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FRAMING ANALYSIS OF CLIMATE CHANGE IN THE *NEW YORK TIMES* AND
THE GUARDIAN

A Thesis

Presented to

the Faculty of Arts and Humanities

University of Denver

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

by

Kylah Jae Hedding

June 2011

Advisor: Derigan Silver, Ph.D.

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Author: Kylah Jae Hedding

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Chapter One: Introduction

On July 19, 2006, the U.S. House Energy and Commerce Subcommittee on Oversight and Investigations held a hearing entitled “Questions Surrounding the ‘Hockey Stick’ Temperature Studies: Implications for Climate Change Assessments.” The hearing was held to review research into anthropogenic climate change, the term used to refer to changes to the earth’s atmosphere caused by human activity. During the hearing, Chairman Joe Barton stated, “My problem is that everybody seems to think that [anthropogenic climate change] is automatically a given and we shouldn’t even debate the possibility of it or we probably shouldn’t debate the causes of it and I think that’s wrong” (Harris, 2006). A National Public Radio story on Barton’s comments focused on the controversy surrounding climate change, also known as global warming, giving equal weight to supporters and skeptics, a finding that is perhaps not surprising given the nature of the hearing and Barton’s statement. Three months before the hearing, however, Al Gore’s *An Inconvenient Truth*, a film which clearly argued that anthropogenic climate change was a scientific certainty, was released into theatres and became a virtual overnight sensation. In a review of the film, *New York Times* film critic A. O. Scott declared “the idea that worrying about the effect of carbon-dioxide emissions on the world’s climate makes you some kind of liberal kook is as tired as the image of Mr. Gore as a stiff, humorless speaker, someone to make fun of rather than take seriously” (2006),

a statement which clearly indicated there was no real controversy. In addition, the following year, the International Panel on Climate Change (IPCC) released its Fourth Assessment Report, its most definitive statement to date that anthropogenic climate change exists (Schmeier, 2007).

While the U.S. media's attempt to portray the controversy might seem to simply be an issue of trying to avoid accusations of bias, how the media present the issue has a great deal of influence over how the American public views anthropogenic climate change. According to Nelkin (1995), the U.S. public frequently understands science "less through direct experience or past education than through the filter of journalistic language and imagery" (pp. 2-3). Boykoff (2008) suggests this applies to climate change as well, stating that where mainstream U.S. news media "have the potential to effectively communicate anthropogenic climate science, as well as the potential to misrepresent, misunderstand, distort and misinform to varying degrees the climate science they cover"(p. 3). These statements are especially troubling in the face of a study of U.S. television news coverage of climate change from 1996-2004, in which Boykoff (2008) found through quantitative content analysis "that 70% of U.S. television news segments have provided 'balanced' coverage regarding anthropogenic contributions to climate change vis-à-vis natural radiative forcing, and there has been a significant difference between this television coverage and scientific consensus regarding anthropogenic climate change from 1996 through 2004" (p.1). While this might not be surprising given American journalistic norms that focus on balance, it is striking given that a 2004 study of close to 1,000 scientific, peer-reviewed papers on climate change found 75% accepted

the existence of anthropogenic climate change, containing either explicit endorsements, evaluations of the impact of climate change, or mitigation thesis, while 25% took no position and dealt with methods or paleoclimate analysis. Not one paper explicitly argued that anthropogenic climate change did not exist (Oreskes, 2004). In addition, the IPCC's Third Assessment Report in 2001 concluded that "most of the warming observed over the last 50 years is attributable to human activities" (Houghton, et al., 2001, p.10). Thus, the discrepancy between media content and academic findings is pronounced and important to study given Boykoff and Nelkin's findings that the public depend on media for information and understanding about scientific matters in general, and climate change in particular.

This thesis applied framing research to the issue of climate change. The importance of frames in news stories has led to extensive framing analysis studies in the United States, a few of which have been focused on climate change (e.g. Boykoff, 2007, Boykoff and Boykoff, 2004, 2007; Nisbet, 2009). This thesis, however, will add to this literature by conducting a cross-national comparison of climate change based on two print newspapers, one from the United States, the *New York Times*, and one from the United Kingdom, the *Guardian*. The *New York Times* and the *Guardian* will be analyzed because of their status as the newspaper of record in their respective countries, and the inclusion of both newspapers in numerous research projects as a representative of their respective media systems. By comparing the *New York Times* and the *Guardian* this thesis will examine the differences in coverage between two newspapers from countries with simultaneously similar and dissimilar media systems. Thus, from a theoretical

perspective, this thesis adds to the literature by exploring the framing of climate change as well as examining cross-national coverage. In addition, by examining coverage of climate change from January 1, 2007 through December 31, 2009, a time period which includes two U.S. presidential administrations, one Republican and one Democrat, but only one British administration, the thesis provides a comparison of presidential administration coverage. Past cross-national comparative research, as discussed below, has focused largely on war coverage, so the focus on climate change will allow insight into media coverage of a complicated scientific issue on which there is a large international consensus.

The thesis begins by reviewing literature related to the similarities and differences between the media systems of the United States and the United Kingdom, focusing on the journalistic norms that have developed in the United States. Next, it outlines framing analysis theories, as well as previous comparative framing studies of U.S. and international media, much of which is related to the Iraq War, as well as the relatively few that have examined climate change. The thesis then outlines the research methods and results, followed by a discussion of the results and conclusions that can be drawn from the research.

Literature Review

This literature review will first examine the media systems of the United States and England and their similarities and differences. It is important to understand the development of Western media systems, particularly those in the United States and Britain, which have led to different journalistic norms that contribute to the frames used

by the U.S. and British media. This will be followed by an overview of framing analysis theories, including studies in the United States that look at the framing of scientific issues in general and climate change in particular. The literature review will end with an examination of previous literature related to comparative studies of the U.S. and international media, specifically studies that include comparative analysis of the U.S. and British media.

Western Media Systems

Scholars have attributed the discrepancy between media content and academic or scientific findings related to climate change to the existence of professionalized journalistic standard in the United States, which have led to important news values such as objectivity, fairness, accuracy and an emphasis on conflict (Starr, 2004). This section of the literature review begins with a general examination the three media models outlined by Hallin and Giles (2005), and end with a comparison of the U.S. and British media systems, specifically as they relate to the *New York Times* and the *Guardian*.

Hallin and Giles (2005) and Hallin and Mancini (2004) outlined three models of media systems in the Western world. These media systems have been influenced by the history and structure of the society in which they developed, including the creation and evolution of mass circulation, the state's involvement in the media system, especially regarding content, political parallelism (the influence a political party has on media outlets), and the understanding of journalistic professionalism. Hallin and Giles (2005) wrote that each system has its own organizational norms and standards which are specific to that system and influenced by the above factors. These three systems are the liberal

systems, exemplified by media in the United States and England, the polarized pluralists systems, which exists in countries such as Italy and France, and the democratic corporatist systems, located in societies such as Germany and Denmark.

Liberal systems are characterized by early commercialization of the press, limited (as compared to other models) state intervention, low political parallelism, and a strong sense of professionalism among journalists. According to Hallin and Mancini (2004), the development of mass circulation newspapers during the late nineteenth and early twentieth century in liberal media systems have led to a view within these systems of media, especially newspapers, as commercial enterprises. The development of a commercialized press meant that newspapers and other media outlets were more geared to making money than to supporting a political cause. Consequently, this led to a system in which the government or political parties have less influence on media content. Liberal systems also view journalism as a profession, which Hallin and Giles (2005) defined by “the development of a distinct set of values and standards of practice, separate from those of other standards of social life, the degree of autonomy that journalists exercise in the managing news operations, and the degree to which journalists see themselves as the trustees of the “public good” rather than particular interests” (p. 6).

In contrast, polarized pluralists systems are characterized by an interventionist government with a press that is largely influenced by literature and politics, with a high degree of political parallelism. In these systems, while journalists are considered members of the “elite”, there is little sense of professionalism as it is understood in liberal systems. Hallin and Mancini (2004) outlined the development of polarized pluralist

systems during the second half of the twentieth century in Southern European countries that generally made the transition to democracy later. This late development of democracy led to a system in which media are intimately involved in politics and political conflicts. Polarized pluralist newspapers tend to have smaller and more “elite” readerships than other systems, and journalism is viewed as an “elite” profession, with journalists much more likely to have advanced degrees than in other systems. Thus, journalism as a profession as it’s understood in the mass market media of the liberal system never developed in polarized pluralist systems.

Democratic corporatist systems feature both a commercial and political press. They are characterized by a strong press with many freedoms within an interventionist government. The idea that the media represents the country and has a strong social responsibility is central to democratic corporatist systems. According to Hallin and Mancini (2004), the Democratic Corporatist media systems developed largely in Northern and Central Europe, where the printing press was first invented and where literacy remained the purview of the upper classes for a longer period of time. Many of these countries have a large welfare state, and state intervention in economic and social issues and institutions is standard.

Hallin and Giles (2005) acknowledged a convergence of these three systems, which they attribute to the growing influence of the liberal model, the increasing “secularization” of European society and the move in Europe towards a more commercialized media. However, even among media systems within the same model, many differences exist. This is especially true for media systems within the liberal model

(Hallin and Mancini, 2004). For example, the British media system is stronger than the U.S. media system in terms of state intervention into content, public service broadcasting, and political parallelism (Hallin and Mancini, 2004). In fact, Hallin and Mancini (2004) argued the British system was not truly liberal and could be located somewhere between the liberal and Democratic Corporatist models. The heightened political parallelism in the British media is particularly important to this study. Although nearly all British newspapers are financially independent from political parties—a function of the liberal system—most British newspapers can be identified by the unquestionable political leanings of their news content (Fridriksson, 2004, as cited in Fahmy and Kim, 2008). It would follow then, that British media outlets would be more likely to identify with a certain political perspective, while U.S. media outlets would be more likely to remain “neutral” and present all sides of an issue. Schudson (2001) also cited Britain as “a kind of half-way house between American professionalism and continental traditions of party-governed journalism with high literary aspirations” (p. 167).

Journalistic Norms and Cultures

Many of the differences between U.S. and British media arise from the development of journalistic norms in the United States. When discussing differences in climate change coverage, it is especially important to understand the development of the journalistic norm of balance. Boykoff and Boykoff (2007) outlined first-order and second-order journalistic norms used in news production, defining first-order journalistic norms as “significant and baseline influences on both the selection of what is news and

the content of new stories” (p. 1192). These norms significantly influence not only what is considered news, but also how news items are discussed in the media.

First-order journalistic norms are personalization, dramatization, and novelty. Personalization refers to the tendency to focus on the human interest side of a story in order to make it more interesting to the public. Applying personalization to a news story often leads journalists to focus more on an individual’s trials and tribulations rather than examining the larger political, economic or social questions (Bennett, 2002). Regarding the intersection of science and politics, the focus often becomes the strategic struggles between the main spokespersons, scientists, politicians, etc., instead of a thoughtful examination of scientific findings or public policies (Boykoff and Boykoff, 2007). As a norm, dramatization leads to news stories that emphasize “crisis over continuity, the present over the past or the future, and conflicts” and “downplay complex policy information, the workings of government institutions, and the bases of power behind the central characters” (Bennett, 2002, p. 46). As with personalization, this norm leads journalists to ignore thorough analysis of an issue, focusing instead on periodic events as they occur. Novelty refers to the focus on stories that are new and exciting (Stocking and Leonard, 1990). Stocking and Leonard (1990), point out that this focus on novelty “allows persistent, and growing, environmental problems to slide out of sight if there is nothing ‘new’ to report” (p. 40). According to Boykoff and Boykoff (2007), “dramatic events involving international personalities favor episodic (rather than thematic) framing” (p. 1196) Iyengar (1991) defined episodic framing as news frames that focus on events, while thematic framing places these events into context. According to Iyengar (1991),

episodic frames in news coverage, lead to a shallower understanding of the issues by the public, which in turn leads to a lack of accountability among public officials.

Second-order journalistic norms arise from the adherence of journalists to the first-order norms. Second-order journalistic norms are authority-order and balance. The first-order journalistic norms of personalization, dramatization, and novelty inform the two second-order journalistic norms (Boykoff and Boykoff, 2007). The first, authority-order, addresses the dependence of journalists on authority figures for information. This often leads to news coverage that confirms the status quo. Especially regarding complex issues like climate change, there is significant acceptance among the public of views from the government, scientists and other authorities. This public trust in authority figures can also affect policy decisions (Boykoff and Boykoff, 2007). However, when authorities do not agree, such as has happened in the United States regarding climate change views between governmental authorities and scientific authorities, especially during the Bush Administration, the idea of authority-order can become confused. According to Boykoff and Boykoff (2007), this affects the first-order norms of personalization and dramatization, as well as the second-order norm balance.

Balance indicates journalists “present the views of legitimate spokespersons of the conflicting sides in any significant dispute, and provide both sides with roughly equal attention” (Entman, 1989, p.30). Schudson (2001) argues that the norm of objectivity and balance developed more fervently in the U.S. as opposed to Europe because of the differing sociological conditions, such as the rise of public relations practitioners, the

Progressive movement and rise of a civil services tradition, and the view of journalism as a literary rather than professional ideal.

As noted above, the balance norm is especially important when discussing the issue of coverage of climate change. Boykoff and Boykoff (2004) found that over a 15 year period, 52.7% of articles in the U.S. “prestige press” featured balanced coverage of climate change, in the sense that equal weight was given to climate change supporters and climate change skeptics. There were statistical differences between the news coverage and the IPCC discourse from 1990 to 2002. According to Boykoff, “through adherence to the journalistic norm of ‘balanced reporting’, television news coverage of anthropogenic climate change actually perpetrates an informational bias by significantly diverging from the consensus view in climate science that human activities contribute to climate change” (2008, p.3). Boykoff and Boykoff (2007) argue that taken together, these journalistic norms lead to episodic, rather than thematic framing of the anthropogenic climate change, which, as stated above, can lead to a shallower understanding of anthropogenic climate change. As noted, this ‘bias by balance’ is important because the general public learns about science and policy mostly through the mass media, especially television (Boykoff, 2008; Nelkin, 1995). The institutionalized norms of focusing on balance – as well as the institutional norm of dramatization – have amplified the minority view that the scientific community is uncertain about the human role in climate change that is negligible or debatable (McCright and Dunlap, 2003).

Additionally, Kellstadt found that regarding issues dealing with expanding scientific knowledge, the public are only aware of key concepts, while the scientific

research is highly technical and difficult to report, especially in sound bites (2008). According to Kellstadt (2008), as people are exposed to more information about climate change, they should have a higher perception of risk, but the dominant frames of debate and conflict in mainstream media, which do not echo the near consensus in scientific opinion, produce the opposite effect. Kellstadt (2008) argued that the skepticism of the U.S. public regarding climate change can be attributed to perceptions of the media and views of how well scientists as a whole understand the problem. This confusion among the general public is extremely important as it relates to climate change policy. McCright and Dunlap (2003) argued that confusing messages sent by media can lead to confusion among the public as well as confusion within the policy debate and decision-making process. Boykoff (2008) agreed, stating, “[W]hen mass media coverage distorts rather than clarifies scientific understanding of anthropogenic climate change”, it can greatly impact how the United States approaches both domestic and federal policy issues related to climate change (p. 8). Additionally, Hallin and Giles (2005) contended that on issues with which the public has little experience, it relies more heavily on the media and would be more influenced by media frames, a concept discussed in the next section of the literature review.

Agenda Setting and Framing

Growing out of agenda setting research, framing is an increasingly popular method of analyzing the power of the media. In its historical conceptualization, agenda setting research focused on the transfer of issue salience from one agenda to another, primarily from the news media to the public within a specific media system (McCombs

and Shaw, 1972). As research methods became more sophisticated, the complicated effects and interplay amongst the media, public and policy agendas have been highlighted (Rogers and Dearing, 2007). The agendas of the media, public, or policy refer to the issues that are important to those particular actors. The media agenda, or the issues that are important to journalists, refer to the items that appear in the media, thereby bestowing them with a certain level of importance. Agenda setting theory examines how this importance translates to the public agenda, or the importance of these issues to the general public. According to McCombs and Ghanem (2001), five or fewer issues are usually of importance in the public agenda. This can in turn affect the policy agenda, or the issues that are of importance to government actors. The media agenda can also affect the public agenda, which can affect the policy agenda, which can in turn affect the media agenda. Lee, et. al (2008), examined how framing and journalistic norms in the media can affect the public agenda. They found frames of controversial policy issues did not directly change a person's opinion, but they did change the criteria deemed important in making judgments about these policy issues.

Cook (2007) described how modern American presidents have a powerful ability to set the media agenda, "carry[ing] particular political significance and particular political accountability, they are presumably the classic authoritative sources in a position to know" (p. 237). This also reflects the authority-order journalistic norm outlined by Boykoff and Boykoff (2007).

McCombs and Ghanem (2001) pointed out that the growth of agenda-setting theory is due largely to the fact that agenda-setting theory is compatible with a variety of

concepts and theories. The difference between this line of research and framing is that framing traditionally focuses on the origins of frames in the media, rather than on the transfer of issues salience from one agenda to the other or the impact of frames presented by the media on the public or policy agendas (McCombs & Ghanem, 2001). Entman (1993) defined framing as the selection of “some aspects of a perceived reality [to] make them more salient in a communication text, in such ways as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described” (p.52). According to Scheufele and Tewksbury (2007), framing, with roots set in psychology and sociology, is “based on the assumption that how an issue is characterized in news reports can have an influence on how it is understood by audiences” (p. 11). McCombs and Ghanem (2001) further addressed the intersection of agenda-setting and framing theories by pointing out that agenda-setting theory provides a useful means of sorting frames and deciding which specific frames to study.

Frames can be used to define a problem, diagnose a cause, make moral judgments, or suggest remedies to a problem (Maher, 2001; Entman, 1993). While, as stated above, most framing studies focus on the actual frames, some have begun to measure, rather than assume, audience effects. Maher (2001) wrote, “As the two trends coalesce, agenda-setting studies will continue to measure the transfer of attribute salience, while framing scholarship will increasingly measure audience effects. Both paths lead to the same communication phenomena – the media-public interaction in portrayals and understanding of elections or contested issues” (p. 91).

As McCombs and Ghanem (2001) pointed out, framing research needs an elaborate and generalizable stable of frames that are commonly found in the media. According to Scheufele and Tewksbury (2007), these frames help make complex issues, such as climate change, more accessible to the general public. The beginning of just this sort of stable of frames related to climate change, discussed below, is aided by Miller and Riechert's (2001) idea of "conceptualizing frames in terms of key verbal components measurable in news releases and news stories" to "examine how the dominance of competing frames can shift over time in public discourse and in the news media." (p. 110). Klein, Byerly and McEachern (2009) described this shift as counterframing. In a study on the anti-war movement in the United States during the Iraq War, Klein, et.al. (2009) found that reporters' use of quotations helped draw attention to messages of dissent, conceptualizing the actors in the news as active, speaking directly through quotations, or passive, speaking indirectly through mention by the reporter.

Comparative and Climate Change Framing Research

As stated above, much of the comparative research into media coverage has traditionally focused on war coverage, especially that of the recent Iraq war. In an analysis of coverage of the 2003 U.S. invasion of Iraq in five major newspapers from the United States (the *New York Times*), England (the *Times (of London)* and the *Guardian*), Pakistan (*The Dawn*) and India (the *Times of India*), Ravi (2005) found that U.S. and British newspaper coverage differed greatly from that of Pakistan and India. The Western liberal media systems in the United States and England focused on military strategy—although the British coverage reflected a more divided public agenda—while the

Pakistani and Indian newspapers provided greater coverage of the Iraqi viewpoint and civilian deaths (Ravi, 2005). Ravi concluded that the coverage reflected the “notions, values, and ideas that resonate within particular societies” (2005, p. 59). Ravi (2005) also noted differences among the *New York Times*, *the Guardian*, and the *Times*, especially in their coverage of Colin Powell’s February speech to the United Nations laying out the case for invading Iraq. In the United States, with its journalistic norm of balance and low political parallelism, the *New York Times* news coverage presented the facts of Powell’s speech with some critical examination on the front page, with the Iraqi side presented on inside pages of the newspaper (Ravi, 2005). The *New York Times* editorial page was much more critical of the speech and case for war (Ravi, 2005). With its high political parallelism, British coverage was much different. Both the *Times*’ news coverage and editorials supported the war, while the *Guardian*’s news coverage and editorials remained skeptical (Ravi, 2005).

Fahmy and Kim (2008) also noted differences between the *New York Times* and the *Guardian*, in their visual coverage of the war, reflective of differences in military involvement, public opinion, and media systems. For example, Curtin (2003) found that public opinion of the war in the United States was largely in favor of invading Iraq, while British public opinion largely opposed it (as cited in Fahmy and Kim, 2008). Fahmy and Kim (2008) found the *Guardian* ran some pictures of combat and numerous pictures of looting, as opposed to the complete absence of combat photos and focus on happy encounters with Iraqis in the *New York Times*. Additionally, the *New York Times* ran more photos of U.S. and British political leaders. According to Fahmy and Kim (2008),

“a plausible explanation is that the US media may have felt the need to frame the news in a more patriotic framework in an effort to meet readers’ expectations.” (p. 456). Fahmy and Kim (2008) also noted that these differences in portrayals occurred despite the fact these two newspapers are considered to have left-leaning tendencies in their respective countries.

As indicated by Hallin and Giles (2005) and Hallin and Mancini (2004), these studies indicate that media coverage in the United States and Britain differed with media coverage in other systems. However, differences between U.S. and British coverage existed, due largely to the journalistic norms in each country. These differences extend to climate change studies.

Many of the framing studies focused on climate change have focused solely on U.S. media. Boykoff and Boykoff (2007) examined climate change coverage in the newspapers and television in the United States from 1988-2004 and found increases in coverage in 1990, 1992, 1997, 2001-2002 and 2004. The study attributed these increases to a combination of ecological, political, and scientific causes which met the first- and second- order journalistic norms. Boykoff (2007) examined U.S. television coverage with a “critical discourse analytic approach, where importance was placed on labeling of those quoted, terminology, framing techniques, salience of elements in the text, tone, and relationships between clusters of messages” (p. 5). The study found that by diverging from the consensus view among climate scientists that anthropogenic climate change exists, U.S. television news coverage contributed to an information bias by creating an appearance of uncertainty where virtually none exists. This idea of uncertainty

surrounding climate science permeates the discourse in both the public and policy agendas. Nisbet and Scheufele (2009) pointed out that with regard to climate change, the U.S. public believes scientists “hold greater expertise, are less self interested, and should have greater say in decisions” than other sources, and that “public faith in science has remained virtually unchanged” (p. 1769).

In a synthesis of climate change framing researching, Nisbet (2008) outlined several frames applicable to climate change (p.18, Table 1). These frames inform the frames this thesis will examine.

Table 1.1*Typology of frames applicable to climate change*

Frame	Defines science related issue as...
Social progress	A means of improving quality of life or solving problems; alternative interpretation as a way to be in harmony with nature instead of mastering it.
Economic development /competitiveness	An economic investment; market benefit or risk; or a point of local, national, or global competitiveness.
Morality/ethics	A matter of right or wrong; or of respect or disrespect for limits, thresholds, or boundaries.
Scientific/technical uncertainty	A matter of expert understanding or consensus; a debate over what is known versus unknown; or peer-reviewed, confirmed knowledge versus hype or alarmism.
Pandora's box	A need for precaution or action in face of possible catastrophe and out-of-control consequences; or alternatively as fatalism, where there is no way to avoid the consequences or chosen path.
Public accountability/governance	Research or policy either in the public interest or serving special interests, emphasizing issues of control, transparency, participation, responsiveness, or ownership; or debate over proper use of science and expertise in decision making ("politicization").
Middle way/alternative path	A third way between conflicting or polarized views or options.
Conflict/strategy	A game among elites, such as who is winning or losing the debate; or a battle of personalities or groups (usually a journalist-driven interpretation).

Nisbet and Scheufele (2009) discussed the continued public opinions questioning the validity of climate science and importance of climate change in the U.S. as recently as 2007, positing that the history of media frames is to blame. The researchers cite the

climate skeptic message strategy of Republican pollster Frank Luntz from the late 1990s, which framed climate change in terms of “scientific uncertainty and the unfair economic burden to the U.S.”, and also led to “further distortions in news coverage, as journalists applied a preferred conflict frame, falsely balancing competing claims” (p. 1771). Nisbet and Scheufele further explained that environmental activists responded with a focus on the climate crisis, framed in the media with the Pandora’s Box frame, which climate skeptics called “alarmists.”

The first and most comprehensive cross-cultural study on framing of climate change compared climate change coverage between the *New York Times* and *Le Monde* from 1987-1997 (Brossard, et. al. 2004). The study examined each article in its sample for seven different frames, (Table 2). Additionally, the study examined the sources cited in each article, including academics/scientists, citizens, business groups, economists, unnamed experts, independent research groups, government sources, or environmental groups. These sources were coded as absent, meaning they were mentioned, versus present, meaning they were actually quoted.

Table 1.2

Frames Typology from Brossard, et. al.

Frames	Examples
New evidence or research presented	Announcement of a new government study, a new scientific report, an new environmental group report
Scientific background	General scientific and/or technical background of an issue (e.g., description of previous research, recapitulation of “known” results and findings)
Consequences	Consequences of global warming – bad or good (e.g. environmental, social, health), worst or best-case scenarios, predictions and projections
Economics	Costs of remedy or solutions to counter global warming effects
Domestic policies	Debate over environmental policy, laws, regulations, political speeches, campaigns, etc. (This frame was recorded when politics was the focus, not the forum.)
International relations	Summits, treaties, disputes, UN-sponsored research
Current weather	Abnormal patterns, severe storms, droughts

The study found the *New York Times* focused more on the consequences frame than *Le Monde*, while *Le Monde* focused more on the international relations frame. Additionally, the study found the *New York Times* presented more sources and varied viewpoints than did *Le Monde*. Brossard et. al. (2004) found U.S. coverage was characterized by an up and down issue cycle focused on the negative consequences of climate change, while the French coverage was more tied to political events, specifically international affairs. The researchers attributed these differences to differences in journalistic cultures between the U.S. and France. Also tellingly, the researchers found

industry sources (whose spokespersons tend to focus on the negative consequences of reducing greenhouse gas emissions) cited much more often in the *New York Times* than in *Le Monde*.

From a theoretical perspective, this research adds to the literature exploring framing of climate change and cross-national coverage. By comparing two newspapers that, though from the same liberal media model, have drastically different journalistic cultures, this thesis will provide further insight into the effects of journalistic norms on news frames. Additionally, this thesis will provide more recent information on climate change frames in the *New York Times* and the *Guardian*. Given past research, it is expected that the coverage of climate change of the *New York Times* and the *Guardian* will differ, with the *New York Times* focusing more on controversy and providing more “balanced” information, with more weight given to the climate skeptic argument. It should also be expected that the *New York Times* will draw from a larger variety of news sources. A change in coverage in the *New York Times* will indicate factors besides journalistic norms are more dominant in shaping coverage.

Chapter Two: Method

Framing Analysis

A framing analysis of content was conducted on climate change coverage in the *New York Times* and the *Guardian* from January 1, 2007 through December 31, 2009. Content analysis is the main form of analysis used in past framing analysis studies (Baden 2003; Brossard et. al. 2004; Boykoff 2007). *The New York Times* and the *Guardian* were selected because of their status as important newspapers in their respective countries (Baden, 2003; Fahmy and Kim, 2008; Brossard, et. al., 2004) and their use in numerous media research studies, especially those focused on framing analysis (e.g. Baden, 2003; Fahmy and Kim, 2008; Brossard, et. al., 2004). For example, Fahmy and Kim (2008) compared the *New York Times* and the *Guardian* in a study of visual framing of the Iraq War. Christie (2006) examined the *New York Times*, along with the *Washington Post*, ABC newscasts and White House briefings in an examination of the interaction of the media and public support during the Iraq War. Brossard, et. al. (2004) studied cultural construction of issue cycles related to climate change by looking at the *New York Times* and *Le Monde*. Likewise, the *Guardian* is a respected newspaper in England (Fridriksson, 2004, as cited in Fahmy and Kim, 2008). As stated above, Fahmy and Kim (2008) used the *Guardian* and the *New York Times* in a cross-national visual framing study of the Iraq War. Ravi (2005) examined both the *New York Times*

and *the Guardian*, among other papers, in a study on media coverage of the U.S. invasion of Iraq.

Sampling

The sample period extended from January 1, 2007 to December 31, 2009. The time period allowed for three years coverage, spanning two U.S. presidential administrations, George W. Bush (2007-2008) and Barack Obama (2009). It includes the release of the IPCC's Fourth Assessment Report, which was the most definitive declaration of the existence of climate change by the international scientific community to date, and ending with the United Nations most recent climate change meeting in Copenhagen.

A search on Lexis/Nexus using the terms "climate change" and "global warming" was conducted to obtain articles from the *New York Times* and the *Guardian* for the prescribed time period. These search terms were chosen based on their use in similar studies on climate change (Brossard, et. al. 2004; Oreskes 2004; Boykoff and Boykoff 2004). Because a general search of the terms produced more than 3,000 articles, many of which did not have climate change as a main focus, only articles in which one or both of the terms appear in the lead were used to determine the sample. This will help ensure climate change is the main focus of the articles selected. The lead, not the title, of the article was used because many "clever" titles may not include the key terms, which would have severely compromised the sampling process. A sample of articles for the *New York Times* was determined by selecting every 20th article, beginning with January 1, 2007 and ending with December 31, 2009, from a universe of 1296 articles. Because the

total number of *Guardian* articles was almost double that of the *New York Times*, every 40th article in the *Guardian* was selected for the sample. Articles determined to not be hard news were excluded. For the *New York Times*, these included editorials, op-eds, letters to the editor, art section reviews (i.e. books, plays, movies), and articles from the local section or the magazine. For the *Guardian*, these included articles from the comment and debate, arts, weekly, leader, or G2 pages. If a selected article was excluded, the next article on the list was used and sampling began with that article. The final sample consisted of a total of 117 articles, with 62 articles from the *Guardian* (21 from 2007, 18 from 2008, and 23 from 2009) and 55 articles from the *New York Times* (23 from 2007, 12 from 2008, and 20 from 2009).

Coding

Modeled on the Brossard et. al. (2004) study, this thesis examined both the frames of news stories in the *New York Times* and the *Guardian*, as well as the sources used in each news story. The frames examined were a combination of those used in Brossard et. al. (2004) and identified in Nisbet (2009) and are outlined in Table 3. If multiple frames were found in an article, all were recorded. The frame was defined as the lens through which the story was told. According to Entman (1993), to frame is to “select some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described. Thus, where multiple frames appeared in a story, frames that appeared in the headline and lead and set the tone of the story were classified as the

primary frames. Other frames that appeared in the story were classified as secondary frames.

Table 2.1

Themes Typology Proposed for this Thesis

Frames	Descriptions/Examples
the social progress frame	frames the issue by looking at ways to improve quality of life or solve problems
the economic development/competitiveness frame	addresses economic issues, costs of solutions;
the scientific/technical uncertainty frame	focuses on debate within the scientific community
the conflict/strategy frame	focuses on who is winning/losing the debate, especially among politicians
the Pandora's Box frame	focuses on catastrophe and out-of-control consequences; costs of doing nothing; and abnormal weather events
the new evidence frame	i.e. announcement of a new government study or scientific report)
the scientific background frame	general background, recapitulation of "known" results or findings
international relations	i.e. U.N. Summits, international disputes

Based on Brossard, et. al. (2004), sources listed were coded as:

academics/scientists, citizens, business groups, economists, unnamed experts, independent research groups, government sources, or environmental groups. While the study does not explicitly explain each source, for the purposes of this thesis they were identified as follows:

- academics/scientists – those affiliated with universities, scientific groups (such as the IPCC)
- Companies/business groups – i.e. the Chamber of Commerce

- environmental groups – groups with an environmental agenda, such as Environmental Working Group
- government sources – such as public officials, spokesperson for government entities
- economists
- unnamed experts
- independent research groups – groups without an environmental or business agenda
- citizens – the general public
- other – any source that does not fit into the above categories

As outlined in Klein, et. al. (2009), each source was coded as active (quoted) or passive (mentioned), with an understanding that active sources are attributed with more weight. Sources that were both active and passive were classified as both. Each source was also coded as a climate change skeptic (i.e. challenging the idea that anthropogenic climate change exists), a climate proponent (i.e. believing that anthropogenic climate change exists and is a grave threat), a climate change acknowledger (i.e. acknowledging that anthropogenic climate change exists, but is not a grave threat) or neutral (i.e. their comment was not about climate change or did not espouse an opinion). This coding of sources provided extra layers of analysis for the climate change frames studied, which will be explored during the discussion of the results below. As noted above, for the purposes of this study, sources were categorized as unnamed experts/sources only if it

was obvious they spoke to the reporter with a condition of anonymity. Only one coder was used, thus no intercoder reliability test was conducted.

Research Questions

Based on the research outlined above, a number of research questions were developed for this thesis.

RQ1: As defined in Table 2.1, what are the most prevalent frames of climate change in the *New York Times*' and the *Guardian*'s coverage?

A set of frames was developed based on the frames typology in Nisbet (2009) and Brossard (2004) (see Table 2.1). How these frames are presented is as important as how prevalent they are.

RQ1a: How are these frames presented? Do certain frames tend to appear clustered together?

Based on journalistic norms of dramatization, novelty, and balance, and the findings by Brossard, et. al. (2004), it was posited the coverage in the *New York Times* will be more event-driven, with more focus on scientific controversy and the negative effects of reducing greenhouse gas emissions. Therefore, these frames were analyzed to determine if the controversy frame was used more frequently in one publication than the other:

RQ2: Is the frame of climate change as a scientific controversy more prevalent in the *New York Times* than in the *Guardian*?

RQ3: What sources are most prevalent in the *New York Times* and the *Guardian*'s coverage? How are these sources presented?

Following the findings of Klein, et.al, it would be expected that stories with the main news frame focused on scientific controversy would have more active actors that are climate change skeptics.

RQ3a: Who are the active and passive actors in each?

RQ3b: Who are the climate change proponents/skeptics?

This thesis will also address changes (if there are any) in coverage From 2007 to 2009.

RQ 4: Did frames/sources change over the sample period? Is there a correlation between these changes and specific events, such as the release of the IPCC's Fourth Assessment Report?

A change in coverage could indicate factors other than journalistic norms at work in the coverage of climate change, depending on how that change is in evidence.

Finally, addressing the journalistic norm of authority-order, this thesis will examine a time period that covers two U.S. presidential administrations.

RQ5: Is there a difference in the frames and/or sources used during the Bush vs. Obama Administrations? If so, what are these differences?

Again, depending on the results, a change in frames and/or sources used between administrations could indicate the existence of factors other than journalistic norms and or cultures.

Chapter Three: Results

The research found many broad similarities in the coverage of climate change in the *New York Times* and the *Guardian*. Both newspapers employed the same frames and used the same sources frequently. However, the differences highlight some differences in the journalistic norms between the two newspapers. As state above, previous research has indicated that the media systems in the United States and England fall under the liberal media model, which would account for the similarities in coverage between the two publications. However, the differences are accounted for by the European influence on British media. This chapter outlines the research results.

Prevalent Frames and Frame Clusters

A total of 192 frames were identified in a total of 117 stories analyzed, with 91 frames in 55 stories for the *New York Times* and 101 frames in 62 stories for the *Guardian*. The most prevalent frames in the *New York Times* were the economic development/competitiveness frame, which appeared 24 times (27.3% of the total frames identified), and the conflict/strategy frame, which appeared 18 times (20.5%). The Pandora's Box frame and the international relations frame both appeared 13 times (14.8%). The most prevalent frames in the *Guardian* were the Pandora's Box frame, which appeared 24 times (24.2%), the international relations frame, which appeared 18 times (18.0%), and the new evidence frame, which appeared 17 times (17.2%). Table 3.1

lists the frequency of climate change frames found in the *New York Times* and the *Guardian* from January 1, 2007 to December 31, 2009. There difference between the *New York Times* and the *Guardian* use of frames was significant ($X^2 = 16.54$, $df = 8$, $p = .035$).

Table 3.1
Frequency of Frames in the New York Times and the Guardian, 2007-2009

Frames	<i>New York Times</i> Frequency	<i>New York Times</i> Percentage	<i>Guardian</i> Frequency	<i>Guardian</i> Percentage
the social progress frame	7	8.0%	12	12.1%
the economic development/competitiveness frame	24	27.3%	12	12.1%
the scientific/technical uncertainty frame	3	3.4%	1	1.0%
the conflict/strategy frame	18	20.5%	14	14.1%
the Pandora's Box frame	13	14.8%	24	24.2%
the new evidence frame	8	9.1%	17	17.2%
the scientific background frame	2	2.3%	0	0.0%
international relations	13	14.8%	18	18.0%
Other	0	0.0%	1	1.0%
Total	88	100%	99	100%

Of the stories analyzed, 66 stories (56.4%) used multiple frames in the same story. Of those, 33 (60.0%) *New York Times* stories had multiple frames and 33 (53.2%) *Guardian* stories had multiple frames. The most prevalent clusters in the *New York Times* were the economic development and conflict/strategy frames, and the economic development and international relations frames, which both appeared together seven times (21.2% of those stories that had multiple frames). The economic development and social progress frames, as well as the Pandora's Box and new evidence frames, appeared

together five times (15.2%). The most prevalent cluster in the *Guardian* by far was the Pandora’s Box and new evidence frames, which appeared together 13 times (39.4%). The economic development and international relations frames appeared together five times (15.2%), and the conflict/strategy and international relations frames appeared together four times (12.1%). Table 3.2 lists all of the clusters in order of the frequency in which they appeared in both the *New York Times* and the *Guardian*.

Table 3.2

Clusters of Frames in the New York Times and the Guardian

<i>New York Times</i>		<i>Guardian</i>	
Clusters	Frequency/ Percentage	Clusters	Frequency/ Percentage
Economic development & Conflict/strategy	7/ 21.2%	Pandora’s Box & New evidence	13/ 39.4%
Economic development & International relations	7/ 21.2%	Economic development & International relations	5/ 15.2%
Pandora’s Box & New evidence	5/ 15.2%	Conflict/strategy & International relations	4/ 12.1%
Social progress & Economic development	4/ 12.1%	Social progress & Economic development	3/ 9.1%
Conflict/strategy & New evidence frames	2/ 6.1%	Pandora’s Box & International relations	2/ 6.1%
Pandora’s Box & International relations	2/ 6.1%	Social progress & Conflict/strategy	2/ 6.1%
Misc frame clusters that only appeared once	6/ 18.2%	Misc frame clusters that only appeared once	4/ 12.1%
Total	33/100%	Total	33/100%

Stories in the *New York Times* featuring the economic development/competitiveness frame focused on rising energy costs, the costs of renewable energy, and how climate change is affecting various industries.

Any mention of climate change legislation focused almost solely on a cap and trade system (i.e., a system where government puts caps on carbon emissions, but allows companies to trade credits if they fall below the cap to companies that fall above the cap).

The cluster of economic development and conflict/strategy frames were found during stories related to possible climate change legislation, which often focused on a cap and trade system. In fact, the climate change bill was often referred to as the cap and trade bill. For example, one article in the *New York Times* on July 11, 2007, discussing a new climate change proposal in the U.S. Congress focuses on energy prices and a cap and trade system:

The complex measure... would put in place a firm limit on emissions of heat-trapping gases that most scientists say are causing the warming of the planet. Like other so-called cap-and-trade schemes, it would allow companies to buy and sell the right to emit carbon dioxide, which is seen as the chief culprit in global warming... The bill won the endorsement of the AFL-CIO, the United Auto Workers, the United Mine workers and several other unions, who have all been reluctant to support any far-reaching climate change legislation because of fear that it would drive up the price of energy and force manufacturers to move operations outside the United States (Broder, 2007, p. A14).

Additionally, stories on presidential candidates focused on the economic issues surrounding climate change. For example, a story about John Edwards, then running in the Democratic Party's primary, passively quoted the candidate as saying limiting greenhouse gases "could lead to an energy-drive economy that could create up to a million jobs" (AP, 2007). Another article that appeared on President Obama's

inauguration day stated, “Obama can effectively tie conservation, efficiency, and renewable energy to jobs, sustainable growth and national security” (Revkin, 2009, p. A13).

The conflict/strategy frame was also prevalent in the *New York Times*. One article in the New York Time related to a climate change bill discussed how in her “determination to move on climate bills” Speaker of the House Nancy Pelosi “wanted to create a special committee on climate, apparently an end run around Representative John Dingell, the chairman of the Energy and Commerce Committee.” It went on to offer Dingell’s response that such committees were “as relevant and useful as feathers on a fish” (Barringer and Revkin, 2007, A24).

Another article in the *New York Times* from December 16, 2008, discussing President-Elect Obama’s new team on energy and climate, focused almost exclusively on strategy:

The team President-elect Barack Obama introduced on Monday to carry out his energy and environmental policies faces a host of political, economic, diplomatic and scientific challenges that could impede his plans to address global warming and America’s growing dependence on dirty and uncertain sources of industry...The most pressing environmental issue for the incoming team will almost certainly be settling on an effective and politically tenable approach to the intertwined issues of energy security and global warming... The intense ideological and regional rivalries that have stalled climate change legislation in congress for years have not suddenly melted away... The new team faces political urgency to deliver on promises made by Mr. Obama on the campaign trail (Broder and Revkin, p.A24).

This same article also featured the economic development frame. For example, the article stated, “...there are big questions about what priority will be given to direct public infrastructure spending versus tax-based incentives versus environmental markets versus

direct regulation,” and asserted “any solution to the climate problem must address these costs and provide consumers and electricity producers time to adjust.”

The cluster of the economic development and international relations frames in both media outlets primarily focused on developed vs. developing nations and discussions over how much developing nations should be required to rely on renewable energy and how much money developed nations should be giving to assist them.

For example, a story in the *New York Times* discussing energy needs of developing nations stated:

It will cost between \$500 billion and \$600 billion every year for the next 10 years to allow developing nations to grow using renewable energy resources...developed and developing nations are still deeply divided over who bears the responsibility for shouldering the expense of deploying cleaner energy resources, much less what the actual amount might be (MacFarquhar, 2009, A6).

A story in the *Guardian* also provided evidence for this frame:

Developing countries, including China and India, are unwilling to sign up to a new global climate change pact to replace the Kyoto protocol in 2012 because the rich world has failed to set a clear example on cutting carbon emissions... Britain and the U.S. have pledged support for new World Bank funds to support climate adaptation and technology transfer...rich countries have failed to keep similar promises in the past – only 90m (£) of a promised 600m (£) to pay for adaptation measures had been delivered to a Global Environment Facility fund by the end of last year (Adam and Vidal, 2008, p. 1).

In the *Guardian*, the cluster of the Pandora’s Box frame with the new evidence frame often extrapolated the dire consequences found in new studies. One article stated, “Governments are running out of time to address climate change and to avoid the worst effects of rising temperatures” (Adam, 2007, p. 12), while another referred to “catastrophic warming in our lifetime” (Adam, 2009b, p. 1). One source’s quote

exemplified the use of the clustering of the Pandora's Box and new evidence frames in the *Guardian*. In a 2008 story, Tony Burke, Australia's agriculture minister, was quoted as saying, "Parts of these high-level projections read more like a disaster novel than a scientific report" (McMahon 2008, p. 15).

Although this cluster was used in the *New York Times* to a lesser extent, it was used in the same way as the *Guardian*:

A rise in sea levels and other changes fueled by global warming threaten roads, rail lines, ports, airports and other important infrastructure, and policy makers and planners should be acting now to avoid or mitigate their effects, according to new government reports. (Dean, 2008, p. A21)

The *Guardian* also used the international relations and conflict/strategy frames together. These clusters were often related to United Nations negotiations, where the conflict was the centerpiece of the story, rather than the issues of the conflict. As with many *Guardian* stories that featured the conflict/strategy frame, the United States is central to these stories. For example, a story in the *Guardian* from November 6, 2009, regarding the Copenhagen meetings discussed the possibility that a global treaty would be postponed laid a large part of the blame on the United States:

The delay was said to be caused by a combination of time running out in the increasingly rancorous UN negotiations and the inability of the US – the world's biggest cumulative emitter – to commit to specific targets and timetables by passing a domestic law... 'People are waiting for each other so it is difficult to blame anyone. (But) the US position is significant. Clearly the US has been slowing things down (Vidal et.al, 2009, p. 1).

Another article focuses on disagreements between Europe and the United States on a climate change treaty:

Europe has clashed with the Obama administration over how to tackle climate change in a potentially damaging split in advance of crucial political negotiations on a global deal to regulate greenhouse gas emissions. The *Guardian* understands that differences have emerged over the structure of an international treaty on global warming. Sources on the European side say the US approach could undermine the treaty and weaken the world's ability to cut carbon emissions. (Adams, 2009a, p. 1).

This blame frame was largely absent in the *New York Times*, where the conflict/strategy frame was mostly focused on internal (to the country) conflicts and the international debate over economic issues. Other articles in the *Guardian* that featured the conflict/strategy frame referred to issues within the U.S., such as the Obama administration's stance on wildlife legislation and fake letters questioning climate change sent to the U.S. Congress.

Comparison of the Scientific Uncertainty Frame

While three stories (3.4%) in the *New York Times* and one story in the *Guardian* (1.0%) fell within the frame of scientific uncertainty, none questioned the existence of anthropogenic climate change. In the *New York Times*, one story focused on the East Anglia email scandal (in which emails were discovered discussing interpretations of data), one focused on an error in accounting for greenhouse gas emissions related to deforestation, one focused on article by Freeman Dyson stating that global warming should not be as big of a worry as environmentalists think because we will create the technologies needed to address it, and one focused on whether climate change will lead to a rise in hurricanes. The sole scientific uncertainty frame in the *Guardian* came in July of

2007 and focused on a new study that showed even though the sun's activity has decreased, global warming has increased, which the article pointed out refuted any claims by climate skeptics. So while the *New York Times* did feature more scientific uncertainty frames than the *Guardian*, the frame did not factor significantly in either paper's coverage.

One telling quote from the *New York Times* highlighted this shift:

Daniel Yergen, the chairman of Cambridge Energy Research and the organizer of the conference, said all oil companies recognized that major policy changes were coming, and that they need to be part of the debate.

They are not arguing about basic philosophy anymore, but about practical steps, he said. We're moving into a new era of policymaking that will have very important and far-reaching implications for energy markets. (Krauss and Mouawad, 2009, p. 3)

Sources

In the articles analyzed, the *New York Times* cited 242 sources, averaging 3.9 sources per article. The most frequently used sources in the *New York Times* were government sources (73/30.2% of total sources), followed by academics/scientists (64/26.4%), companies/business groups (41/16.9%), and, finally, environmental groups (31/12.8 %). Together, these groups comprised 86.3% of all the sources used in the *New York Times*. Economists, unnamed experts/sources, independent research groups, citizens, and other accounted for the remaining 13.7%.

In the articles analyzed, the *Guardian* cited 147 sources, averaging 2.6 sources per article. The most frequently used sources in the *Guardian* were government sources (57/38.8%), followed by academics/scientists (36/24.5%), environmental groups

(25/17.0%), and finally companies/business groups (19/12.9%). These groups comprised 93.2% of the sources used in *Guardian*. Economists, unnamed experts/sources, independent research groups, citizens, and other accounted for the remaining 6.8%. Table 3.3 lists the frequency of sources from these groups, and what percentage they held of the total sources for each paper. However, the difference between the frequency of sources used was not significant ($X^2 = 10.22$, $df = 8$, $p = .25$).

Table 3.3

Frequency and Percentage of Sources in the New York Times and the Guardian

Sources	<i>New York Times</i>		<i>Guardian</i>	
	Frequency	Percentage	Frequency	Percentage
Academics/scientists	64	26.4%	36	24.5%
Companies/business groups	41	16.9%	19	12.9%
Environmental groups	31	12.8%	25	17.0%
Government sources	73	30.2%	57	38.8%
Economists	1	.4%	0	0.0%
Unnamed experts/sources	4	1.7%	2	1.4%
Independent research groups	11	4.5%	2	1.4%
citizens	13	5.4%	3	2.0%
other	4	1.7%	3	2.0%
TOTALS	242	100%	147	100%

Both newspapers relied on government sources the most, though the *Guardian* quoted government source 38.8% while the *New York Time* quoted them 30.2% of the time. They both relied on academics/scientists next at around 25%. The *New York Times* relied more on companies/business groups than environmental groups (16.9% and 12.8%) while the *Guardian* reversed that, with 17% of its sources coming from environmental groups and 12.9% coming from businesses. As noted above, for the purposes of this

study, sources were categorized as unnamed experts/sources only if it was obvious they spoke to the reporter with a condition of anonymity. The *Guardian* often referred to a spokesperson for a company or a government official by title without using their name, while this practice was rarely used in the *New York Times*.

Sources were also categorized as active or passive actors. Active were classified as anyone directly quoted, while passive actors were classified as such if they were quoted indirectly or paraphrased by the reporter. Sources that were quoted both actively and passively were classified as such. While the *Guardian* used less total sources than the *New York Times*, they used passive actors much less than the *New York Times*. This is important because the message of an active actor can be viewed as more important than that of a passive actor Table 3.4 outlines the frequency of active and passive actors among the sources cited in the *New York Times* and the *Guardian*. Because of the small sample size, a critical value of $p \leq .10$ was used. Thus, the difference between the *New York Times* and the *Guardian* in active and passive actors used was significant ($X^2 = 33.6$, $df = 24$, $p < .10$).

Table 3.4***Active and Passive Actors in the New York Times and the Guardian***

Source	NYT Active	NYT Passive	NYT Total	<i>Guardian</i> Active	<i>Guardian</i> Passive	<i>Guardian</i> Total
Academics/scientists	44 (55.0%)	36 (45.0%)	80	33 (82.5%)	7 (17.5%)	40
Companies/business groups	36 (62.1%)	22 (37.9%)	58	16 (80.0%)	4 (20.0%)	20
Environmental groups	28 (70.0%)	12 (30.0%)	40	25 (89.3%)	3 (10.7%)	28
Government sources	61 (67.0%)	30 (33.0%)	91	46 (70.8%)	19 (29.2%)	65
Economists	0 (0%)	1 (100%)	1	0 (0%)	0 (0%)	0
Unnamed experts/sources	2 (40.0%)	3 (60.0%)	5	1 (50.0%)	1 (50.0%)	2
Independent research groups	7 (53.9%)	6 (46.1%)	13	2 (100%)	0 (0%)	2
citizens	10 (76.9%)	3 (23.1%)	13	1 (100%)	0 (0%)	1
other	4 (80.0%)	1 (20.0%)	5	3 (100%)	0 (0%)	3
Total	192 (62.7%)	114 (37.3%)	306	127 (78.9%)	34 (21.1%)	161

Breaking the top four most popular groups of sources down, the top source group in both publications (government sources) used passive/active actors at approximately the same rate (70.8% active/29.2% passive in the *Guardian*; 67% active/33% passive in the *New York Times*). For academic/scientists (the second most used group in both publications), the *Guardian* used them actively 82.5% of the time and passively 17.5% of the time, while the *New York Times* only used them actively 55% of the time and passively 45% of the time. For companies/business groups, the *Guardian* used them actively 80% of the time and passively 20% of the time, while the *New York Times* used

them actively 62.1% of the time and passively 37.9% of the time. For environmental groups, active/passive ratios were 89.3% active/10.7 % passive in the *Guardian* and 70% active/30% passive in the *New York Times*.

For the purposes of this study, each source was also categorized as a climate change skeptic (does not believe anthropogenic climate change exists), climate change proponent (believes anthropogenic climate change exists and is a major threat, or neutral (did not indicate a view one way or the other). In addition to these four pre-established groups, a fourth category began to emerge during the research. These sources acknowledged the existence of anthropogenic climate change, but differed from climate change proponents in that they did not view it as a grave danger. These sources were categorized as “climate change acknowledgers”.

The vast majority of sources in the *New York Times* were either climate change proponents (58.8%) or neutral (34.2%), with 15 climate change acknowledgers (6.2%) and two skeptics (.8%). Table 3.5 outlines the distribution of sources that were climate change proponents, skeptics, acknowledgers, and neutral. There was a significant difference in the climate change views of the sources in the *New York Times* ($X^2 = 80.95$, $df = 24$, $p < .05$).

Table 3.5***Source Views on Climate Change in the New York Times***

Source	Climate Change Proponent	Climate Change Acknowledger	Climate Change Skeptic	Neutral
Academics/ Scientists	38 (60.3%)	3(4.8%)	0(0.0%)	22(34.9%)
Companies/ Business groups	13(32.5%)	4(10.0%)	1(2.5%)	22(55.0%)
Environmental Groups	26(83.9%)	0	0	5(16.1%)
Government Sources	49(67.1%)	6(8.2%)	1(1.4%)	17(23.3%)
Economists	0	1(100.0%)	0	0
Unnamed Sources	2(50.0%)	0	0	2(50.0%)
Independent Research Groups	4(36.4%)	1(9.1%)	0	6(54.5%)
Citizen	6(46.2%)	0	0	7(53.8%)
Other	3(75.0%)	0	0	1(25.0%)
Total	141 (58.8%)	15(6.2%)	2(.8%)	82(34.2%)

Not one single source in the *Guardian* could be categorized as a climate change skeptic, and only five (3.4%) could be categorized as a climate change acknowledger. The vast majority were climate change proponents (73.5%), as well as neutral (23.1%). Table 3.6 outlines the distribution of climate change proponents, skeptics, and acknowledgers among the sources in the *Guardian*. There was a significant difference in the source views on climate change in the *Guardian*. ($X^2 = 152.08$, $df = 24$, $p < .05$).

Table 3.6***Source Views on Climate Change in the Guardian***

Source	Climate Change Proponent	Climate Change Acknowledger	Climate Change Skeptic	Neutral
Academics/ Scientists	31(86.1%)	0	0	5(13.8%)
Companies/ Business groups	5(26.3%)	3 (15.8%)	0	11(57.9%)
Environmental Groups	23(92.0%)	0	0	2(8.0%)
Government Sources	44(57.1%)	2(2.6%)	0	11(14.3%)
Economists	0	0	0	0
Unnamed Sources	2 (100.0%)	0	0	0
Independent Research Groups	1(50.0%)	0	0	1(50.0%)
Citizen	0	0	0	3(100.0%)
Other	2(66.7%)	0	0	1(33.3%)
Total	108(73.5%)	5(3.4%)	0	34(23.1%)

No academic/scientists sources in the *Guardian* were classified as climate change acknowledgers or skeptics, while three academics/scientists sources in the *New York Times* were climate change acknowledgers, or 4.8% of the academic/scientists sources.

Table 3.7***Climate Acknowledgers/Skeptics/Proponents as Active/Passive Actors***

	<i>New York Times</i>	<i>Guardian</i>
Acknowledger/Active	14 (7.04%)	6 (5.17%)
Acknowledger/Passive	7 (3.52%)	0
Skeptic/Active	1 (.5%)	0
Skeptic/Passive	1(.5%)	0
Proponent/Active	119 (59.8%)	86 (74.14%)
Proponent/Passive	57 (28.64%)	24 (20.69%)
Total	199	116

The *New York Times* quoted more sources overall, but they also quoted more sources passively. Interestingly, there was little to no correlation between climate change skeptics and the scientific uncertainty frame. Two of the 15 climate change acknowledgers (13.3%) and neither of the two climate change skeptics in the *New York Times* were in stories that featured the scientific uncertainty frame. This could be a result of the *New York Times* uncritically quoting more sources to provide a sense of balance to a story, rather than critically quoting sources to shape an argument.

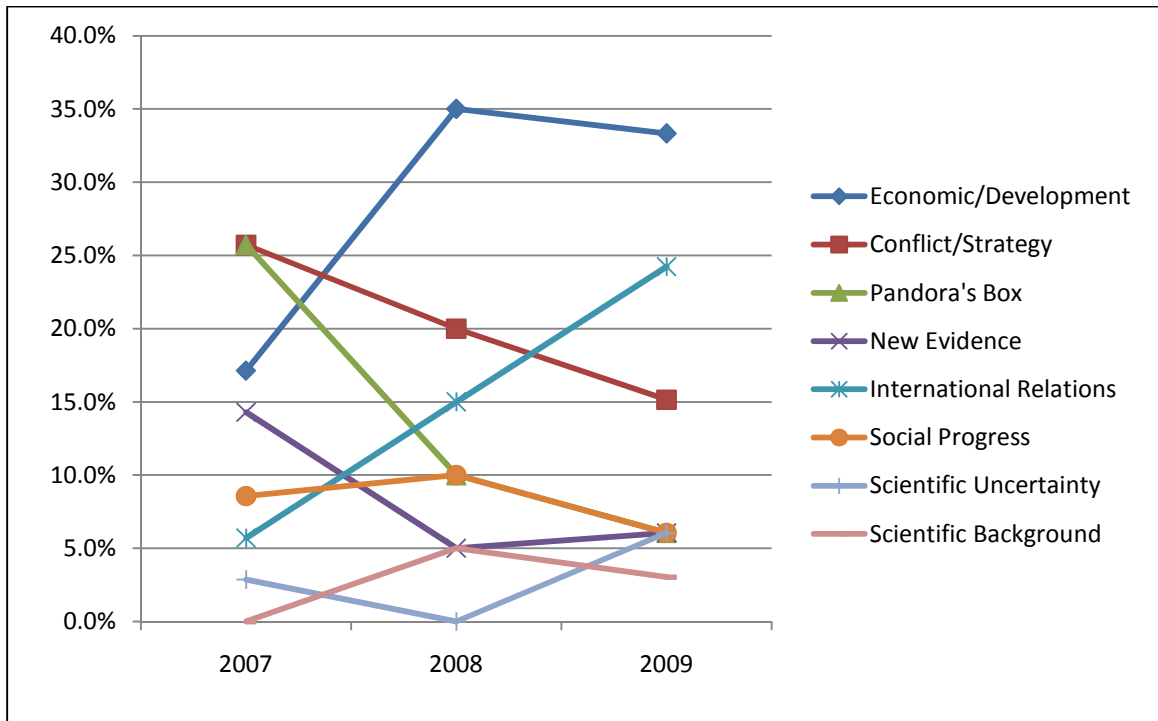
Frames and sources over time

The number of stories in the *Guardian* remained fairly constant (21 in 2007, 18 in 2008, 23 in 2009), while the *New York Times*, on the other hand, saw a significant dip in the number of stories in 2008 (23 in 2007, 12 in 2008, 20 in 2009).

In 2007, the most popular frames in the *New York Times* were the conflict/strategy frame (9 frames/25.7% of 2007 frames) and the Pandora's Box frame (9 frames/25.7% of 2007 frames). In 2008, the most popular frames in the *New York Times* were the economic development frame (7 frames/35.0% of 2008 frames) and the conflict/strategy frame (4

frames/20.0% of 2008 frames). In 2009, the most popular frames in the *New York Times* were the economic development frame (11 frames/33.3% of 2009 frames) and the international relations frame (8 frames/24.2% of 2009 frames). The *New York Times* saw dramatic increases in the economic development frame, from 2007 (6/frames17.1% of 2007 frames), to 2008 (7/35.0% of 2008 frames), although this leveled out in 2009 (11/33.3% of 2009 frames). Additionally, the presence of the international relations frame steadily increased from 2007 (2/5.7% of 2007 frames) to 2008 (3/15.0% of 2008 frames) and on to 2009 (8/24.2% of 2009 frames). Conversely, the *New York Times* used the conflict/strategy frame consistently less across time, from 2007 (9/25.7% of 2007 frames) through 2008 (4/20.0% of 2008 frames) and 2009 (5/15.2% of 2009 frames). Similarly, the Pandora's Box frame dropped from 2007 (9/25.7% of 2007 frames) to 2008 (2/10.0% of 2008 frames) and 2009 (2/6.1% of 2009 frames). Figure 4.1 outlines the frequency of frames in the *New York Times*. There was a significant difference in the total frames across years ($X^2 = 16.47$, $df = 8$, $p = .036$), and in the frames across years for the *New York Times* – Figure 4.1 - ($X^2 = 14.28$, $df = 8$, $p = .075$), but not for the *Guardian* – Figure 4.2 - ($X^2 = 10.20$, $df = 8$, $p = .25$). Because of the small sample size, a critical value of $p \leq .10$ was used.

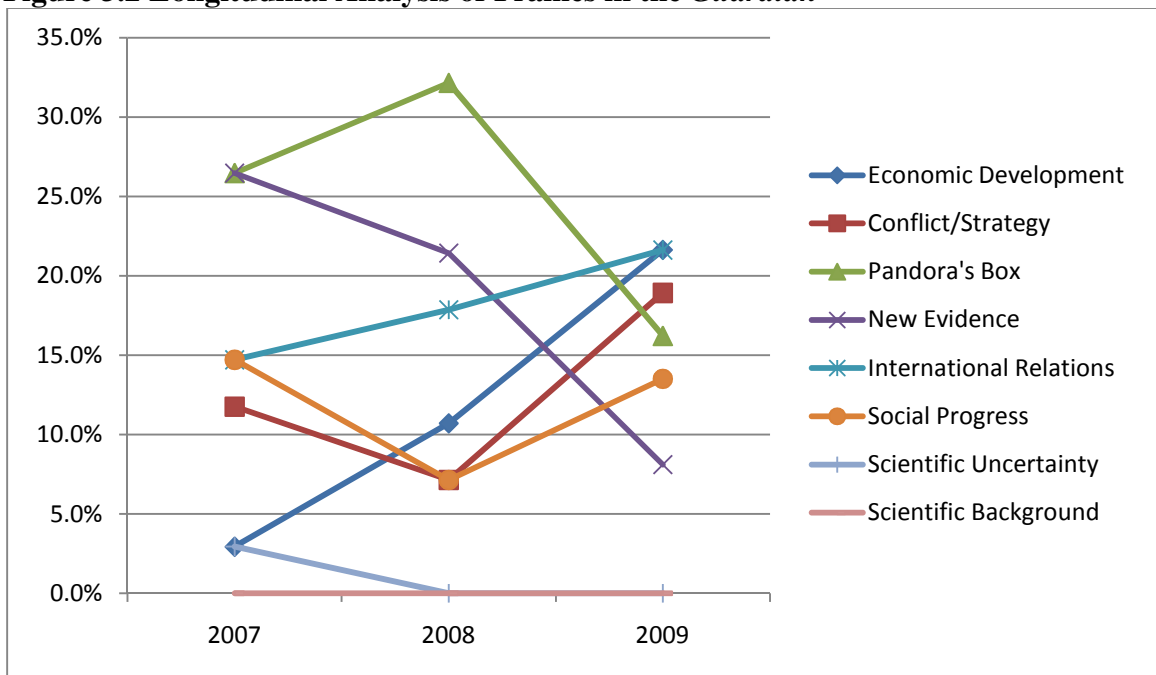
Figure 3.1 Longitudinal Analysis of Frames in the *New York Times*



In 2007, the most popular frames in the *Guardian* were the Pandora's Box frame (9 frames/26.5% of 2007 frames) and the new evidence frame (9 frames/26.5% of 2007 frames). In 2008, the most popular frames in the *Guardian* were also the Pandora's Box frame (9 frames/32.2% of 2008 frames) and the new evidence frame (6 frames/21.4% of 2008 frames) followed by the international relations frame (5 frames/17.9% of 2008 frames). In 2009, the most popular frames in the *Guardian* were the international relations frame (8 frames/21.6% of 2009 frames) and the economic development frame (8 frames/21.6% of 2009 frames), followed closely by the conflict/strategy frame (7 frames/18.9% of 2009 frames). The *Guardian* saw a significant increase in the economic development frame, from 2007 (1/2.9% of 2007 frames), to 2008 (3/10.7% of 2008 frames) to 2009 (8/21.6% of 2009 frames). The international relations frame steadily

increased, from 2007 (5/14.7% of 2007 frames) to 2008 (4/17.9% of 2008 frames) and through 2009 (8/21.6% of 2009 frames) as well. In addition, the presence of the conflict/strategy frame dramatically increased from 2007 (4/11.8% of 2007 frames) and 2008 (2/7.1% of 2008 frames) to 2009 (7/18.9% of 2009 frames). In the *Guardian*, the new evidence frame fell over the three-year period, from 2007 (9/26.5% of 2007 frames) to 2008 (6/21.4% of 2008 frames), and dropped dramatically in 2009 (3/8.1% of 2009 frames). The Pandora's Box frame increased from 2007 (9/26.5% of 2007 frames) to 2008 (9/32.1% of 2008 frames), before dramatically dropping in 2009 (6/16.2% of 2009 frames). Figure 4.2 outlines the frequency of frames in the *Guardian*.

Figure 3.2 Longitudinal Analysis of Frames in the *Guardian*



Both publications also saw four source groups at the top, though in different orders. Because government, academic/scientists, environmental, and companies/business groups comprised the majority of sources in both publications (86.3% in the *New York*

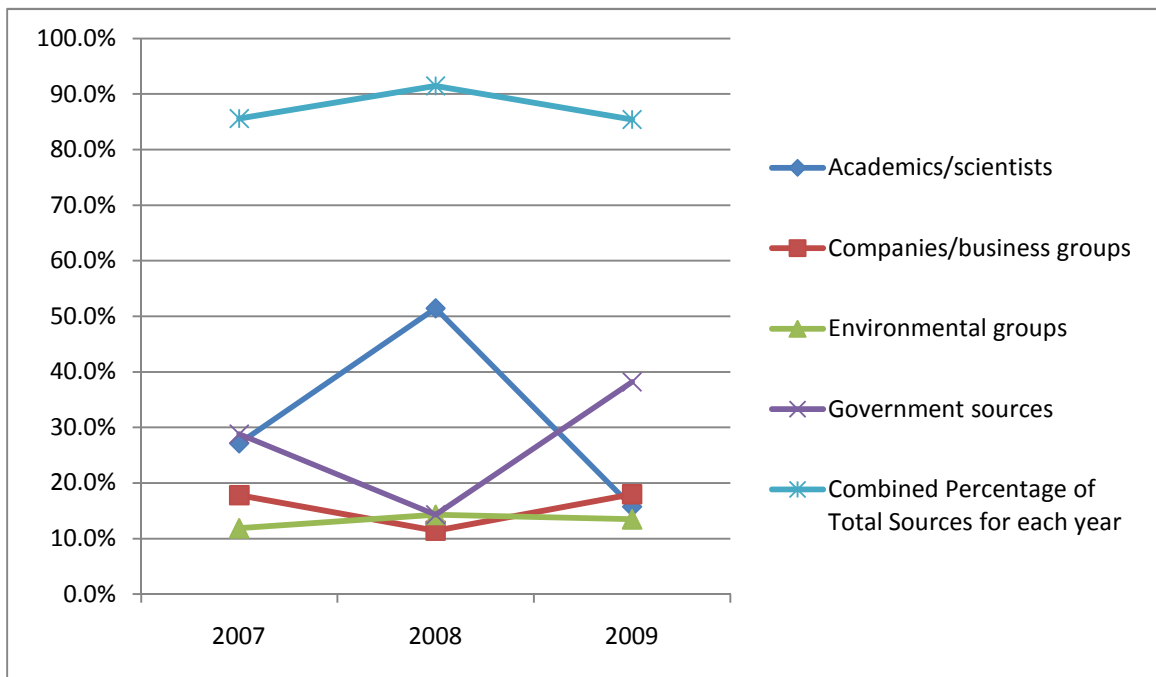
Times and 93.2% in the *Guardian*), and the percentage of total sources used of the four groups combined remained fairly constant over the sample period (for the *New York Times*: 85.6% in 2007, 91.4% in 2008, and 85.4% in 2009; for the *Guardian* 91.3% in 2007, 84.8% in 2008, 84.8% in 2009), these were the only sources analyzed longitudinally.

The total number of sources analyzed for each year for the *New York Times* was 118 in 2007, 35 in 2008, and 89 in 2009. In 2007, the most popular sources in the *New York Times* were government sources (34 sources/28.8% of 2007 sources) followed closely by academic/scientists (32 sources/27.1% of 2007 sources). Companies/business groups were used 17.8% of the time, and environmental sources 11.9% of the time. In 2008, academic/scientists were by far the most popular (18 sources/51.4% of 2008 sources), with the remaining categories split fairly evenly (14.3% for both environmental and government sources, 11.4% for companies/business groups). In 2009, government sources were the most popular (34 sources/38.2% of 2009). Again, the remaining sources were split with 18.0% companies/business groups, 15.7% academics/scientists, and 13.5% environmental sources. The use of academics/scientists increased from 27.1% in 2007 to 51.4% in 2008, and then dropped dramatically to 15.7% in 2009.

Companies/business groups remained roughly the same between 2007 (17.8%) and 2009 (18.0%), with a slight drop-off in 2008 (11.4%). Use of environmental sources remained fairly steady (11.9% in 2007, 14.3% in 2008, and 13.5% in 2009). Government sources dropped from 28.8% in 2007 to 14.3% in 2008 then rose dramatically to 38.2% in 2009. Figure 3.3 features a graph of the frequency of sources in the *New York Times* for each

sample year. However, neither the difference in the total sources across years ($X^2 = 9.1$, $df = 6$, $p = .168$) for the *New York Times* – Figure 3.3 - ($X^2 = 5.59$, $df = 6$, $p = .471$) or the *Guardian* – Figure 3.4 - ($X^2 = 9.2$, $df = 6$, $p = .163$) was significant. Because of the small sample size, a critical value of $p \leq .10$ was used.

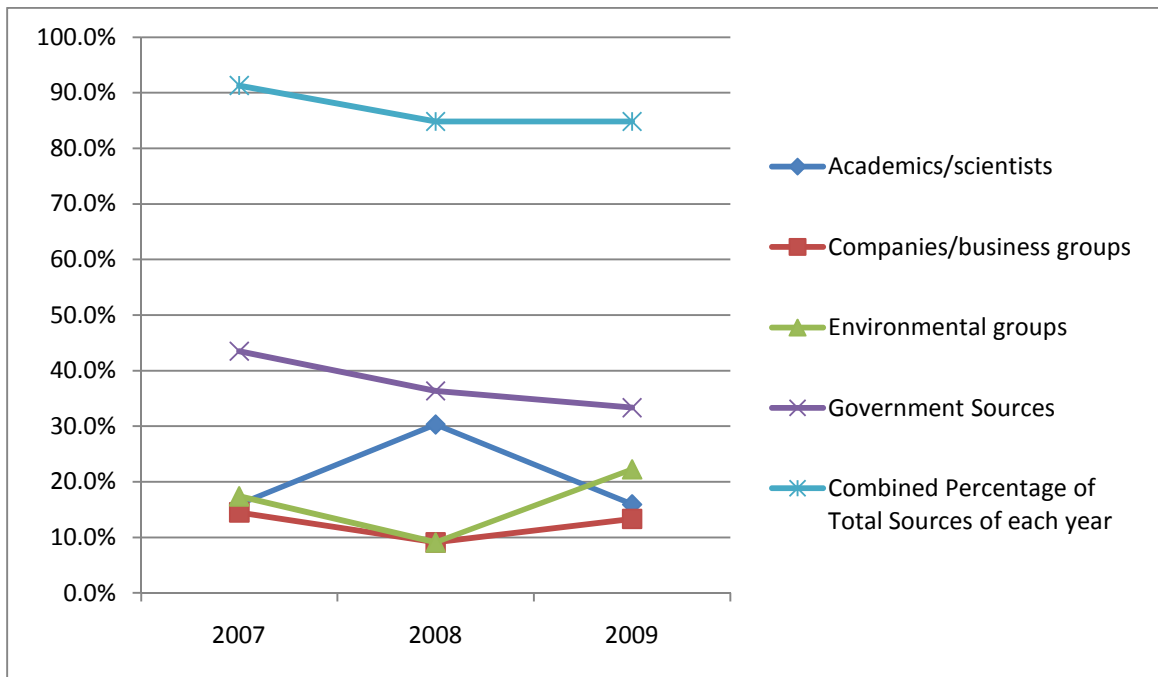
Figure 3.3 Longitudinal Analysis of Sources in the *New York Times*



The number of sources analyzed for each year for the *Guardian* was 45 in 2007, 33 in 2008, and 69 in 2009. In 2007, the most popular sources in the *Guardian* were government sources (43.5%) with the remaining three split fairly evenly (17.4% for environmental groups, 15.9% for academics/scientists, and 14.5% for companies/business groups). In 2008, the most popular sources were government sources (36.4%, followed closely by academics/scientists (30.3%). Companies/business groups and environmental groups were split evenly at 9.1%. In 2009, government sources were again the most

popular (33.3%), followed by environmental groups (22.2%), followed by academics/scientists (15.9%) and companies/business groups (13.3%). While they were the most popular sources used each year, government sources did see a downward trend from 43.5% in 2007, to 36.4% in 2008 and 33.3% in 2009). Academics/scientists were used 15.9% of the time in both 2007 and 2009, but their use doubled in 2008 to 30.3%. Both companies/business groups and environmental groups saw a dip in 2008 (14.5% in 2007 to 9.1% in 2008 to 13.3% in 2009 for companies business groups, 17.4% in 2007 to 9.1% in 2008 to 22.2% in 2009 for environmental groups). Figure 3.4 features a graph of the frequency of sources in the *Guardian* for each sample year.

Figure 3.4 Longitudinal Analysis of Sources used in the *Guardian*



Chapter Four: Discussion

As stated at the beginning of the results section, the differences and similarities in the coverage of climate change in the *New York Times* and the *Guardian* can largely be attributed to their location within the media systems model outlined by Hallin and Giles (2005) and Hallin and Mancini (2004). Hallin and Giles (2005) acknowledged a convergence of these three systems, which they attribute to the growing influence of the liberal model, the increasing “secularization” of European society and the move in Europe towards a more commercialized media, which can lead to increasing similarities in media coverage. However, even among media systems within the same model, many differences exist, and these differences can account for the results of this thesis.

Prevalent Frames and Frame Clusters

This thesis set out to examine which frames of climate change were most prevalent in the *New York Times*' and the *Guardian*'s coverage from January 1, 2007 to December 31, 2009.

RQ1: As defined in Table 2.1, what are the most prevalent frames of climate change in the *New York Times*' and the *Guardian*'s coverage?

A set of frames was developed based on the frames typology in Nisbet (2009) and Brossard (2004) (see Table 2.1). The *New York Times* and the *Guardian* shared three of their top four frames, as the international relations frame, the Pandora's Box frame, and

the conflict/strategy frame appeared among the top frames in both newspapers (see Table 3.1). The general similarities in the most prevalent frames would make sense, given that both England and the United States fall under Hallin and Giles' (2005) liberal model of media systems. However, as stated in the literature review, differences exist among different media systems within the same model, especially within the liberal model (Hallin and Mancini, 2004). This is evidenced in the order of prevalence of the top frames in each newspaper. For example, the most popular frame in the *New York Times*, the economic development/competitiveness frame, is not among the top four in the *Guardian* - it's the fifth most popular frame, along with the social progress frame. The most popular frame in the *Guardian* is the Pandora's Box frame, which is the third most popular frame in the *New York Times* (along with the international relations frame). Table 4.1 outlines the most popular frames in the *New York Times* and the *Guardian*.

Table 4.1

Most Popular Frames in the New York Times and the Guardian

<i>New York Times</i>	<i>Guardian</i>
the economic development/competitiveness frame (27.3%)	The Pandora's Box frame (24.2%)
The conflict/strategy frame (20.5%)	The international relations frame (18.2%)
The Pandora's Box frame (14.8%)	The new evidence frame (17.2%)
The international relations frame (14.8%)	The conflict strategy frame (14.1%)

Past research has found the journalistic norm of dramatization in the U.S. system leads to a focus on the strategic struggles between the main spokespersons, scientists, politicians, etc., instead of a thoughtful examination of scientific findings or public policies (Boykoff

and Boykoff, 2007). As a norm, dramatization leads to news stories that emphasize “crisis over continuity, the present over the past or the future, and conflicts” and “downplay complex policy information, the workings of government institutions, and the bases of power behind the central characters” (Bennett, 2002, p. 46). The prevalence of the conflict/strategy frame, as well as the Pandora’s Box frame tracks closely with this research.

This leads into the next research question, which was designed to determine the way in which these frames were presented, because how these frames are presented is as important as how prevalent they are.

RQ1a: How are these frames presented? Do certain frames tend to appear clustered together?

Half of the stories analyzed used more than one of the above frames. Many of these frames appeared clustered together. Table 4.2 outlines the most popular frame clusters in each newspaper.

Table 4.2***Most Popular Frame Clusters in the New York Times and the Guardian***

<i>New York Times</i>	<i>Guardian</i>
Economic development & Conflict/strategy (21.2%)	Pandora’s Box & New evidence (39.4%)
Economic development & International relations (21.2%)	Economic development & International relations (15.2%)
Pandora’s Box & New evidence (15.2%)	Conflict/strategy & International relations (12.1%)
Social progress & Economic development (12.1%)	Social progress & Economic development (9.1%)

The Pandora’s Box/new evidence frame cluster appeared 39.4% of the time in the *Guardian*. This is not surprising, given that both the Pandora’s Box and new evidence frames were among the most popular frames in the *Guardian*. Often, the Pandora’s Box frame was the primary frame, setting up the catastrophic nature of the findings of a new study, before getting into the detailed results of the study. For example, an article in the *Guardian* about a report from the Met Office, which stated that we could see a rise of 4 degrees Celsius by 2060 or 2070, framed the story in the headline and the lead as “catastrophic warming in our lifetimes” if global warming is left unchecked (Adam, 2009b). Additionally, it must be remembered that the British media system has a higher degree of state intervention and political parallelism than the U.S. media system. It would follow then, that British media outlets would be more likely to identify with a certain

political perspective, while U.S. media outlets would be more likely to remain “neutral” and present all sides of an issue.

Given that the *Guardian* is a liberal newspaper, it would make sense that the evidence that supported the existence of climate change and the dire effects would be more popular. The *New York Times* saw two frame clusters that were as popular as the one cluster in the *Guardian* (the economic development/conflict frames and the economic development/international relations frames, which both appeared 21.2% of the time). The economic development/conflict frames appeared together during most stories on possible climate change legislation, with an almost exclusive focus on the cap and trade portions of the bill. This focus on the conflict among politicians highlights the journalistic norm of dramatization. The conflict/strategy frame often appeared as the primary frame, as the articles initially focused on the conflicts that occurred between the two parties, before going on to address the economic issues of the legislation. For example, an article about the climate bill in 2009 headlined “Adding Something Everyone, House Leaders Gained a Climate Bill,” the first sentence focuses on how the bill came to pass:

As the most ambitious energy and climate change legislation ever introduced in Congress made its way to a floor vote last Friday, it grew fat with compromises, carve-outs, concessions and out-and-out gifts intended to win the votes of wavering lawmakers and in support of powerful industries. (Broder 2009b)

The centerpiece of the bill is not mentioned until halfway through the article.

The cluster of the economic development and the international relations frames was popular in both the *New York Times* and the *Guardian* though still more prevalent in the *New York Times*. In both papers, the primary frame focused on the United Nations

meeting or treaty, but then moved on to discuss the economic impacts of climate change on the developed vs. developing countries. This could be a function of the similarities between the two media systems, as well as the fact that this is the main discussion point among countries regarding climate change. So while the media system could have affected the coverage here, it might also just be a reflection of the issues.

Climate Change as Scientific Uncertainty

As noted above past research suggested the scientific uncertainty frame would be more prevalent in the *New York Times* than the *Guardian*. As stated in the literature review, Boykoff's study of U.S. television news coverage of climate change found the coverage of climate change contributed to an information bias by creating an appearance of scientific uncertainty related to climate change by diverging from the consensus view among climate scientists that anthropogenic climate change exists. The study found that by diverging from the consensus view among climate scientists that anthropogenic climate change exists, U.S. television news coverage contributed to an information bias by creating an appearance of uncertainty where virtually none exists. This idea of uncertainty surrounding climate science permeates the discourse in both the public and policy agendas.

Based on journalistic norms of dramatization, novelty, and balance, and the findings by Brossard, et. al. (2004), it was posited the coverage in the *New York Times* would be more event-driven, with more focus on scientific controversy and the negative effects of reducing greenhouse gas emissions. Therefore, these frames were analyzed to

determine if the controversy frame was used more frequently in one publication than the other:

RQ2: Is the frame of climate change as a scientific controversy more prevalent in the *New York Times* than in the *Guardian*?

While four stories in the *New York Times* and one story in the *Guardian* fell within the frame of scientific uncertainty (see Table 3.1), none questioned the existence of anthropogenic climate change. So while the *New York Times* did feature more scientific uncertainty frames than the *Guardian*, the frame did not factor significantly in either paper's coverage. This was evidenced in the lack of climate change skeptics found in both the *New York Times* and the *Guardian*. Not one single source in the *Guardian* could be categorized as a climate change skeptic, and only two sources in the *New York Times* could be categorized as a climate change skeptic. The vast majority of sources were either climate change proponents or neutral, while the *New York Times* featured 15 climate change acknowledgers and the *Guardian* featured five. This represents a change from past research (Boykoff and Boykoff 2004, Brossard 2004) and further research into why is needed, though the release of the IPCC 4th Assessment Report could be a major factor.

Sources

Brossard, et al. (2004) found the *New York Times* presented more sources and varied viewpoints than did *Le Monde*. Brossard et. al. (2004). Also tellingly, the researchers found industry sources (whose spokespersons tend to focus on the negative

consequences of reducing greenhouse gas emissions, such as effects on productivity) cited much more often in the *New York Times* than in *Le Monde*.

The study looked at which sources were used most often in each publication and how they were presented.

RQ3: What sources are most prevalent in the *New York Times* and the *Guardian's* coverage? How are these sources presented?

Past research suggested that the *New York Times* would draw from a larger variety of news sources, which indeed proved to be the case for individual articles. The *New York Times* cited 242 sources in 62 articles, averaging 3.9 sources per article, while the *Guardian* cited 147 sources in 55 articles, averaging 2.6 sources per article. However, as stated in the results section, the most popular groups of sources cited in both publications were government sources, academics/scientists, companies/business and environmental groups (see Table 3.3). These groups comprised 93.2% of the *Guardian's* sources and 86.3% of the *New York Times's* sources. So while the *New York Times* used more sources per article than the *Guardian*, they relied on the same groups of sources in a comparable fashion. Again, it should be noted that both publications come from the liberal media model, so similarities should be expected. The liberal media model could also explain the lack of reliance of both publications on unnamed experts/sources. The fact that the *New York Times* always used a name with sources, unless otherwise indicated as anonymous, while the *Guardian* often referred to a spokesperson for a company or government official without using their name, could be an indication of the higher degree of

journalistic professionalism seen in the United States and cited by Hallin and Giles (2005), Schudson (2001), and Hallin and Mancini (2004).

Active/Passive Actors

As Klein, et.al. (2009) found, reporters' use of quotations help draw attention to messages of dissent, conceptualizing the actors in the news as active, speaking directly through quotations, or passive, speaking indirectly through mention by the reporter.

RQ3a: Who are the active and passive actors in each?

In the articles analyzed, the *Guardian* used active actors much more frequently than the *New York Times*. One reason for this could be the norm of balance in the *New York Times*, where the New York Times uses passive quotes to ensure all sides of an issue are covered. However, when broken down into the top four source groups, the results become even more interesting. For the top source in each group, government sources, the publications used passive/active actors at approximately the same rate. Additionally, the most actively used sources in both publications were environmental groups. This could indicate the reporters were trying to give more weight to the environmental groups' messages by using them more actively, although it should be noted in the case of the *New York Times* the difference between government sources and environmental groups was only 3%.

Climate Change Proponents/Skeptics

The sources were also tracked for their views on climate change.

RQ3b: Who are the climate change proponents/skeptics?

It is not surprising, given the lack of scientific uncertainty as a frame in the *Guardian*, that there would also be no sources that could be classified as a climate change skeptic. It is also not surprising, given the few (four) articles with a frame of scientific uncertainty in the *New York Times*, that only two sources could be classified as a climate change skeptic. The interest in this research questions comes from the emergence the third climate change acknowledger category, which indicates a source that acknowledged the existence of anthropogenic climate change but not the importance/need to address it. This could indicate an acceptance on the climate skeptic side that they are losing the media war and a tactic to shift the debate.

However, it should be noted that while 58.8% of the total sources in the *New York Times* were classified as climate change proponents, 73.5% of the total sources in the *Guardian* were classified as climate change proponents. In the *New York Times*, 34.2% of the total sources were neutral, while 23.1% of the total *Guardian* sources were neutral. So, while the majority of sources in both newspapers were climate change proponents, the *New York Times* had less than the *Guardian*, and they also had more neutral sources than the *Guardian*. This could reflect the norm of balance in the *New York Times*. While the *New York Times* cited less climate change skeptics than past research indicates, the sources cited were roughly split in half between climate proponents and climate skeptics/acknowledgers/neutral, which may indicate a new sort of “bias by balance.”

Coverage change over time

As stated in the literature review, Stocking and Leonard (1990), pointed out the journalistic norm of novelty “allows persistent, and growing, environmental problems to

slide out of sight if there is nothing ‘new’ to report” (p. 40) in U.S. media, while Boykoff and Boykoff (2007) found in U.S. media that “dramatic events involving international personalities favor episodic (rather than thematic) framing” (p. 1196). Brossard et. al. (2004) found coverage of climate change in the *New York Times* was characterized by an up and down issue cycle. Thus, this study looked at changes in coverage in the *New York Times* and the *Guardian*, from 2007 to 2009.

RQ 4: Did frames/sources change over the sample period? Is there a correlation between these changes and specific events, such as the release of the IPCC’s Fourth Assessment Report?

While the *Guardian* coverage remained constant over time, the *New York Times* saw a significant drop in 2008. Considering the two main events related to climate change happened in 2007 (the release of the IPCC’s Fourth Assessment Report) and 2009 (the U.N. Copenhagen meeting), this supports the episodic journalism theory of U.S. media.

Both the *New York Times* and the *Guardian* saw an increase in the economic development frame from 2007 to 2009. Several factors could account for this. First, the global economic meltdown at the end of 2008 could account for the increased focus on economic issues, particularly energy costs, which relate to climate change. Additionally, the United Nations meeting in December 2009 increased focus on the debate between developed and developing countries on how both will address climate change while keeping energy costs down.

The new evidence frame in both the *Guardian* and the *New York Times* was used most during 2007, when the IPCC’s Fourth Assessment Report came out (see Figures 3.1, 3.2). This would make sense, given the importance of the IPCC report, though it must be

noted that this study did not include the prior year. Thus, it is impossible to know, within the parameters of this study, if this represents a downward trend in the new evidence frame, or if 2007 represented a spike compared to previous years. Given the findings of Stocking and Leonard (1990), Boykoff and Boykoff (2007), and Brossard et. al (2004), this could simple be the downward portion of a cycle related to the new evidence frame.

Accordingly, the international relations frame seemed to be cycling up during the period from 2007-2009. The international relations frame in both publications was at its highest during 2009, when the United Nation's major Copenhagen meeting occurred (see Figures 3.1, 3.2), indicating it is possible that this event was at the impetus of the coverage. A review of the sample articles supports this fact, as 8 of the 9 international relations frames in the *Guardian* and 6 of the 8 frames in the *New York Times* sample were either about the meeting or negotiations leading up to the meeting.

Coverage during the Bush Administration vs. Obama Administration

Finally, addressing the journalistic norm of authority-order, this thesis examined a time period that covered two U.S. presidential administrations.

RQ5: Is there a difference in the frames and/or sources used during the Bush vs. Obama Administrations? If so, what are these differences?

As stated in the literature review, Cook (2007) described how modern American presidents have a powerful ability to set the media agenda, reflecting the authority-order journalistic norm outlined by Boykoff and Boykoff (2007).

The international relations frame increased in the *New York Times* from the Bush Administration (2007-2008) to the Obama administration (2009) (see Figure 3.1). While

the actual amount of the coverage is likely attributed to the U.N. Copenhagen meeting, a difference in the tone of the coverage is likely related to the differing attitudes between the Bush and Obama Administrations on climate change.

For example, one story in the *New York Times* from April 28, 2009 expressed optimism for a new climate change treaty:

After eight year largely on the sidelines of the international policy debate on climate change, the United States is prepared to lead negotiations toward a new global warming treaty, Secretary of State Hillary Rodham Clinton said Monday.... Mrs. Clinton said there was no longer any question that growing atmospheric concentrations of carbon dioxide and other gases were causing a warming of the planet, with potentially catastrophic results. She said global climate change posed environmental, economic, health and security challenges that must be addressed by individual countries and by the community of nations (Broder, A16).

Whereas another article from July 10, 2008, expressed frustration with Bush:

The United States appeared to regain some credibility at the meetings, but some environmentalist still found an opportunity to criticize President Bush. David. G. Victor, and expert on climate policy at Stanford University, said that the power of any American president was limited, and that another barrier to cutting emissions was Congress.

“Nearly every government is looking beyond Bush, and while they are hopeful that the next president will surely be more instructive on this issue, they don’t know what the president can really bring to the table,” he said. “It is hard for the U.S. president to negotiate with strength when his ability to offer commitments hinges on national legislation that he does not control (Revkin, A10).

While the blame conflict/strategy frame found in the Guardian related to international relations was largely absent in the *New York Times*, where it did surface was largely during discussions of the Bush Administration’s climate change policies.

While it is more likely that events such as the IPCC’s third assessment report and the U.N. climate meetings affected what was covered in the *New York Times* more than

the U.S. presidential administration, the tone of the coverage related to the politics of climate change seemed to be affected. This shift in tone did not seem to occur in the *Guardian*. So while this research found the *New York Times* and the *Guardian* shared three of their top four frames, as the international relations frame, the Pandora's Box frame, and the conflict/strategy frame (three of the top four frames in each newspaper), the order of the prevalence of these frames was different, as was the ways in which each frame was presented. This was also true for sources in both publications. This dovetails with past research that indicates that the media systems in both countries are liberal models, but they do retain unique characteristics. Additionally, coverage in both newspapers could be attributed to journalistic norms, such as the focus on the conflict/strategy frame in the *New York Times*, as well as the issues related to climate change, such as the focus on economic development in both media outlets. This research supports the argument that climate change coverage in the United States is cyclical and event-driven, while British media reflects the cyclical, event-drive liberal media model while also reflecting the more issues-focused European model. Where this thesis disagrees with past research is the absence of the scientific uncertainty frame in the *New York Times*. No stories in the *New York Times* questioned the existence of climate change, and miniscule amount of sources were climate change skeptics. These observances will be discussed in more detail in the conclusion.

Chapter Five: Summary

This study found both similarities and differences in the climate change coverage of the *New York Times* and the *Guardian*. Perhaps the most noticeable departure from previous research is the lack of the scientific uncertainty frame, especially in the *New York Times*. Further research is needed to determine whether this could indicate a true shift in the coverage of climate change in the United States, or if is merely part of the cyclical nature of U.S. journalism outlined in Brossard, et. al (2004). Brossard, et. al. found that coverage in *Le Monde* was steadier, driven more by political issues, with articles reviewing the issues in-depth, rather than merely covering the events. The study found the coverage in the *New York Times* to be more cyclical, meaning an up and down cycle of coverage, where climate change was covered during a “climate event” (i.e. the release of a report, a natural disaster, a bill before Congress), but then coverage dropped off when nothing occurred to drive it.

This research supports the argument that climate change coverage in the United States is cyclical and event-driven, while British media reflects the cyclical, event-driven liberal media model while also reflecting the more issues-focused European model. For the *Guardian*, the cycle of the frames indicates that while the amount of climate change coverage in the *Guardian* did not significantly change over time, the focus of the coverage changed, and these changes seem to be related to the major events driving the

news. For the *New York Times*, these events affected not only what was covered, but the amount of climate change coverage, which can be problematic in the quest for a deeper understanding of the issue. When the coverage of climate change is solely event-driven, this can lead to a cycle where the issue falls off the public agenda. Then, when the next event occurs, the coverage remains shallow, focused on the event, without providing an in-depth discussion of causes, solutions, etc.

The use of the conflict/strategy frame in both publications is also of interest (and potentially troublesome). The *Guardian* used the international relations and conflict/strategy frames together, often discussing U.N. negotiations where the United States was central to the conflict or referring to political struggles within the United States. It is interesting to note the conflict/strategy frame in the *Guardian* mostly included stories about the United States. This echoes the popularity of the conflict/strategy frame in the *New York Times* and could reflect the journalistic norms of the United States in the *Guardian's* coverage of U.S. events, especially the popularity of the conflict/strategy. It also could reflect the controversial nature of climate change in the United States (or the perceived U.S. controversy). Conversely, the *New York Times* only used the conflict/strategy and international relations frame together once - during discussions of the Bush Administration's climate change policies. The authority-order norm would account for this – the coverage in the *New York Times* accurately reflected each administration's international policy on climate change. The coverage of climate change in the United States seemed to largely depend on the authority-order. However, while the *New York Times'* coverage of Obama was more favorable than that of Bush, the

Guardian's coverage remained critical of both administrations (though a straight comparison of the authority-order norm in the *Guardian* could not be assessed in this study, as there was no change in the British Administration). Again, this points to the coverage in the *New York Times* as more cyclical and based on outside events, whereas the *Guardian* remained focused on the issues related to climate change and how each administration addressed them. Given the “watchdog” role the U.S. media encompasses, a lack of truly critical coverage of any government entity (as opposed to a focus on the conflict/strategy frame) is concerning.

In the *New York Times*, the conflict strategy frame was used most often with the economic development frame, which makes sense considering they were the two most popular frames in the *New York Times*. While the scientific uncertainty frame was almost non-existent in the *New York Times*, the focus on the conflict/strategy frame and the economic development frame in reality produces more of the same episodic journalism. While the themes did seem to shift from “does it exist?” to “what can be done about it?”, the questions actually looked at in the *New York Times* were “whose solutions are winning?” and “who’s going to pay for it?” A reader of the *New York Times* would not garner any more understanding of the issue from these questions than he would from the “does it exist?” question. This horse-race mentality has long been a criticism of U.S. media and rightly so. Especially when covering political issues, such as climate change legislation, the conflict/strategy frame and journalistic norms of dramatization and novelty in the U.S. media prevent a deeper understanding of the issue.

The increase of the economic development frame in both the publications is likely driven by outside events. Both saw a jump in 2008, which one might expect was spurred by the world-wide economic collapse. However, the *Guardian* saw a steady increase of about 10% from year-to-year; whereas the *New York Times* saw an approximate 20% increase from 2007 to 2008, with a leveling off in 2009. This could be a reflection of more measured, issue-oriented reporting by the *Guardian*, incorporating the economic development frame slowly as these issues became more relevant to the debate. The economic development frame in the *New York Times* jumped from the third most popular frame in 2007 to the most popular frame in 2008 and 2009. This could be reflection of an event-based general media focus on economic issues driven by the event of the economic collapse. These episodic events shifted the media's coverage of themes. The newspapers are still focusing on events, a criticism of main stream media, but the events shift the themes in the paper and the frames. Just as with the horse-race mentality, this type of event-driven coverage, which again is driven by the U.S. journalistic norms of dramatization and novelty, can lead to a shallower interpretation of the issues by the media and therefore impede a deeper understanding of the issues by the public. The economic development frame often accompanied the international relations frame. For example, the reporting on meetings such as the United Nations Copenhagen meeting in 2009 focused on the costs of climate change and how much money the developed nations would commit to helping developing nations address climate issues. While the costs of climate change and climate adaptation are an important issue related to climate change, it is not the only issue (nor was it likely the only issue discussed at the meeting). The focus

on costs and economies, instead of including information on innovations and social progress issues related to climate change, can give the reader of the *New York Times*, and to some extent the *Guardian*, a skewed vision of these meeting and the international issues related to climate change.

While the new evidence frame dropped steadily in both publications from 2007 to 2009, the use of academic sources increased from 2007 to 2008 then dropped significantly in 2009. While the overall decrease in use of academic sources and the new evidence frame make sense, the increase in 2008 in both publications is most likely an anomaly. This would indicate that these sources were used more in other frames. In the *Guardian*, the only frame that saw a similar increase followed by a dramatic decrease is the Pandora's Box frame. In the *New York Times*, two frames (the social progress frame and the scientific background frame) showed similar upticks, though to a much lesser degree. This correlation between the Pandora's Box frame and the academic/scientists sources in the *Guardian* is not surprising; given the close relationship between the two frames (it is the most popular frame cluster in the *Guardian*). This could indicate that even when the new evidence frame is not primary in a story, the "climate change as a catastrophe" theme is still being used through the use of sources. This could reflect the political parallelism of British media.

Political parallelism could also explain the high use of actively quoted government sources in the *Guardian*, though the high use of actively quoted government sources in the *New York Times* is likely a reflection of the authority-order journalistic norm. The difference between the two reflects the media systems in which each media

outlet exists. Because the *Guardian* is likely to be more aligned with a political party, it is likely that political parallelism is responsible for its high use of actively quoted government sources. Because the norm of balance does not allow the *New York Times* to align with a particular party, the high use of government sources is likely to be the party in power, reflecting the authority-order norm. The authority-order norm is problematic because it can lead to the government setting the media agenda (and therefore the public agenda). While it might not lead to the media simply parroting the talking points of those in authority (as some argue happened during the run up to the war in Iraq), it does allow the government to determine what is discussed. This could be changing, as the public consumption of media becomes more segmented, it stands to follow that it will be harder and harder for “the media” to set the public agenda.

However, the *Guardian* was much more likely to actively quote its sources overall than the *New York Times*. One explanation for this could be the U.S. journalistic norm of balance. Perhaps the passively quoted sources are a function of the reporter either trying to include all sides or include more sources in the story. By trying to achieve this notion of balance, the *New York Times* uncritically quotes sources to include all sides or to include a number of different sources, which gives the illusion of balance. This adds another dimension to the concept of balance in climate change coverage. In passively quoting sources, the reporter could be, either intentionally or unintentionally, marginalizing the views of that source. This could in turn affect the views of the reader of that source or that viewpoint. It produces another wrinkle in the often debated concept of balance in journalism in the United States. The *New York Times* definitely gave more

space to climate change skeptics, acknowledgers and even neutral sources than did the *Guardian*. As discussed above, this focus on neutral sources may be a new form of bias by balance, as the *New York Times* moves away from using climate skeptics as sources, but increases the use of neutral sources over pro-climate change sources in effort to provide balanced coverage.

While scientific research has largely agreed on the issue of the anthropogenic causes of climate change for some time, the IPCC 4th Assessment Report was the most definitive account of this agreement to date. According to this thesis, it would seem the arguments about climate change in the *New York Times* have largely “caught up” to those of the *Guardian*, focusing more on arguments about solutions than arguments about causes. The emergence of the climate change acknowledger category in the climate change proponent/skeptic research question could indicate an acceptance on the climate skeptic side that they are losing the media war and a tactic to shift the debate. While we might like to think this will lead to a shift in coverage that is more issue-focused, it is more likely that the journalistic norms of dramatization and novelty will drive coverage. If the popularity of the scientific uncertainty frame is waning, the debate will likely shift to other aspects of climate change. This could also simply be a phase in the cyclical cycle in which U.S. media tend to cover scientific issues, similar to the swing pendulum on a clock. The coverage will swing towards the scientific uncertainty frame (or as some might call it, more “balanced” coverage), and then back again. Though the topic may not be considered “closed” by the media for a very long time, if ever, due to the intricacies of climate research. One wonders if the issue of the existence of climate will ever be

considered as “closed” by the U.S. media as other issues, such as smoking. Regardless, controversy, whether scientific, political or economic, will remain a major part of climate change coverage in the *New York Times* and to a lesser extent the *Guardian*. As noted above, instead of analysis of which solutions would make the most sense, the debate will likely move to whether Congress will pass a bill, or whether or not the United States will sign a treaty, or how to pay for solutions. Also, if no events are happening to spur coverage, it will drop off the media and public agendas in the United States.

Limitations and Future Research

This thesis examined the print editions of the *New York Times* and the *Guardian* based on past research studies. However, this coverage could be very different from the online coverage in each newspaper depending on the various audiences and their use of the two mediums. Especially interesting would be an analysis comparing the same journalist (i.e. comparing Andrew Revkin’s *New York Times* print articles with his online blog). Additionally, the scope of this research was limited to only two newspapers, both considered “left-leaning” papers in their respective media systems. To determine an accurate portrayal of climate change in both the U.S. and England, a sampling of a broad range of publication from each country would be advisable. Anecdotally, the rise of the Tea Party in the United States after the conclusion of this study may have led to a resurgence of the scientific uncertainty frame – further research that includes the 2010 mid-term election coverage would indicate whether or not this is the case.

News is the reporting of current events, so by definition it must be somewhat event-driven. However, media coverage that is solely driven by events, without seeking

out a deeper understanding of the issues, can be problematic, as it leads to a public that is not as fully informed as it could be. Additionally, when the coverage of climate change is solely event-driven, this can lead to a cycle where the issue falls off the public agenda. Then, when the next event occurs, the coverage remains shallow, focused on the event, without providing an in-depth discussion of causes, solutions. This research supports the argument that climate change coverage in the United States is cyclical and event-driven, while British media reflects the cyclical, event-driven liberal media model while also reflecting the more issues-focused European model. However, it shows some progress in U.S. media coverage of climate change, especially with regards to the framing of climate change as a scientific uncertainty, assuming this is a true shift in U.S. media coverage and not simply part of the issue cycle.

References

- Adam, D. (2007, May 5). UN scientists war time is running out to tackle global warming: Scientists say eight years left to avoid worst effects: Panel urges governments to act immediately. *Guardian*, p. 12.
- Adam, D. (2009a, September 16). Front: US rift with Europe over climate deal: Exclusive: Dispute over treaty rules as UN warns talks not making progress: US rift with Europe over climate deal. *Guardian*, p.1.
- Adam, D. (2009b, September 28). Front: Catastrophic warming in our lifetime – Met Office. *Guardian*, p. 1.
- Adam, D. & Vidal, J. (2008, April 14). Rich states failing to lead on emissions, says UN climate chief: Developing world ‘dismayed’ by lack of leadership; new deal to replace Kyoto protocol under threat. *Guardian*, p. 1.
- AP. (2007, March 21). Edward’s energy plan proposes a cap on heat-trapping gases. *New York Times*, p. A18.
- Barringer, F. & Revkin, A.C. (2007, January 18). Measures on global warming move to spotlight in the new congress. *New York Times*, p. A24.
- Bennett, W.L. (2002). *News: The Politics of Illusion*. New York: Longman.
- Broder, J.M. (2007, July 11). Compromise measure aims to limit global warming. *New York Times*, A14.
- Broder, J.M. (2009a, April 28). Obama, who vowed rapid action on climate change, turns more cautious. *New York Times*, p. A16.
- Broder, J.M. (2009b, July 1). Adding something for everyone, House leaders gained a climate bill. *New York Times*, p. A20.
- Broder, J.M. & Revkin, A.C. (2008, December 16). Hard task for new team on energy and climate. *New York Times*, p. A24.
- Brossard, D., Shanahan, J. & McComas, K. (2004). Are issue-cycles culturally constructed? A comparison of French and American coverage of global climate change. *Mass Communication & Society*, 7(3), 359-377.
- Boykoff, M.T. (2008). Lost in translation? United States television news coverage of anthropogenic climate change, 1995—2004. *Climate Change*, 86(1/2), 1-11.

- Boykoff, M.T. & Boykoff, J.M. (2004). Bias as balance: Global warming and the U.S. Prestige Press. *Global Environmental Change*, 14, 125–136.
- Boykoff, M.T. & Boykoff, J.M. (2007). Climate change and journalistic norms: A case-study of U.S. mass-media coverage. *Geoforum*, 38, 1190-1204.
- Christie, T.B. (2006). Framing rationale for the Iraq War: The interaction of public support with the mass media and public policy agendas. *International Communication Gazette*, 68(5-6), 519-532.
- Cook, T.E. (2007). The uses of news: Theory and (presidential) practice. In D.A. Graber (Ed.), *Media Power in Politics* (pp. 231-242). Washington, DC: CQ Press.
- Dean, C. (2008, March 12). Global-warming threat is seen for coastal areas. *New York Times*, p. A21.
- Entman, R. M. (1989). *Democracy Without Citizens: Media and the Decay of American Politics*. New York and Oxford: Oxford University Press.
- Entman, R.M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 44(4), 51-8.
- Fahmy, S. & Kim, D. (2008). Picturing the Iraq War: Constructing the Image of War in the British and U.S. Press. *International Communication Gazette*, 70(6), 443-462.
- Hallin, D.C., & Giles, R. (2005). Presses and democracies. In G. Overholser & K. H. Jamieson (Eds.), *The Press* (pp. 4-16). New York, NY: Oxford University Press.
- Hallin, D.C., & Mancini, P. (2004). *Comparing Media Systems: Three Models of Media and Politics*. New York: Cambridge University.
- Harris, R. (2006, July 20). Global warming a hot topic in congressional hearing. *National Public Radio*, Accessed at <http://www.npr.org> on May 30, 2009.
- Houghton J.T., et al (Eds). (2001). *Climate Change 2001: The Scientific Basis – Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge, UK: Cambridge University Press.
- Iyengar, S. (1991). *Is Anyone Responsible?: How Television Frames Political Issues*. Chicago: University of Chicago Press.
- Kellstadt, P.M., et al. (2008). Personal efficacy, the information environment, and attitudes toward global warming and climate change in the United States. *Risk Analysis: An International Journal*, 28:1, 113-126.

- Klein, A.G., Byerly, C.M., & McEachern, T.M. (2009). Counterframing public dissent: An analysis of antiwar coverage in the U.S. media. *Critical Studies in Media Communication*, 26(4), 331-350.
- Krauss, C. & Mouawad, J. (2009, February 12). Oil industry is stressing cooperation on climate. *New York Times*, B3.
- MacFarquhar, N. (2009, September 2). U.N.'s cost estimate jumps for poor nation power needs. *New York Times*, p. A6.
- Maher, T.M. (2001). Framing: An emerging paradigm or a phase of agenda setting? In S. D. Reese, O. H. Gandy, Jr., & A. E. Grant (Eds.), *Framing Public Life: Perspectives on Media and our Understanding of the Social World* (pp. 67-81). Mahwah, NJ: Lawrence Erlbaum Associates.
- McCombs, M. (2005). A look at agenda-setting: Past, present and future. *Journalism Studies*, 6, 543-557.
- McCombs, M. & Ghanem, S. I. (2001). The convergence of agenda setting and framing. In S. D. Reese, O. H. Gandy, Jr., & A. E. Grant (Eds.), *Framing Public Life: Perspectives on Media and our Understanding of the Social World* (pp. 83-94). Mahwah, NJ: Lawrence Erlbaum Associates.
- McCombs, M.E. & Shaw, D.L. (1972). The agenda-setting function of mass media. *Public Opinion Quarterly*, 36, 176-87.
- McCright, A. & Dunlap, R. (2003). Defeating Kyoto: the conservative movement's impact on U.S. climate change policy. *Social Problems*, 50, 348-373.
- McMahon, B. (2008, July 7). Climate change report like a disaster novel, says Australia minister: Scientists predict 10-fold increase in heatwaves: Greenhouse gasses blamed for half of rainfall decrease. *Guardian*, International, p. 15.
- Miller, M.M. & Riechert, B.P. (2001). The spiral of opportunity and frame resonance: Mapping the issue cycle in news and public discourse. In S. D. Reese, O. H. Gandy, Jr., & A. E. Grant (Eds.), *Framing Public Life: Perspectives on Media and our Understanding of the Social World* (pp. 107-122). Mahwah, NJ: Lawrence Erlbaum Associates.
- Nelkin, D. (1995). *Selling Science: How the Press Covers Science and Technology*. New York: W.H. Freeman.
- Nisbet, M.C. (2009). Communicating climate change: Why frames matter in public engagement. *Environment Magazine*, 51(2), 13-23.

- Oreskes, N. (2004). Beyond the ivory tower: The scientific consensus on climate change. *Science*, 306(5702), p. 1686.
- Ravi, N. (2005). Looking beyond flawed journalism: How national interests, patriotism, and cultural values shaped the coverage of the Iraq War. *Harvard International Journal of Press/Politics*, 10(1), 45-62.
- Revkin, A.C. (2008). After applause dies down, global warming talks leave few concrete goals. *New York Times*, July 10, p. A10.
- Revkin, A.C. (2009). Environmental issues slide in poll of public's concerns. *New York Times*, January 23, p. A13.
- Rogers, E.M. & Dearing, J.W. (2007). Agenda-setting research: Where has it been, where is it going?" In D.A. Graber (Ed.), *Media Power in Politics* (pp. 80-97). Washington, DC: CQ Press.
- Scott, A.O. (2006). Warning of calamities and hoping for a change in 'An Inconvenient Truth', *New York Times*, May 24. Accessed at <http://moves.nytimes.com> on February 22, 2010.
- Schmeier, Q. (2007). Climate change 2007: What we don't know about climate change. *Nature*, 445(7128), 580-581.
- Schudson, M. (2001). The objectivity norm in American journalism. *Journalism*, 2(2), 149-170.
- Starr, P. (2004). *The Creation of the Media: Political Origins of Modern Communications*. New York: Basic Books.
- Stocking, H. & Leonard, J.P. (1990). The greening of the media. *Columbia Journalism Review*, 37-44.
- Vidal, J., Stratton, A., & Goldenberg, S. (2009, November 6). Countdown to Copenhagen: No climate deal likely for up to a year, negotiators admit. *Guardian*, p. 1.