figure 4.2 Downs Issue-Attention Cycle

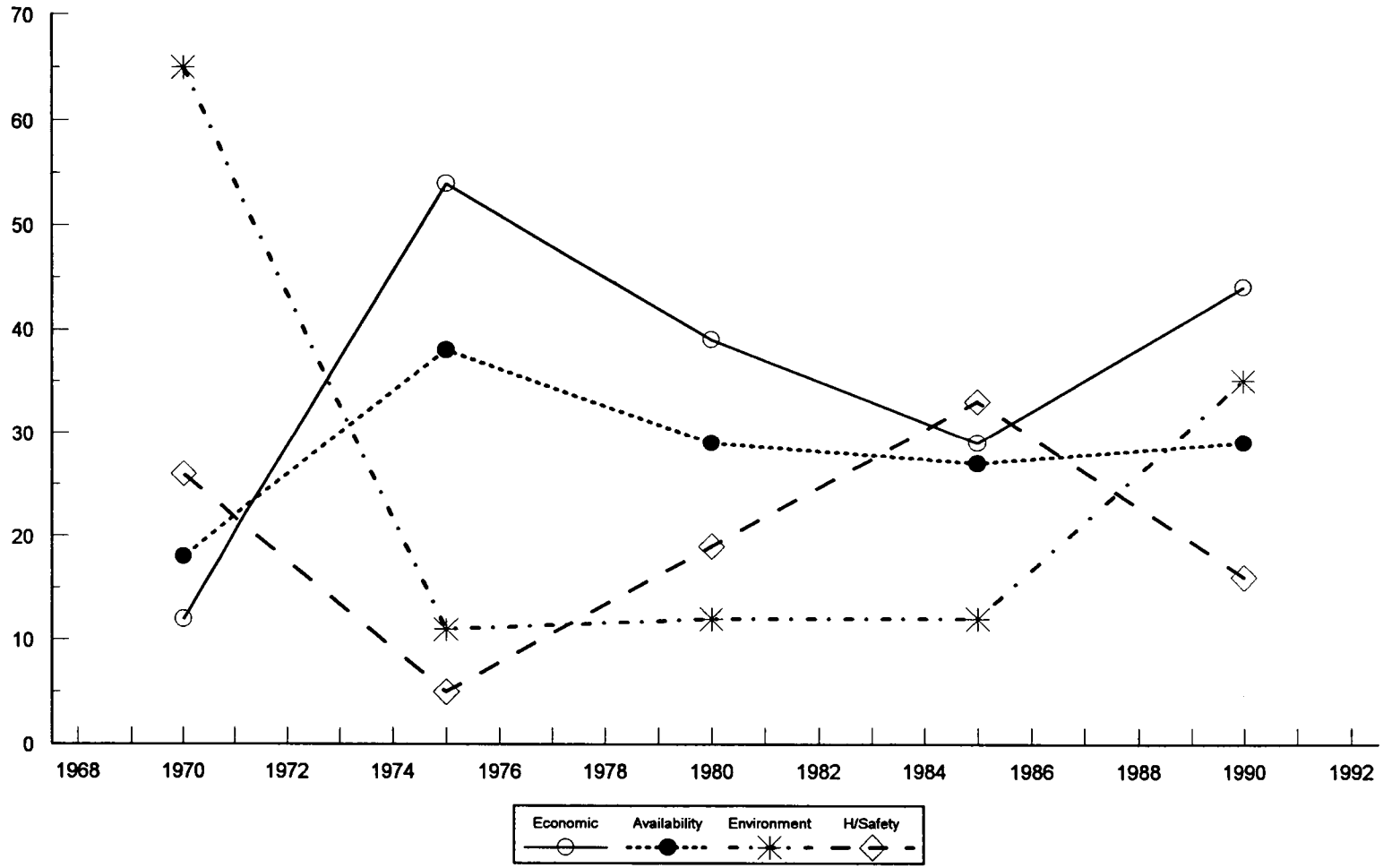

Figure 4.3 Percentage of News Stories that Mention Aspects of Energy in the Network News

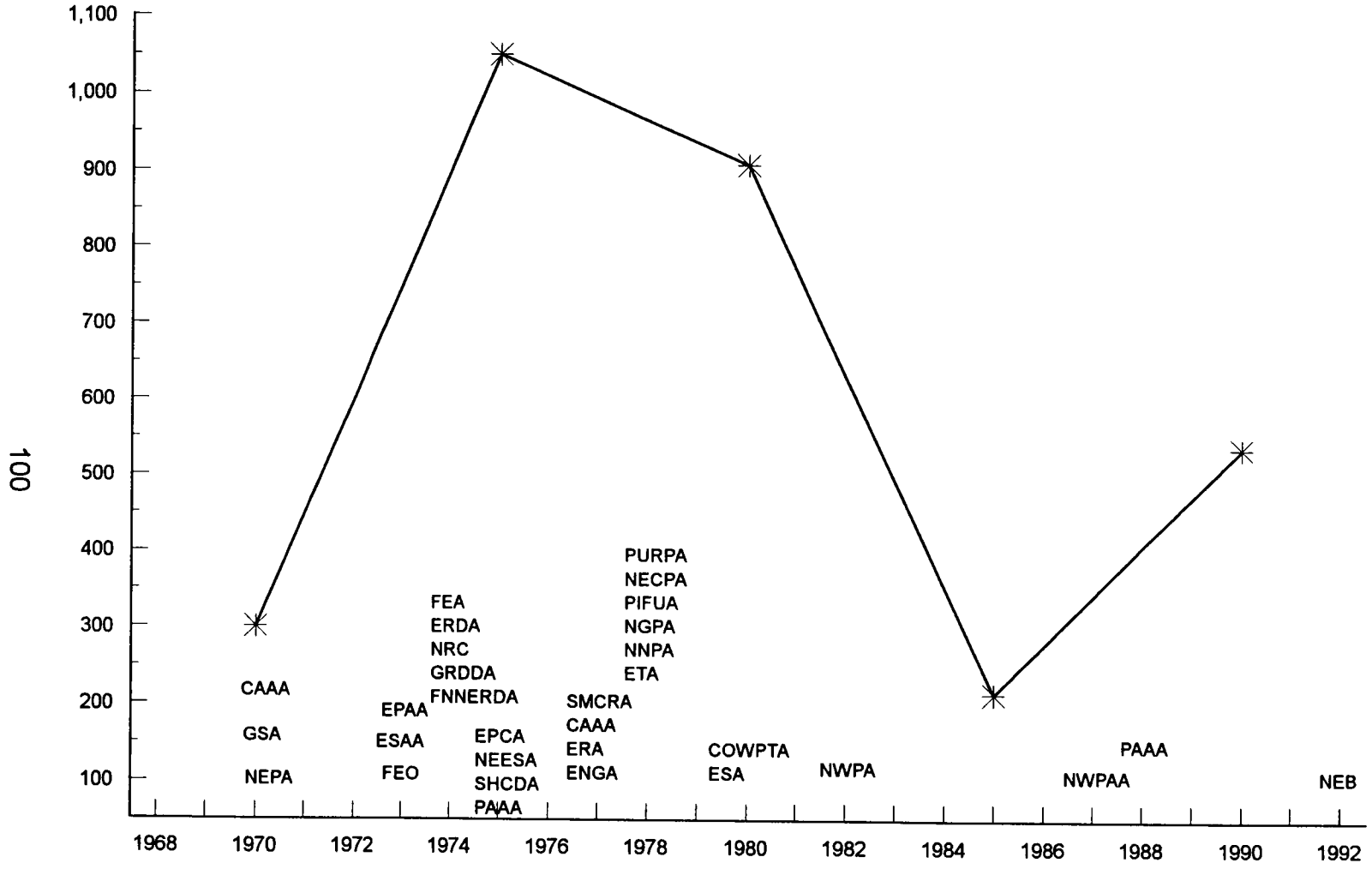

Figure 4.4 Number of Energy News Stories by Year and Major Energy Policies

Table 1.1 Chronology of Major Energy *Triggering Events*

1969
- Santa Barbara Oil Spill

1970
- Clean Air Act Amendments introduced, auto emissions debate
- Various offshore oil spills, explosions, & fires

1973
- Yom Kippur War - Arab oil embargo against U.S., Netherlands, and neutral countries which creates 1st energy crisis
- U.S. experiences natural gas shortages

1975
- Middle East peace negotiations, Israel relinquishing Abu Rudeis oil fields
- Surface Mining Control & Reclamation Act introduced
- President Ford proposes energy legislation; Energy Policy, & Conservation Act of 1975
- Natural gas shortages continue
- Automobile fuel economy versus auto emissions debate
- OPEC meetings
- Offshore oil leasing debate Federal versus State control

1977
- President Carter introduces National Energy Plan

1978
- Iranian oil workers strike, halt oil production in popular uprising to overthrow shah
- Seabrook, NH. nuclear power plant construction

1979
- Iranian revolution, oil supply to United States cut creating 2nd major energy crisis
- Oil pricing decontrol & windfall profits tax introduced
- Three Mile Island nuclear power plant accident

1980
- Synthetic Fuels Corporation (SFC) established
- OPEC meetings
- Iran/Iraq War
- U.S. Presidential campaign & election
- nuclear accidents

1985
- natural gas accidents

1986
- Chernobyl, Soviet Union, nuclear power plant accident

1989
- *Exxon Valdez* oil tanker accident spills 11 million gallons, Prince William Sound, AK

1990
- Iraq invades Kuwait, seizes oil fields
- various oil fires, explosions and spills [Mega Borg]

Table 2.1 Operational Definitions for Content Analysis of Energy News Stories

Variable Name	Variable Definition
Network	Television Network station broadcasting news: ABC, CBS, or NBC
Story Caption	Title of evening news story as it appears in the VUTNA, TNIA
Energy Reference 1-3	First, second, or third type of energy referred to in news story
Availability Reference	Story refers to energy availability, supply, or energy reserves
Economic Reference	Story refers to consumer or industry energy costs, taxes, or associated regulatory costs of energy. Pricing or market control references are included.
Technology Reference	Story refers to energy research and development innovations or applications of such
Health & Safety	Story refers to health or safety risks associated with working in an energy industry or general public health risks associated with the combustion, consumption, or transportation of energy
Environmental Reference	Story mentions pollution, degradation, or contamination of air, land, water, or ground as a result of energy accidents. The mention of a risk of such incidents are included.
Conflict Reference	Story mentions opposition to an energy source by an individual, group, or the public in the form of protests, demonstrations, boycotts, or lawsuits
Conservation Reference	Story mentions energy saving, energy efficiency, or conservation of energy
Transportation Reference	Story mentions the transportation of energy fuels or associated wastes
Federal Reference 1-3	First, second, third mention of the president, an official of the executive branch, the federal bureaucracy, the Congress, or the federal judiciary. Generic references to the federal government, studies or reports are also included.

Table 2.1 (Continued)

Variable Name	Variable Definition
State Government Reference 1-3	First, second, third mention of a governor, an official of the governor's office, state bureaucracy, the legislature, state judiciary, or state association. A generic reference to state government, study, or report are also included.
Local Government Reference 1	News story mentions an official, report, or association of a local government. A generic reference to local government, report, or study are also included.
Agency Reference 1-3	First, second, third mention of a federal agency official, report, or policy in news story.
Industry Reference	News story mentions a non-governmental, private organization, official, or report.
Labor Reference	News story mentions a private labor organization, official representative of labor organization, or report
Labor Relations Reference	News story mentions labor negotiations, labor mediators, a proposed labor strike or walkout, or contract negotiations.
Environmental Group Reference	News story mentions an environmental or conservation group, group spokespersons, or report.
Consumer Group Reference	News story mentions a consumer group, a group spokesperson, or report.
Citizen Reference	News story mentions or comments on statements made by individual citizens.
Expert Reference	News story mentions scientific, economic, or similarly qualified experts, including university researchers.
Farm Group Reference	News story mentions a private farm group, official representative, spokesperson, study, or report.
Complexity	News story is defined as simple, or non-complex if it is less than sixty seconds long. News stories one minute in duration or longer are defined as complex.
Editorial	News story is presented as an editorial or commentary.
Lead Story	News story leads the evening newscast as the first story reported.

Table 2.1 (Continued)

Variable Name	Variable Definition
Feature Story	News story is part of a special newscast segment or features a particular energy issue or incident (i.e., *American Agenda*)
Policy Reference	News story mentions, cites, or discusses a policy or act, a proposed policy or act, or debate of such.

Table 2.2 Coding Guide for Content Analysis of VUTNA Abstracts

Instructions:

Code ALL stories relating to **crude oil, refined oil products, coal, nuclear power, natural gas, alternative fuels, and generic energy** references in the Vanderbilt University Television News Archive-*Television News Index and Abstracts*. Systematically (day-by-day, network-by network) examine the *Abstracts* to identify energy stories for the time period January 1 through December 31 for the years: 1970, 1975, 1980, 1985, and 1990.

In order for a story to qualify as an energy story, it must **specifically** mention at least one of the energy types, mention energy in a generic sense, or mention energy policy. Once an energy story is located and identified, additional information such as the aspect(s) and source(s) of information for the story are to be collected and coded. Please note: **all** typing in electronic data base is to be done with **all capital letters** [CAPS LOCK]; please code the number of the energy type mentioned in the story in the **order** of mention.

Table 2.2 Coding Guide for Content Analysis of VUTNA Abstracts

PAGE [actual page number]

BDATE [broadcast date, mo/day/yr]

BEGIN [hour.min.sec time news story begins]

RUN [story length in min.secs]

NETWORK Record the first letter of network broadcasting story:
ABC, CBS, or NBC

CAPTION Record the actual news story title as it appears in the *TNIA*

ENERGY 1-3
Code up to different references to energy type mentioned in news story

8 - GENERIC ENERGY
story mentions a non-specific energy issue or problem, or energy policy

1 - CRUDE OIL/PETROLEUM
story mentions crude oil, petroleum, oil exploration, drilling, or refining; stories that mention **OPEC** are also included.

2 - REFINED OIL
story mentions a type of refined oil: gasoline, diesel fuel, kerosene, home heating oil, or jet fuel are included in the study. Stories that mention **auto emissions** are also included.

3 - COAL
story mentions industrial or utility coal use, coal emissions, safety, health, and related regulatory activities. Also included are stories that discuss coal transportation, fuel efficiency of coal, cost, and labor-management activities.

4 - NATURAL GAS
story mentions natural gas or propane drilling, exploration, usage, and any other availability issues. Pipeline construction, accidents, and regulatory actions are included, also.

5 - NUCLEAR POWER
story mentions siting, construction, operation, or maintenance of nuclear power plants. Licensing, permitting, or any other regulatory-related issues are included. In addition, stories that mention uranium mining or processing, transportation of nuclear fuel materials or waste, thermal pollution due to nuclear power, siting of waste facilities, or accidents are also coded.

6 - ALTERNATIVE FUELS
story mentions an alternative energy source or non-specific alternative fuel including: solar, geothermal, wind, wood, waste, waves, synthetic fuel, or electric ONLY when battery powered.

AVAIL REF
story mentions energy availability, supply, reserves, or production levels
0 NO
1 YES

ECONOMIC REF
story refers to the financial impacts of economic activities, consumer prices, industry prices, taxes, associated regulatory costs or benefits, or market controls of energy. Similarly energy company bribes or incentive pay to governments or candidates (foreign or domestic) are also included.
0 NO
1 YES

Table 2.2 Coding Guide (Continued)

TECH REF
story mentions technological advances, research or development innovations.
0 - NO
1 - YES

HEALTH/SAFETY REF
story refers to health or safety risks associated with working in the energy industry or general public health risks associated with the combustion, consumption, or transportation of energy.
0 - NO
1 - YES

ENVIRON REF
story references pollution, degradation, or contamination of air, land, or ground (i.e. oil spill, leaking tank, radiation leak, or thermal pollution). The **risk** of pollution is also included.
0 - NO
1 - YES

CONFLICT
story mentions opposition to an energy type in the form of protests, demonstrations, boycotts, or lawsuits by an individual, group, or the public.
0 - NO
1 - YES

CONSERV
story mentions energy saving, energy efficiency, or energy conservation.
0 - NO
1 - YES

TRANS
story mentions a mode of transporting energy fuels or wastes (e.g., common carrier, rail, shipping, oil or gas pipeline).
0 - NO
1 - YES

FEDERAL 1-3
the story mentions the federal government
0 -NO
1 - the President
2 - the executive office of the Pres.(white house chief of staff, OMB, council of economic advisors, presidential spokesperson)
3 - bureaucracy (federal agency, bureau, or department)
4 - legislative branch: Congress (U.S. Senate or U.S. House of Representatives) or the General Acctng. Office (GAO)
5 - judicial branch (federal court, Supreme Court)
8 - generic federal reference (non-specific to individual or branch)

STATE 1-3
news story mentions state government
0 -NO
1 - governor or governor's office
2 - bureaucracy (state agency, bureau, or department)
3 - legislative branch (state House &/or Senate)
4 - judicial branch (state court, Supreme Court)
5 - state association (i.e., Governor's Association, Council of State Governments)
8 - generic state reference (non-specific to individual or branch)

LOCAL
news story mentions a local government official, local government association, or a generic, local government reference
0 - NO
1 - YES

Table 2.2 Coding Guide (Continued)

AGENCY 1-3
news story references, cites, or discusses a FEDERAL agency, official, report, or policy

00 - NO

01 - Energy Department & Regulatory Agencies (DOE, Atomic Energy Comm., NRC, Fed. Energy Admin., ERDA)

02 - EPA/Env. Protection Agency reference

03 - Transportation (includes DOT, U.S. Coast Guard, FAA, Fed. Highway Admin., Fed. RR Admin., Nat. Highway Traffic Safety Admin., Urban Mass Trans. Admin., St. Lawrence Seaway Dev. Corp., and Maritime Admin.)

04 - Labor (includes OSHA, Office of Labor Management Standards, Mine Safety & Health Administration)

05 - Interior (includes Nat. Park Service; U.S. Fish & Wildlife; Bur. of Indian Affairs; Bureau of Land Management; Office of Sur. Mining, Reclamation & Enforcement; Minerals Management Service; Geological Survey; Bureau of Mines; Bureau of Reclamation)

06 - Defense

07 - GAO (General Accounting Office)

08 - Health, Education, Human Service and Welfare Agencies (HEW, HHS, & Public Health Service)

09 - Justice (includes FBI)

10 - OMB (Office of Management & Budget)

11 - State Department

12 - Other

INDUST
story mentions a non-governmental, private organization, official, or report
0 - NO
1 - YES

LABOR
story mentions private labor organizations or labor representatives
0 - NO
1 - YES

LRELATIONS
story mentions labor negotiations, role of labor mediators, a proposed strike, a strike, or contract talks
0 - NO
1 - YES

ENVGROUP
story mentions an environmental or conservation group, group spokesperson, or report
0 - NO
1 - YES

CONSUMER
story mentions a consumer group, a consumer group spokesperson, or report
0 - NO
1 - YES

CITIZEN
story mentions an individual citizen's comments or statements
0 - NO
1 - YES

EXPERT
story mentions a scientific, economic, or similarly qualified expert (includes university researchers) or report
0 - NO
1 - YES

FARM
story mentions private farm group, farm group representative or spokesperson, or report
0 - NO
1 - YES

Table 2.2 Coding Guide (Continued)

COMPLEXITY
story is complex if 60 seconds or longer in duration
0 - NO
1 - YES

EDITORIAL
news story is a special commentary or an editorial
0 - NO
1 - YES

LEAD
news story leads the newscast or is the first story reported in newscast
0 - NO
1 - YES

FEATURE
news story is a special newscast segment or feature on energy in general, an individual energy type, or energy event
0 - NO
1 - YES

POLICY
news story mentions a Policy or Act or a proposed Policy or Act
0 - NO
1 - YES

COMMENT
Energy type must be noted in this space if NOT listed in caption. Use this space also to note *substory* when energy story is embedded in an umbrella story which is comprised of several substories.

CODER
each coder is identified by a 3 letter code to be typed in this space

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Table 3.1

Percent and Frequency of Energy Stories in the Network Evening News By Year

Year	Percent Of Total	Number
1970	10	300
1975	35	1050
1980	30	908
1985	7	214
1990	18	536
TOTAL	**100**	**3008**

Table 3.2

Percent and Frequency of Energy Stories that Mention Energy Type in the Network Evening News

Energy Type	Percent of Total	Number
Oil	74	2218
Generic Energy	15	462
Nuclear	11	336
Coal	6	192
Natural Gas	5	149
Alternatives	4	110

Table 3.3

Percentage of Network Evening News Stories that Mention Energy By Type and Year

Energy Type	Total (N=3008)	1970 (N=300)	1975 (N=1050)	1980 (N=908)	1985 (N=214)	1990 (N=536)
Oil (N=2218)	74	81	80	65	51	82
Generic (N=462)	15	3	28	15	4	2
Nuclear (N=336)	11	7	5	19	23	7
Coal (N=192)	6	8	8	4	10	4
Natural Gas (N=149)	5	6	7	3	10	1
Alternatives (N=110)	4	2	3	5	2	5

Table 3.4

Prominent[1] and Complex[2] News Stories as a Percentage of All Energy Stories in the Network Evening News

Stories	Total (N=3008)	1970 (N=300)	1975 (N=1050)	1980 (N=908)	1985 (N=214)	1990 (N=536)
Prominent (N=468)	16	3	16	16	12	22
Complex (N=1796)	60	49	62	56	53	71

[1] Prominence is the sum of (1) the number of lead stories, (2) the number of stories presented as editorials, and (3) the number of feature stories. [2] Story length is defined as *complex* if 60 seconds or longer.

Table 3.5

Stories by Network as a Percentage of All Energy Stories in the Evening News[1]

Network	1970 % (N)	1975 % (N)	1980 % (N)	1985 % (N)	1990 % (N)	Total % (N)
ABC	24 (71)	35 (366)	30 (270)	25 (53)	36 (193)	32 (953)
CBS	43 (130)	34 (363)	40 (366)	42 (91)	32 (169)	37 (1119)
NBC	33 (99)	31 (321)	30 (272)	33 (70)	32 (174)	31 (936)
Total	100 (300)	100 (1050)	100 (908)	100 (214)	100 (536)	100 (3008)

[1] $X^2 = 31.79$, with 8 df, significant at the .001 level.

Table 3.6

Proportion and Number of Energy Stories in the Evening News Broadcast by each Network

Year	ABC[1] % (N)	CBS[2] % (N)	NBC[3] % (N)	Total % (N)
1970	7% (71)	12% (130)	11% (99)	10% (300)
1975	38% (366)	32% (363)	34% (321)	35% (1050)
1980	28% (270)	33% (366)	29% (272)	30% (908)
1985	6%(53)	8% (91)	7% (70)	7% (214)
1990	20% (193)	15% (169)	19% (174)	18% (536)
Total	100% (953)	100% (1119)	100% (936)	100% (3008)

[1] ABC's X^2 =16.89, with 4 df, significant at the .001 level.
[2] CBS's X^2 =13.59, with 4 df, significant at the .01 level.
[3] NBC's X^2 =1.31, with 4 df, not significant.

Table 3.7

Percentage of Energy Stories that Mention Aspect in the Network Evening News Over Time

Aspect	Total (N=3008)	1970 (N=300)	1975 (N=1050)	1980 (N=908)	1985 (N=214)	1990 (N=536)
Economic	42	12	54	39	29	44
Availability	31	18	38	29	27	29
Policy	30	23	44	24	17	25
Environment	21	65	11	12	12	35
Health & Safety	16	26	5	19	33	16
Conflict/Labor Relations	8	15	6	6	25	7
Conservation	8	2	15	5	1	3
Technology	3	2	2	4	2	6

Table 3.8

Percentage of Energy Stories that Mention Aspect by Energy Type, in the Network Evening News

Aspect	Oil (N=2218)	Coal (N=192)	Natural Gas (N=149)	Nuclear (N=336)	Alternatives (N=110)
Economic	50	30	33	14	32
Availability	34	30	45	32	51
Policy	30	34	28	24	28
Environment	20	26	21	31	19
Health & Safety	10	19	28	48	3
Conservation	9	5	8	1	13
Conflict/Labor Rels.	5	35	13	16	13
Technology	2	2	5	5	37

Table 4.1 Chronology Of National Energy Policies[1]

1970	Clean Air Act Amendments of 1970 PL 91-604
	Geothermal Steam Act of 1970 PL 91-581
	National Environmental Policy Act
1973	Pres Nixon proposed "Project Independence"
	Pres Nixon created Federal Energy Office within White House Staff
	Economic Stabilization Act Amendments, PL 93-28, S398
	Emergency Petroleum Allocation Act of 1973 (EPPA) PL 93-159,S1570
1974	Pres Nixon created Federal Energy Administration (FEA)
	Energy Reorganization Act
	Pres Nixon used "emergency powers" to impose mandatory allocations for selected fossil fuels
	·ossil fuel price guidelines established
	Nuclear Regulatory Commission (NRC) established, AEC dismantled
	Geothermal Research, Development and Demonstration Act, PL 93-410 (Sept)
	Federal Non-Nuclear Energy Research and Development Act, PL93-577
1975	Energy Policy and Conservation Act PL 94-163, S622
	Price-Anderson Act renewed
	Solar Heating and Cooling Demonstration Act
	National Energy Extension Service Act PL 98-39, Title V
1976	FPC raised national ceiling price on natural gas by almost half
1977	Surface Mining Control and Reclamation Act of 1977 (SMCRA)
	Clean Air Act Amendments of 1977 PL 95-95
	Pesident Carter bans plutonium reprocessing
	Energy Reorganization Act
	Emergency Natural Gas Act
1978	Public Utility Regulatory Policies Act of 1978, PL 95-617, HR4018
	National Energy Conservation Policy Act PL 95-619, HR5037
	Powerplant and Industrial Fuel Use Act PL 95-620, HR5146
	Natural Gas Policy Act PL 95-621, HR5289
	Nuclear Non-Proliferation Act
	Energy Tax Act, PL 95-618
1980	Crude Oil Windfall Profits Tax Act PL 96-223, HR3919
	Energy Security Act, PL 96-294, S932
1982	Nuclear Waste Policy Act (NWPA) PL 97-425
1987	Nuclear Waste Policy Act Amendments of 1987, PL 100-203
	Global Climate Protection Act of 1987 PL 100-204
1988	Price-Anderson Act Amendments
1992	National Energy Bill

[1] Sources of information for table: Davis, 1993; Smith, 1992; and Rosenbaum, 1987.

VITA

Patra Bonham Rule was born in Louisville, Kentucky and graduated from Westport Road High School in 1973. She studied Sociology at Milligan College and East Tennessee State University from 1973 to 1975. She transferred to the University of Tennessee, Knoxville in the Fall of 1975 and graduated with a Bachelor of Arts degree in 1979 with a Sociology major. Ms. Rule took additional courses for secondary school certification and was a substitute teacher in Knox County schools for several years.

She returned to the University of Tennessee in the Fall of 1980 and graduated with a Masters of Public Administration in August 1982. Ms. Rule moved to Lexington, Kentucky and in May 1983 accepted an administrative staff position with the University of Kentucky College of Medicine. Ms. Rule returned to Knoxville during the Summer of 1985. She entered the University of Tennessee's Doctoral program in Political Science in 1987. Ms. Rule worked for two years in the Office of Institutional Research at the University of Tennessee and following that accepted a Teaching Assistantship in the Department of Political Science. In August 1994 Ms. Rule received the Doctor of Philosophy degree with a major in Political Science from the University of Tennessee, Knoxville.