PUBLIC OPINION IN CONTEXT: A MULTILEVEL MODEL OF MEDIA EFFECTS
ON PERCEPTIONS OF PUBLIC OPINION AND POLITICAL BEHAVIOR

DISSERTATION

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By

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ABSTRACT

Individuals do not live in an environment free of social and structural influences. Communication theorists have called for an assessment of multiple levels of analysis in order to build theory—in particular, media-effects theory—yet few have heeded that call and many continue to examine only micro- or macro-level effects or study both at the same level of analysis. This study will examine overall media effects on individual perceptions and behavior in a presidential campaign. An examination of such influences as media context can provide deeper theoretical insights into the analysis of media effects, and perceptual processes such as the persuasive press inference, false consensus, and social projection.

This research addresses the relevance of context to the study of media effects on individual cognitions—specifically, perceptions of public opinion—and political behavior. I argue that citizens are variably influenced by information flow depending on their physical location within a media market. This approach applies advanced methodology in order to tap into previously unelaborated relationships. The 2004 American National Election Studies (ANES) face-to-face pre- and post-election surveys were utilized to explore these relationships. I included geographic data in order to place individuals within Designated Market Areas (DMAs). I then conducted a computerized
content analysis of newspaper coverage in the communities of respondents from two weeks before the survey was administered, September 7, to the last day the survey was administered, November 1, 2004. Cross-level relationships among the contextual (content) and individual variables from the survey were assessed using multilevel modeling.

Results showed that perceived public opinion varied significantly across media markets, and newspaper use as well as personal candidate preference had a significant effect on the likelihood of perceiving Kerry to be the state-winning candidate. The second model, predicting political behavior, revealed that newspaper use had a significant effect on rates of political participation, as has been supported in other research. Implications for the study of media content within a multilevel model and media-effects theory are discussed. Interpretations of the results are provided, along with limitations of the present study and suggestions for future research.
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A particularly relevant issue for communication scholars is that communication phenomena exist within, between, and across levels of analysis (Berger & Chaffee, 1987; McLeod, Pan, & Rucinski, 1995; Paek, Yoon, & Shah, 2005; Pan & McLeod, 1991; Price, 1988; Price & Roberts, 1987). This is especially true in scholarly research on public opinion. Although this idea has been important historically, only recent advances in survey methodology and analysis have led to a concern with randomized differences associated with place through representative sampling procedures (Books & Prysby, 1991). Such randomization is important for demonstrating generalizability of the survey by reducing “error” associated with some place-specific idiosyncrasies, but it risks producing spuriously significant results that may be due to another level of analysis (Paek, et al., 2005).

As Blumer (1948) observed in his treatise on public opinion and polling, public opinion must be recognized as existing within a social framework. He urged researchers to examine this framework in order to understand how respondents develop opinions. Price (1988) further encouraged scholars to assess the media as the central mechanism
linking separate members of mass society. McLeod, Pan, and Rucinski (1995) clarified these arguments by stating that “it is essential to develop cross-level theories,” if we are to understand public opinion processes (p. 76). By couching this research in “context,” I will demonstrate that the examination of a contextual level of analysis—and cross-level interactions between individuals and context—can advance both theory and methodology in mass communication research. Specifically, I will discuss how such an approach can be applied to a political campaign in order to unravel effects of media content at the contextual level on perceptions and political behavior at the individual level. Such an approach can add to existing theoretical work on the persuasive press inference (Gunther, 1998), false consensus (Ross, et al., 1977), and social projection (Mullen, et al., 1985), as well as media effects on public opinion in general (McLeod, et al., 1995).

Contextual and multilevel analyses permit scholars to examine such effects within a social framework. The present research aims to enhance our current understanding of media effects by placing individuals in a “media context” and assessing both cognitive and behavioral effects of media as they vary across those contexts. Eight hypotheses are proposed, predicting individual perceived state-winning presidential candidate as well as political participation using multilevel modeling. The hypotheses first propose that there will be significant differences between media contexts in these outcome variables. I then test whether the inclusion of individual variables—such as personal candidate preference—and media content—via the relative amount of candidate mentions—are significant predictors of perceived winning candidate and political participation.
CHAPTER 2

THEORETICAL FRAMEWORK

What Influences Perceptions of Public Opinion and Political Participation at the Individual Level?

Before explicating how contextual data can enhance the theoretical understanding of media effects on perceptions of public opinion and political participation, it is necessary to consider the vast amount of research that has been conducted on these outcomes at the individual level. A wide array of research has demonstrated that both news media use and content have effects on perceptions of public opinion and social reality (Christen & Gunther, 2003; Davison, 1983; Fields & Schuman, 1976; Gunther, 1998; Gunther & Storey, 2003; Mutz, 1998; Mutz & Soss, 1997; Noelle-Neumann, 1999). Research has also demonstrated that individuals do indeed perceive the climate of opinion from the news media (e.g., Gunther, 1998; Mutz, 1989). Similarly, news media use has been found to significantly predict political participation (e.g., Eveland & Scheufele, 2000; McLeod, Scheufele, & Moy, 1999; Moy, et al., 2004). What has not been explored is whether these perceptions and political behavior differ by media market, where both news coverage and actual climate of opinion may vary.
The two dependent variables in this study are perceptions of public opinion (or perceptions of social reality) and political participation. These are divided into “perceptual” and “behavioral” outcomes. Following is (1) a theoretical framework for studying these variables that suggests social reality is constructed through informational stimuli in the environment, and (2) a discussion of how contextual data can enhance current theory and methodology in the area.

Media and Interpersonal Communication Effects

For many political issues, media serve as the primary source of information for most people (Books & Prysby, 1991; Books & Prysby, 1995; Christen & Gunther, 2003; Huckfeldt & Sprague, 1995; Mutz, 1989) and the incentive for obtaining information is provided by stimuli from the external political environment (Huckfeldt & Sprague, 1995). Media also expose individuals to more diverse viewpoints than interpersonal discussion because audiences tend to be more comfortable with conflict in a mediated setting (Mutz & Martin, 2001). While this is certainly attributable in part to the nature of the medium, Mutz and Martin (2001) asserted that the primary reason people glean more diverse information from media is because the great desire to avoid conflict in interpersonal situations.

Because of this reliance on media for political information, and the diversity of viewpoints found therein, media contexts could expose people in the aggregate to the “actual” climate of opinion more so than interpersonal discussions. In fact, Shamir (1995) found that respondents, when asked about their main source for information on opinion distributions or future opinion trends, did not cite primary social groups. He concluded
that, in research on public opinion perceptions, “the key is the nature of the information environment. It varies across time and settings, and it is this variation that we suggest largely determines the relative weight of social versus other mechanisms in structuring public opinion trends” (p. 44).

Despite these assertions about the influence of the information environment, a focus on interpersonal discussion has guided much contextual research (Books & Prysby, 1991, 1999; Huckfeldt & Sprague, 1995; Rhodebeck, 1995). Yet individuals residing in different media contexts may be exposed to and incentivized to obtain information about different issues depending, in at least some part, on their location. Because media content can also differ by context as a result of campaign activity, emphasis on different issues in local news, and provision of types of content such as relative attention to one candidate over another, contextual effects are likely to emerge.

In fact, in the 2004 presidential election, media coverage of polls varied widely in their predictions of the winner of the race (Patterson, 2005). Some polls showed Bush and Kerry in a dead heat; others revealed Bush as the winner; and still others predicted Kerry would win (Patterson, 2005). Journalists likely reported on and interpreted these polls in varying ways, suggesting that media content might have varied depending on media context. Since such content can vary by context, and has also been shown to influence perceptions of social reality, the perspective outlined throughout this dissertation may best be described as “the social construction of reality” (Eveland & Glynn, in press; Glynn, Ostman & McDonald, 1995).
The Social Construction of Reality

Social perception is generally applied in one of two senses: the “construction of social reality” or the “social construction of reality.” The former describes the view of the world held cognitively by individuals, while the latter illustrates the system-level social “determination” of perception (Eveland & Glynn, in press; Glynn, et al., 1995). Although the term “determination” has some negative connotations (implying a direct causal mechanism without contingent conditions), I am adopting the “social construction of reality” perspective in favor of the individual perception perspective (the construction of social reality).

There are two main reasons for favoring the social construction of reality approach in the present study. First, most of the current work in public opinion research focuses on individuals’ perceptions of the social environment and how these perceptions affect individual attitudes or opinions (Glynn, et al., 1995). In the interest of advancing the literature, I am proposing a shift from this perspective to the more constructivist perspective, because it takes individual characteristics into account while also assessing cross-level influences from context. Second, a main premise of this research is that media contexts differ by location in a political campaign, and the effects of these social contexts on individually held perceptions of social reality are moderated by individual media use and personal candidate preference. The analyses associated with this expectation can add to the theoretical work on social projection and false consensus (described in more detail below). By incorporating media as a contextual variable in this construction of social reality, scholars might gain a better understanding of just how perceptions are influenced by media. That is, a comparison of effects across media contexts might enlighten research.
on media effects and uses, providing detail specific to types of media content. This would not only add to the public opinion literature on perceptions of social reality, but could also serve as a means for understanding media effects in general.

Defining Social Reality Perceptions

Social reality perceptions are defined broadly as individual cognitions about social reality, thus placing them at the individual level. Perceptions of public opinion in particular can be defined as an individual’s “awareness, assessment or sense of relevant others’ opinions” (Glynn, et al. 1995, p. 253). Several theories and hypotheses have been proposed to elaborate on the relationship between individual perceptions and the actual climate of opinion (see Eveland, 2002; Glynn, et al., 1995 for reviews). I will briefly define several of the perceptual effects that have been studied in previous literature that are relevant to the present research. Specifically, I aim to examine how contextual data enhance our understanding of such perceptual effects as described in the theories of false consensus, social projection, and the persuasive press inference.

False consensus refers to the individual tendency to see one’s own behaviors and opinions as normal and others as deviant or inappropriate (Glynn, et al., 1995). This effect generally describes the perception among group members about the others in their group or with whom they have similar attributes (Ross, et al., 1977). This phenomenon is best described as the exaggeration of the prominence of one’s own opinions and was established by Ross, et al. (1977) in a study that asked students to walk around campus for 30 minutes wearing a sign that read “Repent.” Those who agreed to wear the sign estimated that the majority of other students would agree, whereas those who refused estimated that only a small minority would agree. Hypothesis tests have consistently
demonstrated this effect to be highly statistically significant with a moderate effect size (see Mullen, et al., 1985; Shamir & Shakiki, 2002). The opposite phenomenon is “false uniqueness,” in which people underestimate support for their own opinions (Shamir & Shakiki, 2002; Suls & Wan, 1987).

Research has demonstrated that similar processes are at work in these estimations of support when respondents are asked about the media. For example, when partisans see unbiased coverage of some event or issue, they often perceive media as an out-group whose expressions are biased against their own views (Vallone, Ross, & Lepper, 1985). This “hostile-media phenomenon” often results from selective perception or selective recollection of media content (Giner-Sorolla & Chaiken, 1994). However, research on false consensus and false uniqueness that includes the actual media context as a predictor might be able to shed light on how informational sources affect these processes. Much of the present work on false consensus focuses on individual characteristics or personality as predictors (e.g., Strube & Rahimi, 2006), but the inclusion of media context can further enhance our understanding of the mechanisms that drive these effects.

Social projection refers to individuals’ reference to self-reactions in order to describe others. The phenomenon has been found to be quite robust and generates moderate to large effect sizes (Mullen, et al. 1985; Robbins & Krueger 2005) although projection effects differ in magnitude based upon the reference group (Shamir & Shakiki, 2002). Recent research has found that projection effects can be offset when media and information context is taken into account (Gunther & Christen, 2002). This suggests that the information environment might indeed play an important role in understanding perception effects such as social projection.
Finally, the *persuasive press inference* is a process-oriented approach to perceptions of both the public opinion climate and of media coverage. It assumes that people (1) scan the media environment for issues of interest, (2) form impressions about the valence of media coverage, (3) infer that the news resembles what they have personally observed, (4) conclude that this media coverage influences others, and (5) perceive public opinion as corresponding to the perceived news slant (Gunther, 1998). Research on this hypothesis, similar to the other approaches, has not systematically assessed media content in concert with individual perceptions. The hypothesis has been tested with experiments that manipulate news media coverage, or surveys with self-reports of media use (Christen & Gunther, 2003; Gunther, 1998; Gunther & Storey, 2003). But how does this translate into the real world when actual media contexts are taken into account?

Thus, even though media effects are claimed in each of these research areas, we have not seen a contextual model that places media content at a macro level and perceptions of media at an individual level. Might other effects reveal themselves when we place these perceptions in such a cross-level framework? As Mutz (1989) asserted, media do not need to be universally consonant or even personally persuasive in order to influence perceptions.

Because much of this work on perceptions originated in the fields of psychology and social psychology, the primary impetus for research has been discovering cognitive mechanisms that produce perceptions, and misperceptions, of social reality. However, individual perceptions are influenced by other mechanisms as well, namely media contexts. For example, research has demonstrated that media have an “impersonal
influence,” impacting social perceptions of an issue (e.g., Mutz, 1992; Mutz, 1998). Other research has shown that when taking media content into account, people do not always simply project their own opinions on others (Christen & Gunther, 2003).

Moreover, since communication is a variable field, rather than a level field (Paisley, 1984; Lang, 1994), the scholarly endeavors therein inherently have more capability for making cross-level inferences. Yet, Paisley (1984) argued that variable fields are essentially reductionist, and Lang, et al. (2003) suggest that this is true in communication, such that scholars have begun to focus more on cognitive processes. I argue here that communication can look at both individual and contextual levels, and that there is value in moving beyond cognitive explanations for perceptions by adding context as an additional mechanism for influence because it is in context where communication proliferates and is likely to influence perceptions.

**Misperceptions of Public Opinion**

Eveland (2002) acknowledged that many of the theories and hypotheses on perceptions of social reality focus primarily on the misperceptions of public opinion and media effects. These misperceptions can be categorized into perceptions of media content, media effects, and characteristics of others. The effects of these misperceptions focus on communication and other behaviors (e.g., spiral of silence, pluralistic ignorance) as well as attitudes (e.g., cultivation).

Although the accuracy of perceptions—whether a person has perceived the media or others correctly or not—is important and a central component of the theories presented in this research, we are at risk of perhaps missing the bigger picture. “Whether they are accurate or not,” Gunther and Storey (2003) concluded, “perceptions can have a self-
fulfilling effect on the realization of communication goals” (p. 213). As such, the perceptions individuals have of social reality can influence their behavior, regardless of whether they are accurate. The accuracy of these perceptions, then, is arguably not as relevant as answering the question: Do these perceptions vary by information context? If these perceptions vary when the actual content to which individuals are exposed varies, we might also be able to assess whether those perceptions influence political behavior. In some ways, such an analysis would be a true test of the persuasive press inference hypothesis, because it would be able to demonstrate whether differences in news content do indeed produce different perceptions in a real-world setting.

The Influence of News Media Content

There are other approaches to examining effects of media on perceptions than the accuracy or inaccuracy of these perceptions. Mass media have been argued to function as a key agent of influence in perceptions of public opinion (McLeod, et al., 1995). In fact, the media have been conceptualized as operating in cross-level processes whereby they function as “epistemological devices” (McLeod, et al., 1995, p. 73). In this way, media provide the raw material for individuals to understand the opinion climate around them, ultimately influencing what we know and how we know it (McLeod, et al., 1995; Rhodebeck, 1995).

Research on the persuasive press inference has demonstrated that manipulations of media content produce corresponding differences in individuals’ perceptions of the climate of opinion (Gunther & Storey, 2003). Yet these and related studies have focused primarily on the slant of news coverage.
An examination of the influence of types of content, in addition to coverage slant, can provide deeper insight into the social mechanisms that produce such perceptions. Such research could build upon previous work on the persuasive press inference (Gunther, 1998; Gunther & Christen, 2002; Gunther & Storey, 2003), which has focused primarily on the slant of coverage rather than simple differences in content.

For example, Daschmann (2000) found that perceived climate of opinion was significantly influenced by the presence or absence of news media election polls. This research suggests that the type of content to which one is exposed can have different effects on one’s perceptions of social reality. Gunther and Christen (1999) also examined base-rate information effects on perceptions of public opinion, yet they concluded that this information did not override the influence of news slant. However, their study took place in a laboratory setting, where news slant was admittedly a “purposely strong manipulation” compared to that of base-rate information (p. 288).

Although the relationship between media and perceptions of public opinion has been amply explored in the literature, much of the time, media are operationalized in terms of use (e.g., Kang & Kwak, 2003; Paek, et al., 2005; Salmon & Neuwirth, 1990; Shah, McLeod, & Yoon, 2001), even though many of these scholars acknowledge that individuals in different geographic regions are likely to be exposed to different content. Scholars of contextual analysis have consistently called for a study of media as a “global” contextual variable (Books & Prysby, 1991, 1995, 1999; Burbank, 1997; Rhodebeck, 1995) with little response thus far from communication researchers (see Eveland & Liu, 2005, and Eveland & Dylko, 2006, for exceptions).
One potential avenue for research is simply assessing the amount of media coverage during an event such as a political campaign. For example, if newspapers are focusing a lot of space on the campaign, and some individuals in that geographic area pay a lot of attention to the news, those individuals might conclude that others in the area also perceive the issue as important (a localized version of the agenda-setting effect). A second avenue is to examine simple differences in media content, such as the relative emphasis on one candidate versus another in a presidential campaign. An analysis that takes not only media use and perceptions into account, but also the varying media content to which individuals are exposed, would add depth to this rich area of scholarly work.

The Relationship between News Media Use and Political Participation

Social structures can either enhance or impede individuals’ behaviors by motivating action and making that action more or less doable (Lane, 1959). Research in political science and political communication has explored both individual- and macro-level variables that influence political participation. Institutional, historical, demographic, psychological, and social explanations have been sought to uncover why people do or do not get civically or politically involved (Scheufele & Ostman, 2001). For instance, at the macro level, one institutional explanation for voter turnout has been that some registration laws either inhibit or promote voting, and these effects differ by state context (Rosenstone & Wolfinger, 1978). Other macro explanations for political participation have been linked to historical events that affect nearly all individuals in a society, such as the Watergate scandal of the early 1970s (Scheufele & Ostman, 2001).
But perhaps most commonly applied are those explanations that reside at the individual or group level. Many political science models of political participation have based their explanations on simple demographics—specifically higher levels of education or socioeconomic status (e.g., Nie, Junn, & Stehlik-Barry, 1996; Verba & Nie, 1972). And some of the earliest work in mass communication concluded that opinion leadership and reference groups served as the primary explanations for individual engagement in politics (e.g., Lazarsfeld, Berelson & Gaudet, 1948; Weimann, 1991).

This route has continued to be popular among political communication scholars, who have found that certain types of media use are also associated with voter turnout and other types of political participation. For example, newspaper readership is strongly correlated with both voter turnout (McLeod, et al., 1996; Moy, et al., 2004; Teixeira, 1987) and civic engagement (Kang & Kwak, 2003; Shah, Kwak, & Holbert, 2001; Putnam, 2000). Demographic factors, such as levels of education, and other factors, such as the type of information accessed, have also been found to moderate this effect (Eveland & Scheufele, 2000; Shah, et al., 2001).

Yet even at this micro level, which has received the bulk of attention from researchers, political behavior stands out as the one variable that has received little support in terms of how it might be influenced by individual perceptions of public opinion. Moreover, little research suggests how media content at the contextual level might complement the established relationships of these political behaviors with media use. In their directions for future research, Books and Prysby (1991) suggested that research on political participation could benefit from examining this behavior within a contextual model. Two goals of the present research derive from this gap in the literature.
First, I assess how perceptions affect political participation at the individual level.

Second, I examine how media context affects this participation. By placing political participation within a multilevel model that includes media context and perceptions, these matters can begin to be explored.

Previous research has suggested that new relationships are likely to be found when examining variables within a contextual framework. For instance, Huckfeldt and Sprague (1995) stated that individuals who are more attentive to political campaigns are more likely to be affected by context. In fact, these authors argued that attention to the campaign is a necessary precondition for contextual effects. This suggests that the content in different media contexts might provide more explanatory power in this positive association between media use and political behavior, such that individuals with otherwise similar media and political behaviors are affected differently based upon the media context in which they are located. It is in this way that a contextual model can build upon, and advance, previous research.

Some scholars have suggested that research examining the relationship between media and political participation has overemphasized national media effects as well as traditional forms of participation, such as voter turnout (e.g., McLeod, Scheufele, & Moy, 1999; Moy, et al., 2004; Paek, et al., 2005). These researchers suggest that political participation can take many forms and that the actual act of participation must take place at the local level. Shah, McLeod, and Yoon (2001) proposed studying participation within the “ecological perspective” of the social context by examining features of the social environment. However, their analyses were limited by the use of compositional variables,
which, as will be described later, are prone to methodological fallacies and do not take actual media content into account.

I expect that political participation will be influenced by individual predispositions at the individual level (specifically one’s own candidate preference), as well as the contextual influence of media content.\(^1\) But perhaps more importantly, I expect perceptions of public opinion to play a role in predicting political participation. That is, perceptions of one’s surroundings, depending on whether one sees those surroundings as supportive or antagonistic, have been shown to influence voting behavior (Scheuch, 1969).

More recent research (e.g., Hayes, Scheufele, & Huge, 2006; Mutz, 1998; Scheufele & Eveland, 2001) has demonstrated that perceptions of others’ opinions can have significant influence on not only voting behavior, but other forms of political activity. For instance, Scheufele and Eveland (2001) examined differences between perceptions of state and national contexts in influencing political behavior, and found a significant difference among individuals who displayed opinion incongruity (operationalized as a comparison of one’s own opinion compared with perceptions of others’ opinion) for their state versus the nation. Their results demonstrated that differing perceptions of public opinion do indeed influence political behavior in varying ways. The present study builds from the conclusions of Scheufele and Eveland (2001) and asks, but what drives those perceptions that ultimately influence participation?

\(^1\) See Baybeck and McClurg (2005) for a similar approach.
Having explicated the dependent variables at the individual level and provided examples of current research that discuss their relationships with the media, I will now focus my attention on the central component of this study: media content as a contextual influence on perceptions of public opinion and political participation. Here, I will define what I mean by “context” and demonstrate how the present study differs from previous work linking media with the above-mentioned dependent variables.
CHAPTER 3

THE CONTEXTUAL LEVEL OF INFLUENCE

Conceptualizing “Context”

*Primitive Meanings*

Chaffee (1991) described a framework for explication of communication concepts, claiming that “making a concept explicit is, in a broad sense, a purpose of all discourses on communication concepts” (p. vii). From this perspective, even seemingly simple or straightforward terms require explication if they are to be utilized in any type of research. Chaffee suggests examining primitive uses of the term before expanding conceptual definitions in order to fully understand its use. Such an examination reveals that “context” is plagued by colloquial and casual use and, as any literature search will demonstrate, the term is often used haphazardly. For example, research examining some phenomenon in a “cultural context,” the “HIV/AIDS context,” or the “context of the 2004 campaign” uses the term to simply describe some alternative perspective or situation. This primitive use of the term is evident in a search for the sole term “context” on ISI
Web of Science, which produces an overwhelming 82,364 citations.\(^2\) Although many communication concepts are beset with such colloquial usage, “context,” in particular, begs for clearer conceptualization.

A dictionary definition provides insight into a key component of the term: “the *interrelated* conditions in which something exists or occurs” (emphasis added).\(^3\) The term is rooted in grammar, where it means the parts of a discourse that surround a word or passage and can “throw light on its meaning.” Thus, the term at its core represents *that which surrounds an event or circumstance and weaves together with that event, influencing its meaning*. The interrelatedness between context and its referent is a crucial undertone in contextual analysis, because the mechanisms that join context, as the independent variable, with some dependent variable must be specified for the relationship to have meaning (see Erbring & Young, 1979).

**Scholarly Conceptualizations**

Many of the conceptualizations of context have their origins in political science with the work of Robert Huckfeldt, John Sprague, John Books, and Charles Prysby. But the inherently interdisciplinary nature of this concept has encouraged research in geographic analysis (e.g., Eagles, 1995; Johnston et al., 2001; Pattie & Johnston, 2000), sociology (e.g., Blalock, 1984; Campbell & Alexander, 1965), and communication (e.g., Ball-Rokeach, Kim, & Matei, 2001; Jeffres, Neuendorf & Atkin, 1999; Scheufele &

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\(^2\) Search conducted July 31, 2007 in the Social Sciences Citation Index, 1980 to present.

Eveland, 2001). In Berger and Chaffee’s (1987) assessment of relevant levels of analysis in communication, context could be considered as either the (1) network or organizational level or the (2) macroscopic societal level (the two more macro of four levels discussed), depending on how context is defined. However, Berger and Chaffee (1987) later refer to “contexts” as simply different topics and unique theoretical perspectives. The authors do suggest that contexts can—and perhaps should—be incorporated into other levels of analysis. Unfortunately, they did not provide a clear conceptualization of the term, and these relevant elements of context have still not been sufficiently conceptualized in communication research.

When context is explicitly defined, there are multiple definitions and many of these are contested in the literature. In addition, there are distinctions between “context” and related terms, such as “network.” Books and Prysby (1991, 1995) offer perhaps the most exhaustive and mutually exclusive account of the dimensions of context, in addition to providing a succinct definition. This definition is rooted in the primitive meaning of the term: “a geographically bounded unit” (1991, p. 2). Books and Prysby were specifically interested in “local context,” which they conceptualized as “areally defined groups of people” (p. 3). The boundary of this unit—often specified as neighborhoods, communities, or states—is what differentiates it from non-geographic influences such as families, clubs, and interest groups (what might have labeled “contexts” in Berger and Chaffee’s definition). Books and Prysby’s definition builds on Weatherford’s (1983), which defined contextual processes as those that “spring from the social environment in which the individual is located, rather than from the characteristics of the individual alone” (p. 871, emphasis added). Weatherford acknowledged the problems associated
with defining a unit of analysis, but emphasized that this social environment is locationally bounded. This spatial element of context is what differentiates it from the casual use of the term in much of the literature.

Others (e.g., Huckfeldt, 1986; Huckfeldt & Sprague, 1995; Huckfeldt, Johnson & Sprague, 2002) define context more liberally, but regrettably the definitions are provided only in terms of contextual effects. Specifically, Huckfeldt and colleagues refer to context as extra-individual factors that result from social interaction. Although many of these authors’ studies are rooted in locally bounded units (such as discussion dyads of neighbors and friends), they state that contexts can be defined socially as well as geographically. This inclusion of social contexts is the key difference between Huckfeldt and Sprague’s definition compared to Books and Prysby’s, which limits itself to geographic units.

Importantly, though, Huckfeldt and Sprague (1995) differentiated between “networks,” which are individually structured, and “contexts,” which are structurally imposed. In this way, contextual analyses examine the structure within which individuals find themselves—voluntarily or not—while network analyses examine the social structures individuals carve out for themselves and describe the “connectivity” among those individuals (Cox, 1969).

In addition to using the term with some indiscretion, scholars often do not explicitly state the context they are examining, or that it is even a “context” at all. With increasing interest in uncovering effects across levels of analysis in communication research (e.g., Chaffee & Berger, 1987; Paek, et al., 2005; Pan & McLeod, 1991; Southwell, 2005), it becomes even more crucial to explicate not only the variables at
these levels, but the *levels* themselves. Mass communication scholars—in addition to political scientists—have addressed the importance of these levels of analysis. Yet research has tended to see media, for example, as having fixed and unvarying relationships with individuals across space (McLeod & Blumler, 1987). This is despite research that demonstrates cross-national differences among media systems cross-nationally (e.g., Peter, 2003) and across communities (Tichenor, Donohue, & Olien, 1980). The definition of context employed in the present research will be that outlined by Books and Prysby (1991, 1995), which emphasizes the importance of variance across geographic locale.

*Dimensions of Context*

Since context is itself a very broad conceptualization, its dimensions can best be seen as categories of variables. Books and Prysby (1995) provide a description of three types of variables that can be measured as contextual effects. These dimensions are rooted in the work of Lazarsfeld and Menzel (1969), who differentiated between properties of collectivities and individuals; those properties of collectivities serve as the framework for the dimensions of context described here. These dimensions allow researchers not only to place their contextual variable within a logical theoretical framework, but they also provide guidance on how variables can and should be measured.

*Compositional Variables*

The first dimension includes compositional variables (alternately referred to as “distributive” properties by Eulau, 1986), which have received the most attention in the
literature (Books & Prysby, 1991). These variables are derived by some mathematical operation aggregating individual responses. The compositional variables most often studied are social class (e.g., education, socioeconomic status), racial or ethnic composition, partisan composition, and economic factors (such as unemployment rates).

Studies employing compositional variables to assess social class and partisan composition have abounded in the literature. Tingsten (1937), considered the “father of contextual analysis” (Books & Prysby, 1991, p. 4), found that Swedish workers were more likely to vote socialist when they lived in a heavily working class district. Similarly, Langston and Rapoport (1976) concluded that interacting with working-class individuals influenced the likelihood that individuals would view politics in terms of class conflict, in turn influencing partisan preferences. Others, such as Huckfeldt (1979), have found that higher neighborhood socioeconomic status increased political participation among individuals with higher socioeconomic status, but decreased participation among those with lower socioeconomic status. More recently, Gimpel, Dyck, and Shaw (2004) used geographic information to assess voter turnout in neighborhoods with more or less homogeneity of party identification. They found that Republicans overall vote more, but vote significantly less when more Democrats are in their local surroundings. Similarly, Burbank (1997) discovered that perceptions of partisan climate and interpersonal contact were influenced by actual partisan and class composition in six communities.

Much contextual analysis with compositional variables is indebted to V. O. Key (1949), who—assessing racial composition—discovered that southern whites were more likely to be politically active in counties with greater concentrations of black citizens. This finding has been replicated in other contexts as well (e.g., Huckfeldt & Kohfeld,
1989; Wright, 1977), suggesting that white racial hostility “varies as a direct function of blacks’ presence in the population” (Huckfeldt & Sprague, 1995). A more recent study by Tam Cho, Gimpel, and Dyck (2006) assessed the effect of co-ethnic context in California neighborhoods, concluding that for Chinese and Koreans, the likelihood of voting declines as the neighborhood becomes inhabited by immigrants. Although these results counter those of white hostility in black contexts, they suggest that different ethnic compositions can influence voter turnout in direct ways.

These represent just a few examples of the vast amount of literature using compositional variables, yet each is similar in that it uses a computed variable from the sampled population to compare groups (e.g., racial composition in neighborhoods). Because of this computational aggregation, compositional variables tend to be criticized in the literature as diluting a rich social structure into “mere aggregations” of individual attributes (Erbring & Young, 1979, p. 397). Moreover, the use of these variables has multiple methodological issues.

Blalock (1984) stated that compositional variables are perhaps the most problematic of all contextual variables. In addition to unit specification problems (i.e., defining the boundaries of units), contextual models with these variables must acknowledge 1) situations involving nested or overlapping contexts; 2) directions of causality between context and individual-level variables; 3) multicollinearity between the contextual and individual-level variables; and 4) self-selection into the context. Situations with overlapping contexts are likely when aggregating a mean or other calculation from a sample (i.e., computing a compositional variable), because that sample may not be a theoretically meaningful unit of analysis for that contextual variable. In other words,
aggregating some variable—such as income—over a group of individuals in a neighborhood is a somewhat arbitrary procedure. Where, theoretically, are the boundaries of that neighborhood? Secondly, although directions of causality are of concern for all contextual—and for that matter, any—models, this is of particular concern with compositional variables. Without longitudinal data with meaningful temporal distinctions, one cannot be sure whether the contextual variable is simply an artifact of individual-level influences (Books & Prysby, 1991). Multicollinearity is also a problem for all contextual models, but for the same reasons that causality is difficult to establish with compositional variables, intercorrelation between the compositional and individual-level predictors is not easily resolved empirically.

**Structural Variables**

Blalock (1984) acknowledged that, “there is no inherent reason why contextual-effect terms need to be confined to group or subgroup means” (p. 358), as in compositional variables. Considering the many issues that arise when using compositional variables, it is fruitful to look for other contextual variables without such problems. **Structural variables** resolve some of these problems by measuring some behavioral pattern among members of a collective. Structural variable are not averages of individual- or group-level characteristics. Instead, they deal with relational patterns among individuals within the unit of analysis (Books & Prysby, 1991). For example, an early political study that used structural variables found that when comparing districts, candidates who made more frequent contact with constituents increased support for the Democratic Party (Cutright & Rossi, 1958). Similarly, Books and Prysby (1991) hypothesized that political districts with high levels of two-party competition would
stimulate political interest and involvement in the party. Because political parties are organized across district lines, such competition might produce geographically bounded political activity, producing a structural effect. “Where voters live,” Books and Prysby (1991) argued, “will affect their exposure to party activity, which can influence voters by increasing the amount of favorable information they receive about the party” (p. 33).

Patterns such as these cannot be uncovered by simply aggregating individual characteristics. Rather, it is the relations among actors and groups that produce structural effects. Much of the work on structural variables has focused on political campaign activity, proposing that where voters live will affect their exposure to party activity. Moreover, “the information received by a voter during an election campaign—whether through grassroots party activity, paid media advertisements, news coverage, or other sources—may depend in large part on where the voter lives” (Books & Prysby, 1991, p. 34). Although few studies have utilized structural variables in this way, more recent work has echoed the findings of Cutright and Rossi (1958). Campaign spending and close races, as well as competitive political parties, have been found to influence turnout in state legislative elections and congressional primaries (Caldeira & Patterson, 1982; Kenney & Rice, 1986). The placement of political ads has also been examined in terms of their effects on voter turnout, interest in the campaign, and familiarity with the candidates (Freedman, Franz, & Goldstein, 2004; Goldstein & Freedman, 2002).

**Global Variables**

As with structural variables, global variables have not been utilized as frequently as compositional variables in the literature (Books & Prysby, 1991). Global variables are characteristics of the environment that are not directly tied to the individual
characteristics or behaviors of members within a contextual unit (Books & Prysby, 1991; McLeod & Blumler, 1987; Lazarsfeld & Menzel, 1969). Studies using global variables have demonstrated, for example, that the voting structure within local government institutions affects political participation (Heilig & Mundt, 1981). Community size has also been shown to influence political participation, sense of community, and political competence (Books & Prysby, 1991). For instance, Finifter and Abramson (1975) revealed that smaller community size significantly increased feelings of political competence. Similar work by Tichenor, Donohue, and Olien (1980) demonstrated that community size affects the type of content in newspapers (conflict versus consensus), which in turn influences a number of individual-level variables such as interpersonal discussion, knowledge, and media use. Although Tichenor, Donohue, and Olien’s work was not a contextual analysis per se, it certainly serves as a model for the present study in that it examined the cross-level interactions between global and individual variables.

The mass media are a prime example of a global factor that is likely to produce contextual effects (Books & Prysby, 1991, 1995, 1999). We know that at the individual level, news content influences both cognitions and behavior. For instance, Miller, Goldenberg, and Erbring (1979) found that political efficacy and trust were influenced by news content even after taking individual characteristics into account. Goldenberg and Traugott (1980) found that more media coverage led to greater name recognition of candidates, while Erbring, Goldenberg, and Miller (1980) found that issue salience was moderated by context related to the issues covered. Although these pieces are cited as the few studies that have conducted a “contextual analysis” of media effects (Books & Prysby, 1991), upon close reading, one can see that these studies incorporated contextual
variables but did not assess cross-level interactions. This is a limitation obviously resulting from methods at the time, but since current methodology (such as multilevel modeling) can take such contextual differences into account, the next step is to provide some insight into whether media affect individuals differently across contexts.

Certainly, much research in mass communication has conducted similar studies that connect survey data with content analyses to demonstrate that beyond individual characteristics, mass media have important effects on cognitions and behavior. For example, cultivation research has demonstrated that people are influenced by the content on television such that their perceptions of reality come to reflect those presented on television (see Shanahan & Morgan, 1999 for a review). In cultivation studies, the effects of media content (i.e., the production of fear, particularly of crime situations) across time and space are emphasized over individual characteristics.

Similarly, agenda-setting research typically compares survey responses indicating what respondents see as important problems facing the country with media coverage over a particular period of time (Jeffres, 1997). Multiple studies have reported that public concern about problems facing the country follows media attention to a wide variety of issues (e.g., Iyengar & Kinder, 1987; McCombs & Zhu, 1995) and the accumulated evidence suggests such effects span geographic and historic settings (McCombs, 2004; McCombs & Reynolds, 2002). However, many of these agenda-setting studies do not measure individual exposure to the media. Instead, they often assume some sort of flow from media content to the public without clearly examining the mechanisms of that information flow.
It should be noted, however, that compositional variables are not the only contextual variables prone to methodological problems. Huckfeldt and Sprague (1995) warned that contextual models should not treat individuals as “dupes” who are helplessly influenced by their context (p. 106). Any contextual analysis should exhaust all possible individual variables before claiming contextual effects. Perhaps the two most commonly cited problems are the ecological fallacy and the contextual fallacy. The ecological fallacy refers to the faulty assumption that relationships found at the aggregate level are true at the individual level. Huckfeldt and Sprague (1995) claim that contextual analysis actually resolves this problem, because the ecological fallacy is not logically different from the individualistic fallacy (the opposite assumption)—both result from unspecified contextual effects. The contextual fallacy is the attribution of effects to a contextual-level variable when the effects are actually the result of individual-level variables excluded from the model (Huckfeldt & Sprague, 1995). For this reason, much care must be taken to include relevant individual-level characteristics, without over-specifying the model.

How Does Contextual Analysis Differ from Other Media Effects Research?

The important question for mass communication scholars when reviewing the literature on context and recalling this rich history of cultivation, agenda setting, and other media effects research begs the question: Are these studies in fact contextual analyses? Gross and Aday (2003), for example, did not assess media content (a global variable), but did include neighborhood crime rates (a compositional variable), even though contextual terminology was not used in the study. Can existing media effects
studies that examine content or some other “contextual” media variable be considered contextual analyses?

By the definition of context given earlier—a geographically bounded unit—the answer is no, at least for most media effects literature. In fact, communication scholars often lament the over-reliance on self-reports of media use instead of examining actual content (e.g., McLeod, et al., 1999). Yet the close connection between the ideas put forth by contextual researchers and media effects scholars have suggested that a fruitful area of research can link these approaches, such that media in differing local contexts can be compared in their effects on different contextual units. Researchers have called for media effects research to move beyond its individualistic bias (Kinder, 1998; McLeod et al., 1991; Shoemaker & Reese, 1996), represent variations of media content within cultural context (Kinder, 1998; McLeod, Kosicki, & Pan, 1991), and make cross-level connections between micro and macro levels of analysis (Pan & McLeod, 1991; Price, 1988).

So, a contextual analysis of media effects doesn’t necessarily differ from this important bulk of findings in mass media effects research. What it allows researchers is a more fully inclusive and theoretically important framework from which to understand media effects. We know that, for the most part, media do not have universally powerful effects across space and time (McLeod & Blumler, 1987). We also know that many of these effects are not direct, or are moderated by some other variable (Kosicki, Becker, &

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4 One exception might be Peter (2003), who compared media content effects cross-nationally.

5 Although Noelle-Neumann (1973, 1999) and others have contested that media are consonant and cumulative and therefore do have universal effects.
Fredin, 1994; Mutz, 1989; Mutz, 1998). McLeod and Reeves (1980) outlined four criteria of analysis needed in order to establish media effects: 1) assess media content; 2) control exposure of the audience to content; 3) assess the effect of the content; and 4) elaborate on conditional processes. A contextual model that takes individual exposure as well as media content into account—including conditional variables at both levels if necessary—allows for such a thorough analysis.

*Media Effects within Context: What Are Contextual Effects?*

Having defined context as a level of analysis limited by geographic boundaries, and specified media context as a global variable, it is important to assess the likely effects associated with context. A “contextual effect” can be defined as a systematic variation in individual behavior associated with variation across geographic settings (Burbank, 1995). Books and Prysby (1991) limit these effects to a local setting, which they describe as an areally bounded group of people. Contextual effects can vary by individual characteristics and predispositions (Huckfeldt, 1980). Importantly, such effects can only be asserted when individual behavior depends on an external factor *after* all individual-level determinants are taken into account (Huckfeldt & Sprague, 1995).

In general, many researchers build their program of research around dependent variables of interest, and those who have studied contextual effects are no different. Since the bulk of this research has been housed in political science, the outcome variables have primarily been voter turnout (Bowler, et al., 1993; Caldeira & Patterson, 1982; Gimpel, et al., 2004; Johnston, et al., 2001; Kenney & Rice, 1986; Tam Cho, et al., 2006); conflict or assimilation of political views (Huckfeldt, 1980; 1986); partisan support (Burbank, 1995,
1997; Cutright & Rossi, 1958); candidate or policy evaluation (Books & Prysby, 1999; Goldenberg & Traugott, 1980; Weatherford, 1983); political participation (Huckfeldt, 1979); perceptions of community surroundings (Baybeck & McClurg, 2005; Dalton, Beck & Huckfeldt, 1998); issue salience (Erbring, et al., 1980); and political discussion or opinion expression (Baybeck & Huckfeldt, 2002; Huckfeldt et al., 2002; Katz & Baldassare, 1992).

Effects can be either direct—such that changes in the contextual-level variable produces predictable and systematic changes in the individual level— or moderated by some other variable. In the last case, interactions between contextual and individual variables may be moderated by either individual-level or contextual variables (Books & Prysby, 1991). Such possibilities yield “a bewildering variety of potentially significant combinations,” (Books & Prysby, 1991, p. 9).

Mechanisms for Contextual Effects

Critics of contextual analysis have argued that the mechanisms by which context has an influence are often ignored, and contextual effects are simply a different variable to explain an effect that could be explained by individual characteristics (Burbank, 1997). Disagreement exists in the literature about which mechanisms produce contextual effects, yet most scholars state the detection of these mechanisms as a primary goal of contextual analysis (e.g., Erbring & Young, 1979).

It is perhaps obvious to many communication scholars that contextual effects are likely to operate primarily through the flow of information. Election campaigns, in particular, transform over time as a result of political communication between elites, the media, and individuals. In this way, campaign effects can be traced to changes in political
communication—or the flow of information between actors—over time. The
“information flow perspective” (Orbell, 1970) suggests that such information serves as a
primary mechanism for contextual effects.

Huckfeldt (1986) and Huckfeldt and Sprague (1995) suggest that social
interaction drives contextual effects. However, Huckfeldt and Sprague define contextual
effects as a subset of “environmental effects,” which are any effect on individual
behavior that arises because of extra-individual factors. This definition is not only
problematic because it defines the effects of the object rather than the object itself, but it
removes the distinctive quality of context, as Books and Pryjby (1991, 1995) and I have
defined it—its geographically bounded location. If one studies context simply as social
connectivity devoid of spatial constrictions, this becomes a study not of context, but of
influence from social forces. Sociologists have long been examining such influences; in
fact, Durkheim’s notion of “social facts” has been credited for much of the research on
external influences on individual behavior (Burbank, 1995).

Yet social interaction is indeed a key mechanism for contextual effects, because
social interaction is more likely among those individuals nearer to each other in location
(although, certainly, communication technology enhances across-context
communication). No one is able to exercise complete control over such incoming
information because much of this information is obtained inadvertently (Huckfeldt &
Sprague, 1995). In addition, citizens are often thought of as “cognitive misers” in a
complex world of information (Fiske & Taylor, 1991). Not only does this result in the use
of mental heuristics, but citizens are likely to obtain political information at the least
expense possible (Huckfeldt & Sprague, 1995). Much work exists in political
communication that suggests citizens seek out such information from friends, neighbors, coworkers, and family members in their social networks (e.g., Straits, 1991; Wyatt, Katz & Kim, 2000).

In the literature on contextual effects, this social interaction mechanism is the dominant framework for research, yet this perspective fails to account for the larger context within which interpersonal networks are embedded (Books & Prysby, 1991; 1999; Orbell, 1970; Rhodebeck, 1995). Social interaction is only one of four mechanisms in the “information flow perspective” through which context affects individuals (Books & Prysby, 1991; see Erbring & Young, 1979 for a slight variation). This perspective suggests that individuals obtain politically relevant information from their surroundings and this information is naturally locationally biased (Burbank, 1995). The information-flow perspective states that there are four mechanisms by which people obtain political information: through social interaction, personal observation, organizations, and the mass media. Each of these will be described briefly.

Books and Prysby (1991) defined the social interaction mechanism as informal interaction. These authors outline several limitations of measuring informal interaction, which ultimately limit its explanatory power. Geographical mobility reduces contextual stability in order for effects to be found. Moreover, self-selection of discussion partners can create biased results. Furthermore, discussions are often likely to be asymmetric in the balance of giving and obtaining information and places of disagreement (e.g., Huckfeldt et al., 2002; Price, et al., 2002).

The second mechanism for contextual effects occurs when individuals personally observe their surroundings. Orbell (1970), for example, operationalized “information” as
the actual percentage of partisans in a community, putting forth a simple causal relationship—greater involvement in the community predicted greater accuracy about partisan makeup. In line with more recent work by Putnam (2000), who noted a decrease in community involvement over the last half-century, Orbell (1970) argued that people less involved in the community rely more on their social surroundings and are thus more susceptible to influence. In a campaign, such personal observation might also occur when a neighbor posts a yard sign or one sees a car with candidate bumper stickers.

Third, individuals can obtain organizationally based information from groups to which they belong, such as churches, volunteer groups, or other local organizations. Information in this vein can be formal or informal, but its source is the organization. Research on this form of information has found, for example, that individuals in different labor unions are exposed to varying political orientations (Books & Prysby, 1991), and that black clergy serve as important sources of political information for their congregations (Harris, 1999).

Finally—and the focus of the present study—mass media serve as an important mechanism for contextual effects, primarily when it comes to politics. The local media are of particular importance here, because there is likely to be variation in the type of content that individuals in different media markets encounter. Differences in support for candidates have been found by media market in both U.S. House and Senate elections (Campbell, Alford & Henry, 1984; Stewart & Reynolds, 1990; West, et al., 1995). Although there is an enormous body of literature on media effects, little of this has incorporated a contextual perspective (Books & Prysby, 1991; Mutz & Martin, 2001).
What makes a contextual perspective different is that it acknowledges that individuals receive information that is “contextually patterned; where a person lives influences the substance and tone of the information he or she receives” (Books & Prysby, 1999). In one of the few contextual analyses that have included media as a contextual variable, Rhodebeck (1995) called for more research utilizing a contextual approach: “it highlights the sorts of social conditions and events that provide the raw material for discussions among friends, family, neighbors, and co-workers” (p. 250, emphasis added). Rhodebeck (1995), as well as Books and Prysby (1991, 1995, 1999) and Burbank (1997) have each called for measures of local media as a global contextual variable in context analyses. This study assesses local newspaper content as a mechanism for contextual effects.

The purpose of examining local media content as a contextual variable in the present analysis is to obtain a better understanding of how people come to perceive the various environments in which they live. Measuring individual cognitions and behavior, in concert with the media environment, in a multilevel model is one step closer toward a better understanding of this environment. However, much of the media-effects literature continues to focus solely on the individual as the primary unit of analysis. “As rational beings it is worse than shallow to generalize at all about comparative behavior,” Lippmann (1922) observed in his treatise on the differences between reality and the pictures in our heads, “until there is a measurable similarity between the environments to which behavior is a response…For the pseudo environment is a hybrid compounded of ‘human nature’ and ‘conditions’” (p. 15). Because our perceptions of social reality result from such a hybrid of nature and nurture, it is imprudent to make conclusions about how
these perceptions are formed by looking at only one or the other component of that hybrid. I propose that conceptualizing media content *within context* as a global variable can provide greater theoretical depth and methodological rigor to the media effects literature.
CHAPTER 4

LINKING INDIVIDUAL- AND CONTEXTUAL-LEVEL INFLUENCES

The previous two chapters reviewed the vast literature on individual-level predictors of both perceived public opinion and political behavior, as well as the nature of contextual influence. The present chapter explores the connections between these levels and proposes research hypotheses as well as a conceptual model. Finally, I will discuss how “thinking multilevel” can be applied to the present communication phenomena.

Predicting Perceptions of Public Opinion

As outlined earlier, research has demonstrated that media have an “impersonal influence” (Mutz, 1998) and that people do not always simply project their own opinions on others, once media content is taken into account (Christen & Gunther, 2003). Moreover, the media function as “epistemological devices” (McLeod, et al., 1995, p. 73), providing the raw material by which individuals understand the opinion climate around them (McLeod, et al., 1995; Rhodebeck, 1995). By placing measures of media content into a model predicting perceived public opinion, it becomes possible to parse out the effects of individual versus contextual effects.
In the context of a presidential campaign, as in the present study, information is likely to vary by media market, such that media in one part of the country might report more stories about Candidate A, whereas Candidate B is prominent in the news from another part of the country. Such information is, for the most part, a result of variations in structural factors in an area, such as where the candidate is from (Texas or Massachusetts, for example), whether the candidate visits or airs advertisements in that area, or whether the candidate or his party has done well (or poorly) in that area in the past. Such structural factors are bound to influence what gets into the news, based on the general criteria of newsworthiness adopted by news organizations (e.g., proximity, prominence, and timeliness).

The important point of the present study is that individuals obtain information about such election news primarily, if not solely, through the media or through interpersonal discussions that arise from having attended to media. Moreover, this content varies by context, and this suggests that the effects of media might also vary by context. In this sense, the media serve to construct a person’s social reality, and one can hypothesize that they have effects on individuals’ subsequent perceptions and even their behaviors.

But why might the simple relative presence of Candidate A versus Candidate B mentions in one’s local media context produce any effect on individual perceptions or behavior? The answer is quite simple: people obtain information about politics from the news, and if one sees that a local newspaper is focusing relatively more attention on one candidate over another, one might conclude that the candidate is doing well—or might
even predict a win—in that state. There are several explanations for why such a conclusion, whether it is biased or not, might be made.

Information Processing Explanations

Associative Network Model of Information Processing

Theories of information processing might provide a cognitive explanation as to why the simple ratio of candidate coverage in the news media might produce effects on whom a respondent thinks will win an election. One information processing theory provides an explanation for why individuals might interpret such information differently depending on the content to which they’ve been exposed: the associative network model of memory (Roskos-Ewoldsen, Roskos-Ewoldsen, & Carpentier, 2002; Srull & Wyer, 1979). This model of memory assumes that information is stored in nodes—each of which represents some concept—that are connected by associative pathways.

An underlying assumption of this information processing model is that people are cognitive misers, and stimuli—via “spreading activation”—bring awareness to those things in one’s long-term memory (Price & Tewksbury, 1997). Utilizing a similar approach, the heuristic-systematic model of information processing (Chaiken, Liberman, & Eagly, 1989) proposes the “sufficiency principle,” which maintains that individuals attempt to minimize cognitive effort while also satisfying their motivational concerns. These, and other dual-mode information-processing models, suggest that heuristics—judgmental rules stored in memory—serve as a less cognitively straining form of retrieving information.
An example might help demonstrate this model in the present context. For instance, one might hypothesize that the more a person sees Kerry represented in the local newspaper, the more he might perceive Kerry to be doing well in the campaign. Thus, when asked, “which candidate do you think will win the race?,” he might look to the node that identifies which candidate he’s read more about, which is Kerry. Because the media tend to devote more attention to successful candidates (Snyder & Stromberg, 2004), he might connect that node with one that says “the media pay more attention to viable candidates,” and conclude that Kerry is likely to win the race. This process was outlined more generally in the work of Katz and Lazarsfeld (1955), who suggested that people look to their environment to obtain information about reality, observe whether others agree with that information, and then assume that it is in fact the reality. If one’s environment—i.e., the media—emphasizes one candidate over another, an individual might presume that this represents the opinion in his or her community, and that this is reality.

This is by no means the only process of spreading activation that might be produced from asking such a question. But an assumption underlying the present research is that the more attention the media in a context pays to a candidate, the more likely a person living in that context is to believe that candidate is doing well. Certainly, this will likely depend on one’s level of media attention, but it does not necessarily have to be. Just the fact that the media in one context are overemphasizing one candidate might result in political talk among individuals that presumes that candidate is winning. The underlying assumption is the same—an individual receives information about a candidate from the media, and connects this information to existing nodes about what makes a
candidate more likely to win. The result is some prediction of whether that candidate is doing well or poorly in the campaign.

**Accessibility and Applicability**

A second explanation also draws from cognitive information-processing theories. Combined with the sufficiency principle (outlined above), Shrum (2002) claims that *accessibility* is one of the two important underlying principles of research on perceptions of social reality. This principle states that the information that comes to mind most readily will be the information most likely to be used in making a judgment (Higgins, 1996; Shrum, 2002). There are several determinants that make accessibility more likely. As outlined in the associative network model, nodes that are closely related to other nodes are more likely to be accessible (Shrum, 2002). Additionally, the frequency and recency with which constructs or nodes are activated can influence these judgments. Simply, “media consumption enhances accessibility, which influences the information that becomes a part of that small subset of available information” (Shrum, 2002, p. 74). These determinants lead to judgments of set size and probability, suggesting that one might interpret, for example, how many people in one’s state support a candidate based on the information they interpret through the media.

The process by which media can affect audience evaluations is sometimes referred to as knowledge activation (Price & Tewksbury, 1997). As such, what one “knows” about his or her reality can vary depending on what is perceived in the media. The information activated by the media that is judged to be *applicable* to the current situation (e.g., when answering a survey question about who will win an election)
influences how that information is interpreted (Roskos-Ewoldsen, et al., 2002). This mechanism is referred to as *applicability*.

These approaches to information processing—associative network models and the mechanisms of accessibility and applicability—can be combined to propose that (1) people who are exposed to information, (2) tend to process information in ways that are not cognitively straining, and (3) make interpretations based on the way they have processed this information when called upon to make decisions about related issues or topics. Being asked a question in a survey is one such instance of being called upon to make a decision about a related issue.

*Theories about Media Effects on Others*

A more complex set of explanations for why individuals make assumptions about who is winning a race is based on theories about media effects on others. For instance, individuals might make assumptions about the media’s effects on others when they see media paying more attention to one or another candidate. Mutz (1998) argued that people come to rely on mediated sources in order to obtain information about some distant other, such as one’s community, state, or nation. Moreover, people who read information in newspapers or watch it on television are aware that both near and distant others are simultaneously consuming the same information. The result of this reliance on media to obtain information about social reality, combined with changes in mass communication, is that people believe the media influence what others think (Mutz, 1998).

If people believe that the media have effects on others, then when they are presented with information on public opinion, they are likely to gather not only concrete
information about social reality, but they are also likely to infer what the effects of this information will be on others. Thus, when asked, “which candidate will win the race?” respondents will likely consider what they have seen in the media. This coincides with the arguments put forth by the persuasive press inference hypothesis (Christen & Gunther, 2003; Gunther, 1998; Gunther & Storey, 2003), yet the addition of contextual media content can add complexity to these findings by providing a true media context that differs by the information environment. That is, one’s perceptions of social reality depend on what information is present in one’s environment.

Moreover, because people tend to think media are powerful in influencing others, and because people tend to update their evaluations of candidates—and presumably, their support—as new information is received (Holbrook, 1996), the simple presence or absence of information about a candidate is likely to influence perceived public opinion. The fact that most political information is obtained through the media (Books & Prysby, 1991, 1995; Christen & Gunther, 2003; Huckfeldt & Sprague, 1995; Mutz, 1989) furthers the argument that what is presented in the media is likely to influence the “pictures in our heads” (Lippmann, 1922) of social reality. Decades of agenda-setting research add credence to this statement, such that attention to media content influences the salience of certain issues (McCombs & Reynolds, 2002) and this effect varies by geographic setting (McCombs, 2004).

Hypotheses

The influence of media content on perceived public opinion has been shown to depend on individual-level factors such as social identification (Pan, et al., 2006). Yet the
advantage of a contextual analysis is that it can assess the influence of some contextual variable as moderated by or as an individual effect over and above such individual influences. Thus, I propose the following hypotheses based upon the previous literature suggesting both individual and contextual effects.

First, I test whether there will actually be differences in perceived public opinion (measured as perceived state-winning candidate in the 2004 presidential election) across media contexts. This hypothesis tests the baseline prediction that there will be variance among groups of people who are located in different media markets. Media content is argued to vary by context—such that one candidate may receive more coverage than another—and because individuals obtain much political information from the media, they will process the information that is available to them. Furthermore, when asked who will win the state in the presidential election, they will use the least amount of effort and time to obtain the most accessible information in their associative network of related constructs. One component of accessibility is frequency of activation, and if content differs by media market, I propose,

\[ H_1: \text{There will be significant group-level heterogeneity among media markets in perceived public opinion.} \]

Once it has been established that there is variance (or group-level heterogeneity) between media markets in perceived public opinion, it is necessary to assess whether these differences are due to individual-level variables. Past research has demonstrated that individuals often project their own opinions onto others. This social projection hypothesis suggests that perceptions of public opinion will rely mostly on personal opinions, such that people presume others have the same perceptions as themselves. In
other words, when asked to describe others, individuals simply refer to their own self-reactions (Robbins & Krueger, 2005). The most common explanations for this biased perception of public opinion in the literature are motivational and cognitive. Specifically, some people are motivated by “impression management” (Prentice & Miller, 1993) to maintain some perceived control over the environment. A need for social connectedness or validation of one’s own opinion can also result in biased perceptions that reflect one’s own opinion (Hoffman & Glynn, forthcoming). The cognitive mechanism of accessibility can produce a tendency to derive estimates of others’ views based on what is most accessible in one’s memory—often what is most accessible is one’s own opinion. Each of these explanations for social projection can also be labeled an “assimilation bias,” whereby people perceive public opinion to be more favorable toward their own point of view (Gunther & Christen, 2002), but the term “social projection” will be used to describe this phenomenon in this paper. Thus, I hypothesize,

\[ H_2: \text{Individual perceived public opinion will significantly vary as a function of individual candidate preference across media context groups.} \]

Yet a primary objective of the present study is to include measures of actual media content in predicting perceived public opinion. This is at the root of conducting a contextual analysis. Thus, I include a measure of the ratio of Kerry-to-Bush candidate mentions to test whether perceived public opinion varies as a function of the media content included in the market in which one is located. The measure of Kerry-to-Bush mentions provides an overall picture of the media environment during the presidential campaign. Based on previous research on social reality, I assume in the present study that the news media portray the social reality of the presidential campaign within a given
media market, which is then observed by individuals within that context. Simply, I propose that the more Kerry information is in the newspaper in one’s media context, the more that person might perceive Kerry to be doing well in that state. I propose that, depending on the presence of this type of content,

H₃: Individuals’ perceptions of public opinion will vary as a function of media context, measured as the ratio of Kerry-to-Bush mentions.

This analysis will also evaluate whether media content influences perceptions of public opinion when it is interacted with individual-level predictors. Both the individual-level and contextual-level variables will be included in order to assess the relative effects of these influences on perceived public opinion. This model assesses two related hypotheses. First, I propose that there will be a significant interaction between the Kerry-to-Bush ratio of mentions in one’s newspaper context and their individual newspaper use. The assumption underlying the inclusion of this variable is that those individuals who are more attentive to the campaign by reading the newspaper might perceive public opinion to correspond to what they read in the news. Respondents who are exposed to the news are likely to look to their recollection of media content as their most accessible source of information about the social environment and interpret the information as having some influence on public opinion.

In other words, I expect that the more an individual uses the newspaper, and the more that newspaper mentions Candidate A over Candidate B, the more likely that respondent will be to say that Candidate A is likely to win his or her state. This hypothesis is rooted in the theories of information processing outlined above, which suggest that the more frequently and recently a person receives information, the more
readily accessible that information will be when called upon. Yet the media environment is also likely to influence these perceptions. Noelle-Neumann (1993) asserted that there are two divergent climates of opinion, or a “dual climate” of opinion: the one perceived directly by the people and the one portrayed in the media. Increased use of the media implies that individuals’ perceptions would converge toward the media portrayal.

Thus, because people look to the media for clues about public opinion, and those who read the newspaper more frequently will have such clues more readily accessible, one might expect that perceptions of public opinion will converge with media content according to the dual climate of opinion put forth by Noelle-Neumann (1993). As such, I hypothesize,

$$H_4: \text{Individuals’ perceptions of public opinion will vary as a function of the interaction between individual newspaper use and media context, controlling for other predictors, such that higher newspaper reading will positively interact with media context to predict perceived public opinion.}$$

Although there is a rich literature suggesting that individuals often simply project their opinions onto others, previous research on social projection and the hostile media bias has revealed that projection effects can be moderated by media content. The social projection effect has actually been found to diminish the more one sees the media climate as hostile to one’s own opinion (Christen & Gunther, 2003). Research on the persuasive press inference and the hostile media phenomenon has concluded that perceptions of media slant can have a significant influence on perceptions of public opinion, even when personal opinion is taken into account (Christen & Gunther, 2003; Gunther & Christen, 2002). Although the present analysis does not measure respondents’ perceptions of the
hostility of the media climate, it does include actual measures of media content that assess the relative emphasis of news on one candidate versus another in one’s media context.

The question driving the next hypothesis is simply, what role do personal opinions play when media context is taken into account? Christen and Gunther’s (2003) conclusion that, “when accounting for mass media content, people do not always see others, and others’ opinions, the same way they see themselves,” (p. 429) is an apt summary of their findings, yet their study does not assess actual media content, but respondents’ perceptions of the slant of media content. Although such perceptions are a key mechanism in both hostile-media and persuasive press inference studies, an argument in the present dissertation is that we must assess individuals within their media context—the mediated social reality—in order to make conclusions about the effects of such content.

It has been asserted that people misjudge public opinion in favor of their own preferences (Gunther & Christen, 2002). Although social projection effects are often presumed to be “misjudgments,” recent research has suggested that social projection can actually increase accuracy about perceptions of public opinion (Jones, 2004). For instance, Shamir and Shamir (2000) concluded that projection and media effects are likely to interact in predicting perceptions of public opinion. Specifically, for those who are in the majority, the effects may not be based on perception at all, even if a person prefers the winning candidate. In this way, a person may simply be perceiving reality. If the media content in one’s market emphasizes the candidate of one’s own preference, it is possible for a person to make an accurate judgment about that preferred candidate’s
likelihood of winning. In other words, if a person prefers Candidate A, and there is more content in her media market about Candidate A, she is likely to conclude that Candidate A will win. This might be termed an “amplification” effect, whereby when the media context mirrors (at least in its relative emphasis on one candidate over another) one’s own opinion, a person becomes potentially more likely to perceive that the public will also have that opinion.

However, if a person prefers Candidate A, and there is more content in his media market about Candidate B, will projection effects persist? It is possible that the “reality” of one’s media context might diminish the effects of social projection, because people tend to see media coverage as mirroring public opinion (Gunther & Christen, 2002). This effect might be termed a “reality check” effect. For instance, it is possible that, when media content is divergent from one’s own opinion, one might concede to the reality of the situation and conclude that public opinion follows media content rather than projecting their opinion onto others.

Both of these possibilities suggest a convergence of individual perceptions of those who perceive Candidate A and Candidate B once the actual media environment is accounted for. However, it is uncertain which direction this effect will follow. That is, will we see an amplification effect or a reality-check effect? Based on these two possibilities, I propose one hypothesis: that media context will moderate the effect of candidate preference. In other words,

H5: Media context will significantly moderate the effect of individual candidate preference on perceived public opinion.
Although Hypothesis 2 proposes that the individual-level variable of personal candidate preference will have a significant effect on perceived public opinion, it is not certain whether newspaper use will have a significant effect on perceived public opinion once other variables and interactions are controlled for in the model. Thus, I ask,

RQ1: Will newspaper use be a significant predictor of perceived public opinion, after controlling for media content?

Predicting Political Participation

As outlined in Chapter 2, I expect that, at the individual level, political participation will be influenced by newspaper use, because of the strong history of research corroborating this relationship (e.g., McLeod, et al., 1996; Moy, et al., 2004; Teixeira, 1987). I also expect political participation to be influenced, to some extent, by individual candidate preference. This proposition is based upon the “rational choice model” of voting behavior, which suggests that individual preferences determine voting behavior (Aldrich, 1993). In the rational choice model, these preferences are translated into expected “utilities” and “costs” associated with a particular voting outcome. The general conclusion from research on the rational choice model is that the higher the cost, the better it is for a voter to abstain from casting a vote (Aldrich, 1993).

Also at the individual level, I expect perceptions of public opinion to play a role in predicting political participation. In their directions for future research, Books and Prysby (1991) suggested that research on political participation could benefit from examining this behavior within a contextual model. There are two related lines of research addressing both voting behavior and other types of political participation.
The nature of one’s surroundings—whether they are seen as supportive of one’s own view or not—does indeed influence voting behavior (Scheuch, 1969). The *game theoretic model* in political science echoes this sentiment, suggesting that voters take others’ decisions into account when deciding whether or not to vote. Thus, if a person believes everyone else will vote on some issue or for a specific candidate, he or she may decide not to vote (Aldrich, 1993). This is particularly true for people who perceive themselves to be in the majority, because they theoretically have greater incentives to “free-ride” (Palfrey & Rosenthal, 1983). A wealth of literature in political science has explored the intricacies of game theory as it applies to voter turnout, exploring such factors as perceived cost of voting, majority/minority status, constituency size, and uncertainty about the costs and preferences of other voters in making a decision to vote (e.g., Hansen, Palfrey, & Rosenthal, 1987; Ledyard, 1984; Palfrey & Rosenthal, 1983; Palfrey & Rosenthal, 1985). This research had developed precise models for predicting voter turnout in the aggregate with varying interpretations of the components of these models, but conclusions are consistent—voters tend to base their decision of whether or not to vote based upon the costs and benefits of voting, as well as the probability that their vote will be decisive (i.e., in a close race). Sometimes, this probability depends on perceptions of if and how others will vote.

The purpose of the present research is not to test the game theoretic model of voting, but rather to assess how the mediated information environment might contribute to whether or not a person will make the decision to vote. Thus, what is most relevant about this vast literature on game-theoretic voting models to the present discussion is that the decision of whether to vote or not is based, at least in part, upon one’s perceptions of
his or her social environment. As has been argued throughout this paper, people obtain their perceptions of the social environment through the media, particularly when it comes to political and public opinion information. Therefore, I argue that the information presented in the media can influence not only individuals’ perceptions of public opinion, but also their voting behavior, by reducing their uncertainty about if and how others will vote. This might result from something as simple as the relative emphasis the media place on one candidate over another.

In addition to voting behavior, perceptions of others’ opinions can have significant influence on other forms of political activity (Hayes, et al., 2006). As such, it is likely that individuals will base other political behaviors—such as posting signs in their yard or attending rallies—on what they perceive the opinion climate to be. Similar to Scheuch’s (1969) conclusions, Hayes, et al. (2006) found that individuals who perceived a hostile—or disagreeable—opinion climate were less willing to engage in public expressions of opinion, such as posting yard signs.

Hypotheses

I propose a baseline hypothesis that there will be significant differences in political participation between individuals in different media markets. This does not take into account actual media content, but simply examines whether there are significant differences in levels of participation among individuals in varying “social realities.” The purpose of this baseline hypothesis is to assess whether there are actually differences in participation behavior that can be potentially explained by group-level characteristics.
H₆: There will be significant group-level heterogeneity among media markets in individual political participation.

Yet, as with the hypotheses predicting perceived public opinion, the ultimate goal of these analyses is to examine whether there are cross-level interactions in predicting political participation. The next hypotheses address the interactions between media context and newspaper reading, and media context and perceived state-winning candidate.

Past research has demonstrated that reading the newspaper has a positive and significant effect on political participation (e.g., Teixeira, 1987). But what happens to this relationship when media content is taken into account? That is, does it matter which candidate is emphasized more in predicting whether a person will participate? I predict that there will be an interaction between newspaper reading and media content in one’s media market. According to the game-theoretic model, media content might reduce one’s uncertainty about which candidate is doing better or worse in one’s state. Thus, I propose that political participation will depend, to some extent, on the type of information one encounters. For example, if a person sees that her local newspaper is reporting less about her preferred candidate, she may decide to counter this perceived imbalance by putting up a yard sign or participating in some other way. This theoretical justification also draws from the persuasive press inference (Christen & Gunther, 2003; Gunther, 1998; Gunther & Storey, 2003), wherein people look to the media to obtain information about the climate of opinion around them, and as a result, base their cognitions and behaviors on media content.
H7a: Individual political participation will vary as a function of the interaction between individual newspaper reading and media context, controlling for other predictors.

I also propose that there will be an interaction between perceptions of public opinion and the content in one’s media context. Past research has demonstrated that individuals often base their political behavior decisions on what they perceive the climate of opinion to be around them. If it is true that the relative emphasis on one candidate over another in one’s media context affects one’s perceptions of the climate of opinion (as put forth in Hypothesis 3), these variables should interact to affect one’s levels of political participation. In other words, perceptions should vary as content emphasizes one candidate over another, and this interaction is hypothesized to influence political participation. This hypothesis is a relatively robust test of the game-theoretic model because it includes media context—the conduit for information about social reality. As outlined earlier, the main argument in the game-theoretic model of voting is that individuals make voting decisions about whether or not to engage in some political behaviors based upon, in some part, how they think others are will vote. Compounded by the social reality presented in one’s media context, this effect could potentially be stronger than simple perceptions alone. Moreover, the present analysis builds on this research by including other political behaviors, such as attending rallies and posting stickers or signs on one’s property.  

6 These measures are described in detail in Chapter 5.
This hypothesis also adds to the work of Scheufele and Eveland (2001), who found that opinion incongruity—or the perception of a hostile opinion climate—had a significant influence on some types of political participation. However, these effects were not supported in all of the authors’ models, and were sometimes counter-intuitive. This suggests that perceived public opinion, when measured as a comparison between one’s own opinion and the perception of the opinion climate, can have varying effects on political participation. Scheufele and Eveland (2001) even concluded that, “the role of perceptions of public opinion in political participation can vary across contexts, forms of participation, and individuals” (p. 42, emphasis added). Although Scheufele and Eveland’s focus was on the moderating factors of group membership and opinion strength, they imply that the context in which one resides might also moderate the effect of opinion incongruity.

An example might serve to demonstrate how media context might moderate the effects of opinion incongruity on participation. For instance, imagine that opinion incongruity exists for a person in Community A, such that this person perceives that others in Community A do not share her opinion of who will win the presidential election. It is possible that the effect of these perceptions on her participation in politics is moderated by the relative emphasis on one candidate over another in one’s media context. That is, if there is relatively more information about one candidate than another, this might exacerbate the effect of the existing opinion incongruity because it provides a glimpse into the presumably prevailing opinion climate. As a result, she might decide not to participate in politics by displaying stickers or signs, or even voting, so as to avoid isolation or because of other motivating factors. As such, media content should moderate
the effects of perceived opinion climate (defined, as in Scheufele and Eveland, as “opinion incongruity”) on political participation.

The spiral of silence also provides some justification for why perceptions and media context might interact to affect participation. According to this theory, individuals often silence their opinions in the face of a hostile opinion climate because of the fear of isolation or other social hazards, from “help refused to a lost stranger” to “slashed tires” (Noelle-Neumann, 1993, p. 56). When media context (i.e., the relative emphasis on one candidate over another) is added into the equation, we might see a spiral of silence effect on participation. In other words, when opinion incongruity is perceived—and the media context emphasizes one candidate over another—a person might conclude that the risks are simply too high to participate and choose not to overtly support a candidate through activities such as posting a yard sign or voting. On the other hand, when opinion congruity is perceived—and the media emphasize one candidate over another—a person might also choose not to participate because they choose to “free ride” (Mutz, 1998; Palfrey & Rosenthal, 1983). As such, a person might refrain from participation because he feels that he is in a safe majority and others will do the participating for him.

Regardless of the direction of this effect, it is based on the idea that the media context serves as one source of information about one’s social reality. Thus, based upon extant research on the game-theoretic model, the effects of opinion incongruity on participation, and the spiral of silence theory, I propose,

\[ H_{7b}: \text{Individual political participation will vary as a function of the interaction between opinion incongruity and media context, controlling for other predictors.} \]
Notably, this hypothesis does not predict a direction of political participation based on these variables. This is because there is more than one possible direction for this effect. That is, the direction of the incongruent/congruent opinion effect will likely vary depending on the relative emphasis on one candidate over another in one’s media context, but the direction of such an effect is not known. Therefore, Hypothesis 7b is more exploratory in nature, and does not predict which direction the effect of the interaction between incongruity and media context on political participation will take.

\[H_{7b}:\text{Individual political participation will vary as a function of the interaction between opinion incongruity and media context, controlling for other predictors.}\]

Notably, this hypothesis does not predict a direction of political participation based on these variables. This is because there is more than one possible direction for this effect. That is, the direction of the incongruent/congruent opinion effect will likely vary depending on the relative emphasis on one candidate over another in one’s media context, but the direction of such an effect is not known. Therefore, Hypothesis 7b is more exploratory in nature, and does not predict which direction the effect of the interaction between incongruity and media context on political participation will take.

Finally, I hypothesize that, because of the strong relationship between newspaper use and political participation in past research, this individual-level variable will stand out as having significant direct effects on participation, even when other individual- and contextual-level variables are entered into the model. As outlined in Chapter 2, decades of research have suggested that newspaper use has a positive and significant effect on political participation. Thus, I hypothesize a direct effect, whereby,
H8: Newspaper use will be a positive and significant predictor of political participation, controlling for both individual- and contextual-level predictors.

Placing Individual and Contextual Effects in a Contextual Analysis

*Developing a Multilevel Model*

One increasingly popular method for analyzing data at different levels of analysis is multilevel modeling. Advances in multilevel modeling can be used to assess cross-level linkages between macro- and micro-level data. One of the primary reasons for using multilevel models, according to Luke (2004), is if theory calls for it. Moreover, multilevel modeling offers the advantage of drawing attention to variance that might not otherwise be noticed (Southwell, 2005). Southwell suggested that a media campaign is a ripe area for using multilevel modeling to uncover individual and media effects. Unfortunately, “it is quite common to see published work where the theoretical approach is multilevel, but the data are collected and/or the analyses are performed at a single level” (Luke, 2004, p. 23).

At the first level of the proposed multilevel model, individual measures of media use and perceptions of the state-winning candidate are included. At the second level of this model are the contextual variables associated with media content. Such a method of analysis fits the theoretical framework of the cross-level linkages proposed here.

Figure 4.1 represents a model describing cross-level interactions between individual and contextual variables. At the individual level, media use is expected to influence perceptions of the state’s winning candidate. These perceptions in turn are
hypothesized to influence political behavior. These micro-micro relationships are not necessarily the purpose of such a model, however. An advantage of multilevel modeling is it can be used to assess the relationships between the contextual and individual variables (represented by the dashed lines). These relationships have not been fully explored in the literature using survey data. For example, Salwen (1998) examined perceptions of media influence controlling for individual media use, but did not account for the actual media content. He even suggested that the contrary findings for one hypothesis might “have been a function of issue or message attributes” (p. 275). Salwen’s is certainly not the only study to suggest that media use influences perceptions without examining media content, however (e.g., Lee, 2005) and those that acknowledge media content often measure it indirectly through asking respondents about their perceptions of media content (e.g., Christen & Gunther, 2003; Tsfati & Cohen, 2003).

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7 I specify “survey data” because, of course, experimental studies can account for message characteristics. However, it should go without saying that such experimental studies cannot examine differences among communities exposed to different media content.
Communication theorists have called for more theoretically robust models of
communication—particularly media—effects. Since many media effects, such as
perceptions of public opinion are perceived to be indirect (e.g., Gunther, 1998; Gunther &
Storey, 2003; Mutz, 1989, 1998), it becomes even more essential to include multiple
levels of influence. This advances communication theory beyond simple cross-sectional
and single-level analyses. Pan and McLeod (1991) claimed that the literature in
communication tends to produce metaconcepts—“conceptual conglomerates” that ignore
connections and levels. Cross-level models can help the field advance theory within
levels, find new within-level linkages, and make important connections between micro
and macro levels (Pan & McLeod, 1991). By incorporating individual-level variables into
a contextual analysis, we can avoid propagating the “myth” of the independent citizen, which ignores the “flesh and blood” of real electorates (Huckfeldt & Sprague, 1995, p. 8).

**Contextual Analysis as a Method for Assessing Cross-Level Influence**

Although “contextual analysis” has been labeled as a precursor to multilevel analysis (e.g., Guo & Zhao, 2000), when I use this term I am referring to the study of contextual effects as they have been defined above (in terms of geographic location) in concert with individual effects (Books & Prysby, 1991). In such a study, individual variables are distinguished from contextual ones in the terms of the measurement used to generate them (e.g., individual variables versus compositional, structural, or global variables). Kreft and de Leeuw (1998) also defined “contextual models” as those models with individual- and contextual-level characteristics.

The purpose of contextual analysis is to examine cross-level effects, claiming contextual effects only when individual effects have been fully accounted for (Books & Prysby, 1991; Cox, 1969). A contextual model is therefore necessarily a multilevel model (Burbank, 1995), but its Level-2 (or higher) unit is geographic context. Although multilevel models allow researchers to examine extra-individual contextual effects at the same time as individual ones (Luke, 2004), these levels are not restricted to contextual and individual levels. For example, a multilevel model may include two levels: one that represents time and one that represents individual characteristics, thus measuring individual change over time. Contextual analysis, as I am defining it, refers to a multilevel model with context as the macro-level unit and individuals at the micro level.
Contextual analysis developed from several studies that found contextual effects which did not fit into proposed analytical models (Books & Prysby, 1991). For example, Berelson, Lazarsfeld, and McPhee (1954) found that the Republican atmosphere in their Elmira study perpetuated itself through cross-pressures from the majority of Republicans in the area. Similarly, Butler and Stokes (1969) discovered striking differences in partisan preference depending on the class composition of different areas. What emerged from these early studies was an emphasis on behavioral interdependence, the importance of multiple levels of observation, and the significant meaning of cross-level linkages (Huckfeldt & Sprague, 1995).

The statistical technique of multilevel modeling allows data to be analyzed at different levels—such as individual and contextual levels. This method can also be used to assess cross-level linkages between macro- and micro-level data. Multilevel models also help resolve the confounding of individual and contextual levels by decomposing any observed relationship between the variables into separate Level-1 and Level-2 elements (Raudenbush & Bryk, 2002). In single-level regression, errors—as well as observations—are assumed to be independent. Yet this is often not the case in reality. Multilevel modeling can account for this non-independence, and actually includes it as an important component of the analysis (Park, Eveland, & Cudeck, in press). In this way, multilevel modeling reverses many of the standard assumptions we have about regression. Perhaps most importantly, because multilevel modeling allows for nonindependence among contexts, we can examine contextual variation in individual-level outcomes. In other words, we can statistically test whether living in one location has
significant effects on one’s perceptions of public opinion and political participation when compared to someone who lives in a different location.

These are some of the more technical benefits of using multilevel models, but theoretically, many phenomena in communication science are multilevel. For example, interpersonal communication often occurs within dyads, small groups, classrooms, or families. By employing a multilevel model, one can examine how such communication varies by those groups, including variables at the group level in order to explain that variation. Mass communication scholars, too, can benefit from “thinking multilevel.” In the present study, individuals are nested within media markets, which can vary depending on the content in that market. As Park, et al. (in press) observed, variability exists in newspaper content across communities and identical effects of newspaper reading cannot be predicted across those communities. This variation in newspaper content predicting varying effects among individuals is a prime example of how multilevel modeling can advance theory in media effects research.

Although some studies (e.g., Hoffman & Eveland, 2005; Kim & Ball-Rokeach, 2006; Paek et al., 2005) have incorporated multilevel modeling to examine community characteristics and media use, this method has not been applied systematically in understanding media content as contextual effects on perceptions of public opinion. In fact, to date, many communication studies employing multilevel analysis have used some proxy for communication content by aggregating individual responses to survey data, or by assessing community characteristics such as ethnic heterogeneity or residential stability (e.g., Kim & Ball-Rokeach, 2006). The present study builds upon previous research by including actual media content as a contextual-level predictor.
This study utilizes two sources of data. The first source of data is a collection of newspaper content related to the 2004 presidential campaign and election from August 24 to November 1, 2004. The second source of data comes from the American National Election Studies (National Election Studies, 2004) survey of Americans during this presidential election. The media content, or contextual level, is the “Level 2” of the multilevel model, and the individual survey data are “Level 1.” First, I describe the data collection procedures of each level of data. Then I outline the measurement of specific variables therein.

Data Collection Procedures

*Level 2: Contextual-Level Data*

*Newspaper Content*

Most important to measuring media content as a contextual variable is being able to compare Level-1 effects across different media markets with varying content in their daily newspapers. Variables of interest in the content analysis must correspond with data
collected at the individual level. Therefore, a “matching” process was undertaken in order to match individual cases from the ANES data file with newspapers in their geographic area. I selected the newspapers with the highest circulation for each Designated Market Area (DMA) as listed in the Standard Rate and Data Service for the year closest to that of analysis (2003). For individuals residing in communities with competing newspapers with equal or comparable circulation rates, I included both newspapers as “matching” their individual data. As such, an individual in Salt Lake City, Utah, for example, was matched to both the Salt Lake City Tribune and the Deseret News. The content in these newspapers was simply combined in analyses as one contextual unit.

Content for the present study was collected for the period two weeks prior to September 7 (August 24) through November 1, 2004. This was a purposive sample of content correlating with individuals in the survey data. A period of two weeks prior to the survey data collection was chosen to account for effects of the media on individuals toward the first part of the study.

The process of “matching” newspapers to individual cases from the ANES data file was as follows. First, upon obtaining information about the Primary Sampling Unit (PSU) for each individual respondent in the ANES 2004 survey file, I cross-referenced that metro area with information obtained from the Standard Rate and Data Service (2003). If that area was not included in the metro areas, I looked up the county in which the area was located. Then, for each individual census tract, I used the U.S. Census 2000 Factfinder (U. S. Census, 2000) and Social Explorer (2006) to map whether that census tract was indeed included in the metro area specified by the PSU. First, the U.S. Census Factfinder “geo within geo” selection category was used in order to select states, then
specific census tracts within each state. The decision factor was whether the census tract was in either the “urban area” or “place” as specified by the U.S. Census that matched the primary sampling unit given by ANES. The “urban area” classification is a collective term that cuts across other hierarchies and can be in metropolitan or non-metropolitan areas. The “place” is a concentration of population either legally bounded as an incorporated place—which have legal descriptions of borough, city, town, or village—or identified as a “Census Designated Place” (U. S. Census, 2000). If the census tract included pieces of either the urban area or place, it was included. Only if the census tract did not include either urban area or place associated with the primary sampling unit was it excluded. If it was unclear from Factfinder whether the census tract should be included, I used Social Explorer (2006) to confirm. 8

I then selected the newspaper(s) for each metro area that had the highest circulation figures from the Standard Rate and Data Service (2003). If the area was rural, ANES data were collected by county, so I used the SDRS (2003) county-area analysis and cross-referenced with either the American Factfinder or Social Explorer to confirm that the census tract was indeed in that county and not near other metro areas. I also checked the SDRS (2003) for adjacent counties if census tracts bordered other counties; if a newspaper included in those adjacent counties had greater circulation than the one(s) reported for the county of interest and were in the same state, it was also included. This

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8 Factfinder’s census tract maps do not permit zooming in and out, while Social Explorer’s maps permit zooming and also have choropleth functionality, which can indicate areas of greater population density such as metro areas.
followed the same procedure as if a media market had competing newspapers, such that content from both newspapers was included in the context matching that respondent.

A number of ANES cases were excluded before content data collection began for various reasons. One reason was that individual cases in certain census tracts did not fit in the metro or urban area, as outlined in the procedures detailed above. These census tracts (and the corresponding number of excluded cases) were census tracts 7101 and 131 (Flint, Michigan) in the Detroit Metropolitan Statistical Area, or MSA (17 cases); census tracts 125.03 and 153.02 (Florida) in the Lakeland-Winter Haven MSA (9 cases); census tract 230 in the Manchester-Nashua, NH MSA (3 cases); and census tract 4027.22 (Missouri) in the St. Louis MSA (6 cases). Two other cases were deleted simply because they were the only cases with a given newspaper, and it was deemed inefficient to include them. These were both in New Haven, CT in areas where the *Connecticut Post* and the *Waterbury Republican American* were listed as having the highest circulation, respectively.

Finally, a number of cases were deleted because their matching newspapers were not obtainable in available online databases. These newspapers were the (NJ) *Press of Atlantic City* (29 cases), Columbus (GA) *Ledger-Enquirer* (19 cases), Des Moines (IA) *Register* (22 cases), Shreveport (LA) *Times* (46 cases), Austin (MN) *Daily Herald* (47 cases), Meridan-Wallingford (CT) *Record Journal* (3 cases), (NY) *Journal News* (4 cases), Camden / Cherry Hill (NJ) *Courier Post* (3 cases), Saginaw (MI) *News* (29 cases), Greensburg (IN) *Daily News* (47 cases), and the Wheeling (WV) *Intelligencer/News Register* (12 cases). Three additional newspapers only provided content from the previous six months, so they and their corresponding cases were deleted: the *Boston Globe* (18
cases), *Los Angeles Times* (5 cases), and *New York Newsday* (15 cases). This resulted in a total of 827 individual cases, a loss of 385 cases from the original sample of 1,212. However, each of the remaining cases belongs to a group of other individuals who are matched to the same newspapers, which means they can still be analyzed in a multilevel model as specified in the goals of this study. Therefore, I continued with content data collection.

Decisions were also made regarding communities with more than one newspaper. There were two cities with two newspapers operated by the same company: *Detroit Free Press* and *Detroit News*, and the *Seattle Post-Intelligencer* and *Seattle Times*. In order to maintain a reasonable amount of content while also representing the content in those areas, one newspaper from each company was randomly selected to include in the sample. These newspapers were the *Detroit Free Press* and the *Seattle Times*.

Four other communities included more than one newspaper that were not run by the same company. These were Denver (*Denver Post* and *Rocky Mountain News*), New York (*New York Times* and *New York Daily News*), Salt Lake City, Utah (*Salt Lake Tribune* and *Deseret News*), and Boston/Worcester (*Boston Globe* and *Worcester Telegram & Gazette*). For both Denver and Salt Lake City, both newspapers were listed as having relatively equal rates of circulation, and thus the content in both newspapers were included for cases in those communities. In New York and Boston, the distribution of newspapers throughout the city varied by location, so cases were assigned newspapers based upon their location in the area and the highest corresponding circulation for that area.
Level 1: Individual-Level Data

2004 American National Election Studies Face-to-Face Survey

I chose this particular survey because of its sampling method. Employing multistage sampling, the 2004 NES has more individuals clustered in media markets than a comparable group of respondents sampled randomly without clustering (i.e., RDD).

In order to place individual survey respondents within media markets, it was necessary to request restricted geographical data from the ANES Board of Overseers. An application was submitted August 8, 2006 and approved September 13, 2006. An affidavit was signed notarized on September 18, 2006. IRB approval for the analysis was obtained October 12, 2006 (Project number 2006E0669).

The 2004 American National Election Studies (ANES) face-to-face pre-election survey was conducted September 7 to November 1, 2004. The area probability sample consisted of a cross-section of respondents that yielded 1,212 face-to-face interviews in the pre-election study. The interview lasted approximately 70 minutes. Post-election interviews averaged 65 minutes and were administered November 3 through December 20.

Data collection was conducted by the Survey Research Center (SRC) of the University of Michigan's Institute for Social Research. All interviewing was conducted in English with Computer-Assisted Personal Interviewing (CAPI) technology. All respondents were United States citizens aged 18 years or older by Election Day, November 2, 2004 (National Election Studies, 2006). The pre-election response rate was 66.1% and was calculated as the total number of interviews over the total number of eligible (and unknown eligibility) cases in the sample. The post-election response rate
was 88%. This figure is a re-interview rate, calculated as the total number of post-election interviews over the total number of pre-election interviews. These are unweighted response rates provided by ANES (2006).

Eligible cases must have resided in housing units in the 48 coterminous states.

Since this survey’s sampling design was a primary reason I chose it for analysis, it is worth explaining its process. ANES used a multi-stage area probability design with a sample selected from the SRC’s 1990 national sample design the 1980 SRC National Sample strata (non-MSA primary sampling units). The selection of PSUs for the 1990 SRC National Sample was based on the county-level 1990 Census Reports of Population and Housing. Primary stage units were assigned to 108 explicit strata based on MSA/NECMA (New England County Metropolitan Area) status, PSU size, census region, and geographic location within region. Each of the 44 PSUs is listed in Table 5.1.

<table>
<thead>
<tr>
<th>PSU</th>
<th>State</th>
<th>PSU</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaheim</td>
<td>CA</td>
<td>Knoxville</td>
<td>TN</td>
</tr>
<tr>
<td>Atlantic City</td>
<td>NJ</td>
<td>Lakeland-Winter Haven</td>
<td>FL</td>
</tr>
<tr>
<td>Baltimore</td>
<td>MD</td>
<td>Los Angeles</td>
<td>CA</td>
</tr>
<tr>
<td>Birmingham</td>
<td>AL</td>
<td>Manchester-Nashua</td>
<td>NH</td>
</tr>
<tr>
<td>Boston</td>
<td>MA</td>
<td>McAllen</td>
<td>TX</td>
</tr>
<tr>
<td>Buffalo</td>
<td>NY</td>
<td>Miami</td>
<td>FL</td>
</tr>
<tr>
<td>Chicago</td>
<td>IL</td>
<td>Milwaukee</td>
<td>WI</td>
</tr>
<tr>
<td>Chicot County</td>
<td>AR</td>
<td>Montgomery County</td>
<td>VA</td>
</tr>
<tr>
<td>Cleveland</td>
<td>OH</td>
<td>Mower County</td>
<td>MN</td>
</tr>
<tr>
<td>Columbus</td>
<td>GA</td>
<td>Nassau-Suffolk</td>
<td>NY</td>
</tr>
<tr>
<td>Dallas-Fort Worth</td>
<td>TX</td>
<td>New Haven</td>
<td>CT</td>
</tr>
<tr>
<td>Decatur County</td>
<td>IN</td>
<td>New York</td>
<td>NY</td>
</tr>
</tbody>
</table>

Continued

Table 5.1: Primary sampling units in the 2004 ANES survey.
The second stage of the 1990 SRC National Sample, used for the 2004 NES sample, was selected directly from extracted files for the selected PSUs from the 1990 U.S. Census summary file series STF1-B, which contain the total population and housing unit data at the census block level. The second-stage sampling units (SSUs), or “area segments,” were comprised of census blocks in both the MSA and non-MSA areas. Each SSU block was assigned a measure of size equal to the total 1990 occupied housing unit for the area. SSU blocks were assigned a minimum measure of 72 total housing units per MSA and a minimum of 48 per non-MSA. Second-stage sampling was performed with probabilities proportionate to the assigned measures of size (NES, 2006).

For the third stage of sampling, a listing was made of all housing units located within the physical boundaries of each area segment. The final equal probability sample of housing units was systematically selected from the housing unit listings for the sampled area segments. The 2004 sample design was selected from the 1990 SRC
national sample to yield an equal probability sample of 2,756 listed housing units. The overall probability of selection for the 2004 sample of households was 0.2575 in 10,000.

Finally, at the fourth stage, an interviewer prepared a complete listing of all eligible household members in a household and a single respondent was selected at random to be interviewed. No substitutions were permitted once a respondent was selected.

Although some contextual units have a relatively small number of individuals, multilevel modeling accounts for such variance. Because multilevel modeling is weighted by how much information is in the Level-2 units (even if only one individual is in a unit), the gamma estimates at Level 1 are more efficient, standard errors are larger, and explained variance is more interpretable. This means that even if some of the contextual units (i.e., the Level-2 units) have few cases, the calculations take this into account. Thus, the proportion of variance accounted for is greatest for the multilevel model, less for Level 2, and even less for Level 1. However, the reliability for the least squares estimates of each Level-1 coefficient will likely be small because there is a small number of individuals per contextual unit (Raudenbush & Bryk, 2002).

Measurement and Reliability

*Measurement of Variables in the Content Analysis*

In this study, context refers to a geographically bounded unit. Contextual effects are defined as those effects beyond individual characteristics that result from systematic alteration of information flow in one’s context, such that a person behaves or thinks
differently in one context when compared with a similar person in another context. This information flow is operationalized at the contextual level as media content in local newspapers.

An example might help to demonstrate the effects of such systematic differences in content based on geographic region. Imagine a community with one metro daily newspaper (e.g., The Columbus Dispatch). For all intents and purposes, this newspaper serves as the “media context” by which individuals learn about political events. This is not to say that individuals cannot obtain information elsewhere. But the important point is that this information is contextually based; individuals in Buffalo, New York will not be systematically exposed to the Columbus Dispatch as they would be to the Buffalo News. The simple fact is that information is locationally biased, and media content (even if it is subject to nationalized news norms) will provide information that is in many ways dependent on and reflective of its geographic location. Thus, media content is conceptually defined here as information dispersed to individuals via local newspapers that varies by context. For instance, a newspaper in a community where individuals are primarily Democratic may not focus a great deal of attention on a presidential election since (1) most residents will likely vote Democrat and (2) campaign activity is likely to be low. Meanwhile, a community evenly divided between Republicans and Democrats may see more campaign activity and in turn, more coverage in the local news about the election.

At the simplest level, an operational definition must establish that it is variable (Chaffee, 1991). Thus, a definition of media context must include variations across locations. Moreover, because media content is likely to have more variation between
local markets than national (Books & Prysby, 1991), only local news outlets will be included. Even limiting content to a local rather than national level, an operational definition must specify whether all forms of media will be included (i.e., television, magazines, newspapers, online publications) or if the analysis will be limited to one or a few of these forms. My operational definition will limit content to that found in local daily newspapers. This limitation is beneficial for two reasons. First, research has demonstrated that television news generally does not contain as much public affairs content as newspapers, so newspapers are more likely to cover campaign activity (Bernstein & Lacy, 1992). Second, a primary individual-level variable of interest in this study, political participation, is generally increased for those who pay more attention to newspapers (Moy, et al., 2004; Ostroff & Sandell, 1989).

Designated Market Areas (DMAs) will serve as the contextual unit of analysis. DMAs define markets at the local level and allow researchers to examine news coverage by selecting those newspapers with the greatest circulation by area (Long, et al., 2005). Long, et al. (2005) suggested that newspapers with the largest circulation have the largest reach and, in turn, the largest resource base at their disposal. The total daily circulation, which includes weekday and Sunday rates, was used as the reference for largest circulation (SRDS, 2003).

The content analysis coded for amount of campaign coverage, operationalized as the frequency of candidate mentions and computed as the ratio of Kerry-to-Bush mentions. Frequency of candidate mentions was coded as a simple word count of each candidate’s name (Kerry or Bush, or analogous terms) in the articles during the sampling period by media market. A dictionary with a specific set of keywords associated with
candidates was utilized, and the dictionary-creation process is outlined later in this chapter. Details on the content analysis are provided later.

**Selection and Reliability of Database Search Terms**

The content analysis occurred in two sampling stages. First, keywords were entered into the search functions of online newspaper databases to assess which terms retrieved the most inclusive sample of content (i.e., content related to the 2004 presidential campaign). The inclusiveness of each set of search terms was assessed by examining the precision (Stryker, et al., 2006) of that set of search terms. Precision is an estimate of the “conditional probability that a particular text is relevant, given that is retrieved” (Stryker, et al., 2006, p. 415). This stage essentially serves as the “filter” stage, through which articles applicable to the campaign are sampled. I set a minimum precision rate *a priori* at 80% (as exemplified in Stryker, et al., 2006). The precision percentage is computed by dividing the total amount of retrieved articles by the number that are relevant to the study.

However, precision is not the only concern when assessing whether a sample reflects the true population. Not only must we consider what was retrieved by the search term, but also what might have been excluded. Such a test is called “recall” (Stryker, et al., 2006) and can be conducted by using a more open set of search terms (e.g., “election”) on the same sample. Recall is an estimate of the “conditional probability that a particular text will be retrieved, given that it is relevant” (Stryker, et al., 2006, 414). Recall is computed by dividing the number of articles retrieved with the more inclusive search term by the number of articles retrieved by the expansive term. This figure, too,
was set a priori at 80%. Both recall and precision are important if the sample is to be as accurate a representation of the population as possible.

I used online databases available through The Ohio State University library to conduct the keyword searches during the specified time period. Initially, based on a thorough review of newspaper databases available through university library, I concluded that three databases (LexisNexis, Newsbank, and Newspaper Source) provided coverage for the majority of the newspapers in the sample. Only two newspapers (the San Francisco Chronicle and the Buffalo News) were available across the three databases. I concluded that these two newspapers would serve as sufficient tests for recall and precision across all the newspapers, since they could be compared across the databases.

A total of nine newspapers were only available through the database called “Newspaper Source,” which, at the beginning of recall and precision analyses, was presumed to be a reliable database. However, further examination revealed that Newspaper Source was not an appropriate database, since its search results differed dramatically from those of LexisNexis or Newsbank. All variations of limiters and expanders were tried, yet comparisons between this database and the others revealed that it did not provide a complete selection of available content.

To probe this assessment, I conducted a comparison of relevant articles using the same keyword search in the Orange County Register’s proprietary database (the only newspaper with such a database that is unavailable in any library database but Newspaper
This search revealed that only five articles were retrieved during the time period for Newspaper Source database, but 119 were found with the proprietary web site.9

This trims the sample to include only newspapers that are available through Lexis Nexis or Newsbank. Excluding the newspapers available through this database unfortunately resulted in a loss of cases. The newspapers available only in Newspaper Source (and their corresponding cases in the ANES data) were subsequently deleted from all analyses. These newspapers were the Dallas (TX) *Morning News* (15 cases), Eugene (OR) *Register Guard* (26 cases), Florida *Times Union* (22 cases), Fort Worth (TX) *Star Telegram* (3 cases), McAllen (TX) *Monitor* (20 cases), New Haven (CT) *Register* (5 cases), Orange County (CA) *Register* (17 cases), Waco (TX) *Tribune Herald* (17 cases), and the Nashua (NH) *Telegraph* (5 cases).

This resulted in a total sample size of 29 newspapers; 10,878 articles; 25 communities; and 697 individual cases in the ANES survey (see Table 5.2). Because this is still a relatively large sample, and does not systematically exclude smaller newspapers (i.e., the *Roanoke Times*, Florida *Lakeland Ledger*, *Arkansas Democrat-Gazette*, and other small papers are still included alongside larger papers like the *New York Times* and *Chicago Tribune*), it was deemed suitable to exclude those newspapers (and corresponding cases) that are only available through Newspaper Source. It should be reiterated that this sample was not intended to be representative because of the nature of the data analysis. The goals of the study were to match individuals with the newspapers

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9 Because these articles need to be purchased in order to be read, data were not collected from such proprietary web sites.
serving their communities, rather than to compose a systematic sample of newspaper content during the specified time period.

<table>
<thead>
<tr>
<th>Newspaper</th>
<th>Location</th>
<th>Total Circulation</th>
<th>Population in Metro Area</th>
<th>Cases in ANES survey</th>
<th>Number of articles in sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Arkansas Democrat Gazette</em></td>
<td>Little Rock, AR</td>
<td>190,543</td>
<td>592,000</td>
<td>30</td>
<td>469</td>
</tr>
<tr>
<td><em>Birmingham News</em></td>
<td>Birmingham, AL</td>
<td>153,172</td>
<td>926,000</td>
<td>55</td>
<td>171</td>
</tr>
<tr>
<td><em>Boston Globe</em></td>
<td>Boston, MA</td>
<td>478,735</td>
<td>6,120,000</td>
<td>18</td>
<td>205</td>
</tr>
<tr>
<td><em>Telegram &amp; Gazette</em></td>
<td>Worcester, MA</td>
<td>103,896</td>
<td>6,120,000</td>
<td>39</td>
<td>81</td>
</tr>
<tr>
<td><em>Buffalo News</em></td>
<td>Buffalo, NY</td>
<td>220,345</td>
<td>1,156,000</td>
<td>42</td>
<td>199</td>
</tr>
<tr>
<td><em>Chicago Tribune</em></td>
<td>Chicago, IL</td>
<td>689,026</td>
<td>8,373,000</td>
<td>25</td>
<td>566</td>
</tr>
<tr>
<td><em>Cleveland Plain Dealer</em></td>
<td>Cleveland, OH</td>
<td>368,322</td>
<td>2,246,000</td>
<td>21</td>
<td>260</td>
</tr>
<tr>
<td><em>Denver Post and Rocky Mountain News</em></td>
<td>Denver, CO</td>
<td>615,342</td>
<td>2,200,000</td>
<td>27</td>
<td>763</td>
</tr>
<tr>
<td><em>Detroit Free Press</em></td>
<td>Detroit, MI</td>
<td>364,853</td>
<td>4,450,000</td>
<td>13</td>
<td>393</td>
</tr>
<tr>
<td><em>Fresno Bee</em></td>
<td>Fresno, CA</td>
<td>164,815</td>
<td>961,000</td>
<td>23</td>
<td>187</td>
</tr>
<tr>
<td><em>Houston Chronicle</em></td>
<td>Houston, TX</td>
<td>545,727</td>
<td>4,345,000</td>
<td>28</td>
<td>400</td>
</tr>
<tr>
<td><em>Knoxville News Sentinel</em></td>
<td>Knoxville, TN</td>
<td>117,171</td>
<td>697,000</td>
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<td>146</td>
</tr>
<tr>
<td><em>Lakeland Ledger</em></td>
<td>Lakeland, FL</td>
<td>76,061</td>
<td>505,000</td>
<td>11</td>
<td>219</td>
</tr>
</tbody>
</table>

Note: The circulation for the *Seattle Times* includes circulation for the *Seattle Post-Intelligencer*, as they are listed together in SRDS (2003).

Table 5.2: Newspapers with location, circulation, population, cases in survey data, and articles in sample.
<table>
<thead>
<tr>
<th>Table 5.2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Manchester Union Leader</strong></td>
</tr>
<tr>
<td><strong>Miami Herald</strong></td>
</tr>
<tr>
<td><strong>Milwaukee Journal Sentinel</strong></td>
</tr>
<tr>
<td><strong>New York Daily News</strong></td>
</tr>
<tr>
<td><strong>New York Times</strong></td>
</tr>
<tr>
<td><strong>Philadelphia Inquirer</strong></td>
</tr>
<tr>
<td><strong>Richmond Times-Dispatch</strong></td>
</tr>
<tr>
<td><strong>Roanoke Times</strong></td>
</tr>
<tr>
<td><strong>Sacramento Bee</strong></td>
</tr>
<tr>
<td><strong>St. Louis Post-Dispatch</strong></td>
</tr>
<tr>
<td><strong>Salt Lake Tribune and Deseret News</strong></td>
</tr>
<tr>
<td><strong>San Francisco Chronicle</strong></td>
</tr>
<tr>
<td><strong>Seattle Times</strong></td>
</tr>
<tr>
<td><strong>Washington Post</strong></td>
</tr>
</tbody>
</table>
Precision and recall estimates were conducted prior to downloading articles from the online databases, therefore these results are presented only for the two newspapers (the *San Francisco Chronicle* and the *Buffalo News*) available in all three original databases.

In LexisNexis, the search was conducted by selecting “U.S. News” then the state where the newspaper was published, and pasting the name of the newspaper in the “search this publication title” box. The search term from Table 5.3 was entered into the search box, the dates of August 24, 2004 to November 1, 2004 were entered, and “Full text” was selected in order to include all relevant articles. Although this method might arguably reduce precision (because it returns more irrelevant articles), it is the only search common between the Newsbank and LexisNexis databases. In Newsbank, I used the “Advanced Search” function after selecting the specified newspaper and followed the same steps as in LexisNexis.
No. | Keyword Search Term Sets
---|---
1 | president! AND elect!
2 | president! AND race
3 | president! AND campaign
4 | president! AND vot!
5 | Kerry AND elect!
6 | Kerry AND race
7 | Kerry AND campaign
8 | Kerry AND vot!
9 | Bush AND elect!
10 | Bush AND race
11 | Bush AND campaign
12 | Bush AND vot!

Note: Exclamation points are used for truncated words.

Table 5.3: Keywords for content analysis sample selection by set.

I systematically selected 10% of the returned articles using a skip number based on the total number of articles retrieved from the search. This is essentially a test of reliability, and since 10 to 20% is considered a reasonable amount for reliability analysis according to Wimmer and Dominick (1997), 10% of the raw number of cases is considered a suitable number here. Thus, the sampling method for precision and recall estimates was every tenth article retrieved from August 24 to November 1, 2004, for the first set of search terms in Table 5.3 above. I reviewed each of these sampled articles for relevance using the criteria for inclusion and exclusion in Table 5.4. I then calculated the precision estimate for by dividing the number of relevant items by the total number of items returned in a search (see Stryker, et al., 2006).
Since this is an iterative process, I followed the above procedure with the other search terms in Table 5.3. Precision results for all search terms across the two reliable databases (LexisNexis and Newsbank) are provided in Table 5.5.

<table>
<thead>
<tr>
<th>INCLUDED</th>
<th>EXCLUDED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Must mention presidential campaign</td>
<td>Sports stories (in Sports section)</td>
</tr>
<tr>
<td>Letters to the editor, but separate out letters in separate files (often appear in one document file on databases)</td>
<td>Repeated articles (sometimes the databases return repeats)</td>
</tr>
<tr>
<td>Voting/participation in campaign 2004 (must mention presidential campaign)</td>
<td>Nader (third-party candidate) campaign news, unless it mentions anything about Bush or Kerry campaigns</td>
</tr>
<tr>
<td>Spouses, families, and vice presidential candidates, only if about presidential campaign</td>
<td>Stories of Bush administration business that are unrelated to the campaign (i.e., no mention of campaign)</td>
</tr>
<tr>
<td>Related movie reviews and TV reviews</td>
<td>Online-only content (listed in heading of article)</td>
</tr>
<tr>
<td>Stories about comedy, plays, etc. as long as it relates to the campaign</td>
<td>TV, movie, or book listings, or single quotes from TV shows (i.e., late-night barbs)</td>
</tr>
<tr>
<td>Text of photographs / graphics are included. If they are in letters to the editor, they are coded only once (in one letter)</td>
<td>Wire or externally produced stories (some stories list local content “with AP” or the like. This was included, as long as the article included a local source—either staff or a byline associated with the newspaper. If a wire or external source was not identified, the article was included.</td>
</tr>
</tbody>
</table>

Table 5.4: Criteria for inclusion and exclusion applied in recall/precision tests and content collection.
Table 5.4 continued

<table>
<thead>
<tr>
<th>Graphics-only pieces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of contents / inside teasers</td>
</tr>
<tr>
<td>Anything in Food section (e.g., election night recipes)</td>
</tr>
<tr>
<td>Jeb Bush stories (unless dealing with 2004 presidential campaign)</td>
</tr>
<tr>
<td>Quizzes / test your campaign knowledge</td>
</tr>
<tr>
<td>Calls from the newspaper for submissions of letters (unless the letters were included)</td>
</tr>
<tr>
<td>Almanac (what happened on this day, or timelines of historic campaigns)</td>
</tr>
<tr>
<td>Lists of headlines from previous week(s)</td>
</tr>
</tbody>
</table>

Articles were assessed for precision based on the inclusion and exclusion criteria outlined above in Table 5.4. These criteria were selected primarily before data collection, with the exception of items that only became obvious during data collection (such as the presence of repeated articles or online-only content). If it was not apparent from the headline and description of story as to whether an article should be included, I clicked on the story and searched for the search terms (using the “Find” function) to check the keyword in context. This allowed me to assess whether the article should be included.
### Table 5.5: Precision estimates for each search term.

<table>
<thead>
<tr>
<th>Search Term</th>
<th>Newspaper</th>
<th>Database Name</th>
<th>Number relevant articles</th>
<th>Total articles returned</th>
<th>Precision Estimate (%)</th>
<th>Average precision estimate by database</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRESIDENT! AND ELECT!</td>
<td>San Francisco Chronicle</td>
<td>LexisNexis</td>
<td>43</td>
<td>82</td>
<td>52.4</td>
<td>51.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Newsbank</td>
<td>40</td>
<td>79</td>
<td>50.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buffalo (NY) News</td>
<td>LexisNexis</td>
<td>19</td>
<td>43</td>
<td>44.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Newsbank</td>
<td>19</td>
<td>38</td>
<td>50</td>
<td>47.1</td>
</tr>
<tr>
<td>PRESIDENT! AND RACE</td>
<td>San Francisco Chronicle</td>
<td>LexisNexis</td>
<td>15</td>
<td>27</td>
<td>55.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Newsbank</td>
<td>12</td>
<td>27</td>
<td>44.4</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>Buffalo (NY) News</td>
<td>LexisNexis</td>
<td>4</td>
<td>12</td>
<td>33.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Newsbank</td>
<td>6</td>
<td>12</td>
<td>50</td>
<td>41.7</td>
</tr>
<tr>
<td>PRESIDENT! AND CAMPAIGN</td>
<td>San Francisco Chronicle</td>
<td>LexisNexis</td>
<td>43</td>
<td>56</td>
<td>65.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Newsbank</td>
<td>40</td>
<td>66</td>
<td>71.4</td>
<td>68.3</td>
</tr>
<tr>
<td></td>
<td>Buffalo (NY) News</td>
<td>LexisNexis</td>
<td>19</td>
<td>32</td>
<td>59.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Newsbank</td>
<td>17</td>
<td>23</td>
<td>73.9</td>
<td>66.6</td>
</tr>
</tbody>
</table>

**Note:** Precision estimates were obtained by dividing the total number of relevant articles by the total number of articles returned. The most precise estimate is in bold.
<table>
<thead>
<tr>
<th>Search Term</th>
<th>San Francisco Chronicle</th>
<th>LexisNexis</th>
<th>Newsbank</th>
<th>LexisNexis</th>
<th>Newsbank</th>
<th>LexisNexis</th>
<th>Newsbank</th>
<th>LexisNexis</th>
<th>Newsbank</th>
<th>LexisNexis</th>
<th>Newsbank</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>32</td>
<td>61</td>
<td>52.4</td>
<td></td>
<td>41</td>
<td>63</td>
<td>65.1</td>
<td></td>
<td>52.4</td>
<td></td>
</tr>
<tr>
<td>Presidents AND Vote!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerry OR Bush AND Elect!</td>
<td></td>
<td>44</td>
<td>57</td>
<td>77.2</td>
<td>73.4</td>
<td>41</td>
<td>59</td>
<td>69.5</td>
<td></td>
<td>69.5</td>
<td></td>
</tr>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerry OR Bush AND Race</td>
<td></td>
<td>12</td>
<td>17</td>
<td>70.6</td>
<td>66.3</td>
<td>13</td>
<td>21</td>
<td>61.9</td>
<td>66.3</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kerry OR Bush AND Campaign</td>
<td></td>
<td>41</td>
<td>51</td>
<td>80.4</td>
<td>84.4</td>
<td>38</td>
<td>43</td>
<td>88.4</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>18</td>
<td>22</td>
<td>81.8</td>
<td></td>
<td>16</td>
<td>18</td>
<td>88.8</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

I conducted the recall test only on the search term that was most precise, since it is neither efficient nor necessary to test the recall of the other search terms, given that
they were not sufficiently precise. As shown above in Table 5.5, the most precise search term was “KERRY OR BUSH AND CAMPAIGN.”

These precision estimates meet the *a priori* requirements that precision should be higher than 80%. In fact, the average precision estimates for the “KERRY OR BUSH AND CAMPAIGN” term are, over both databases and newspapers, 84.4% and 85.3%. But, in order to assess what articles might have been excluded by such a precise search, an assessment of recall is also necessary. To make the search more inclusive, as put forth by Stryker, et al. (2006) in their recommendations for assessing recall, I searched only for “KERRY OR BUSH.” This test was conducted across both LexisNexis and Newsbank databases, and for both the *San Francisco Chronicle* and the *Buffalo News*. Recall estimates were obtained by dividing the total number of relevant number of stories from the precision search by the additional relevant stories returned in the recall search. For example, in Newsbank, 42 *San Francisco Chronicle* articles were returned using the “KERRY OR BUSH” search term. With the “KERRY OR BUSH AND CAMPAIGN” search term, this database returned 38 *San Francisco Chronicle* articles; 38 divided by 42 is 90.5 (see Table 5.6). This estimate allows us to examine whether there are enough articles that may not have been returned by the more precise search term that requires reassessment of the term. Yet, the average recall estimate was well above the *a priori* standard of 80%, at 88.2% averaged across both databases and newspapers (see Table 5.6). Equipped with suitable precision and recall estimates for the search term, I moved forward with the next component of the study: the content analysis.
<table>
<thead>
<tr>
<th>Newspaper</th>
<th>Database</th>
<th>Total Relevant Stories</th>
<th>Recall percentage</th>
<th>Average recall</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>San Francisco Chronicle</em></td>
<td>LexisNexis</td>
<td>41</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Newsbank</td>
<td>42</td>
<td>90.5</td>
<td>95.3</td>
</tr>
<tr>
<td><em>Buffalo News</em></td>
<td>LexisNexis</td>
<td>20</td>
<td>90</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Newsbank</td>
<td>22</td>
<td>72</td>
<td>81</td>
</tr>
</tbody>
</table>

Table 5.6: Recall estimates for the most precise search term.

*Content Analysis Coding and Reliability*

The second stage of the content analysis used the Wordstat computerized content analysis software (Provalis Research, 2005). This software can be used to categorize text by creating customized dictionaries, which aid searching for specific content. Data can be retrieved as either tabular format (in Excel or delimited text files) or as text reports (in rich text format). Analyses similar to those in any other statistical program can be run with Wordstat’s counterpart, Simstat.

Articles were archived in Microsoft Word files before being transported to Simstat. The content of the article—excluding words like “byline,” “headline,” and “load date” that appear in LexisNexis and Newsbank files—were entered into the “Text” variable in Simstat. Also coded was the newspaper name, a numerical ID associated with each newspaper, the date of the article, and the section of the newspaper. There were seven sections coded: (1) Front Page / News / Politics / Section A / Section B; (2) Metro / Local / State; (3) Business / Financial; (4) Arts / Entertainment / Weekend / Scene / Gossip / Style / Life / Tempo; (5) Editorials / Columns; (6) Letters to the Editor /
“Outburst” / “Your Turn” (sections in the Miami Herald and Buffalo News of readers’ comments); and (7) other. These categories were created based on an initial review of each newspaper’s sections in order to place them in common categories.\(^{10}\)

Once all content was entered into the computer program, three dictionaries were created in order to assess terms associated with either (0) Bush or (1) Kerry. The dictionary creation process included four stages. First, I purposefully included desired and related terms (such as “Bush” or “Kerry”).

Second, a Keyword-in-Context (KWIC) analysis was performed to assess whether any of these terms were included in inappropriate contexts. These phrases were added to the default “Exclusion” dictionary so they would not be included in the analyses. The Exclusion dictionary includes common terms that are not relevant to the content analysis.

Finally, the last stage of dictionary creation utilized the software’s “Feature Extraction” tool. This tool extracted single words and phrases in the actual sample of content that were unidentifiable by any dictionary. I examined each word and phrase produced by this analysis and either added it to the appropriate dictionary (e.g., “W” or “Bushies”). Phrases and words that appeared more than 20 times were examined to determine whether they should be included or excluded.\(^{11}\) The dictionary categories and their corresponding terms are in Table 5.7.

---

\(^{10}\) One newspaper, the Boston Globe, did not list sections in the Newsbank files, so all section information for this newspaper was coded as missing.

\(^{11}\) The “more than 20 times” limit was selected based on a review of words/phrases above and below this limit, and it was determined that words repeated less than 20 times were much less likely to include any relevant terms.
<table>
<thead>
<tr>
<th>George Bush</th>
<th>John Kerry</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUSH</td>
<td>EDWARDS</td>
</tr>
<tr>
<td>BUSH CAMPAIGN</td>
<td>EDWARDS’S</td>
</tr>
<tr>
<td>BUSH’S</td>
<td>JOHN EDWARDS</td>
</tr>
<tr>
<td>BUSH’S CAMPAIGN</td>
<td>JOHN KERRY</td>
</tr>
<tr>
<td>BUSH-CHENEY</td>
<td>JOHNNKERRY</td>
</tr>
<tr>
<td>BUSH-CHENEY CAMPAIGN</td>
<td>KERRY</td>
</tr>
<tr>
<td>BUSH-CHENEY’S</td>
<td>KERRY CAMPAIGN</td>
</tr>
<tr>
<td>BUSHES</td>
<td>KERRY’S</td>
</tr>
<tr>
<td>BUSHIES</td>
<td>KERRY’S CAMPAIGN</td>
</tr>
<tr>
<td>CHENEY</td>
<td>KERRY-EDWARDS</td>
</tr>
<tr>
<td>CHENEY’S</td>
<td>KERRY-EDWARDS CAMPAIGN</td>
</tr>
<tr>
<td>CHENEY’S</td>
<td>KERRY-EDWARDS’S</td>
</tr>
<tr>
<td>DUBYA</td>
<td>KERRYS</td>
</tr>
<tr>
<td>GEORGE BUSH</td>
<td>SENATOR EDWARDS</td>
</tr>
<tr>
<td>GEORGE W BUSH</td>
<td>SENATOR JOHN EDWARDS</td>
</tr>
<tr>
<td>GEORGEWBUSH</td>
<td>SENATOR JOHN F KERRY</td>
</tr>
<tr>
<td>LAURA BUSH</td>
<td>SENATOR JOHN KERRY</td>
</tr>
<tr>
<td>PRESIDENT BUSH</td>
<td>SENATOR KERRY</td>
</tr>
<tr>
<td> PRESIDENT GEORGE BUSH</td>
<td>TERESA HEINZ KERRY</td>
</tr>
<tr>
<td> PRESIDENT GEORGE W BUSH</td>
<td>THE KERRY</td>
</tr>
<tr>
<td>THE BUSH</td>
<td>THE KERRY CAMPAIGN</td>
</tr>
<tr>
<td>THE BUSH CAMPAIGN</td>
<td>THE KERRY-EDWARDS</td>
</tr>
<tr>
<td>THE BUSH-CHENEY</td>
<td></td>
</tr>
<tr>
<td>VICE PRESIDENT CHENNEY</td>
<td></td>
</tr>
<tr>
<td>VICE PRESIDENT DICK CHENNEY</td>
<td></td>
</tr>
<tr>
<td>W</td>
<td></td>
</tr>
<tr>
<td>W.</td>
<td></td>
</tr>
</tbody>
</table>

Table 5.7: Dictionary categories and corresponding terms.

In order to test that these dictionaries were reliably capturing content, I ran the dictionary analysis on a random subset of the articles (10%, or 1,031 articles) from the sample selected in Stage 1 of the content analysis. This sample was selected randomly using the Wordstat computerized random sampling feature. A simple dichotomous
variable (present, not present) was coded to identify whether articles included references to the Kerry or Bush campaigns.

This subset was then manually coded, also coding for references to Kerry or Bush, by one coder. This reliability test assures that the keywords in the computerized content analysis indeed identified articles that included stories on Kerry or Bush. The manual coding simply coded whether articles contained the terms associated with either candidate. The terms in Table 5.7 were used as a reference for coding.

The results from the manual coding were compared to the computerized frequency assessment. The reliability between the computer sample and the human-coded sample was set *a priori* at above .70. Reliability was tested after about 20% (N = 176) of the articles had been manually coded. Just as when two or more coders are coding and regularly assess their reliability to be sure they are on the same track, it is necessary to periodically assess whether the human and computer coders are coding reliably, in order to make changes if necessary. Reliability for Kerry and Bush mentions were both above .90 (Krippendorf’s alpha). Final Krippendorf’s alphas were .94 for Kerry and .94 for Bush.\(^{12}\)

Once this reliability analysis was complete, and the computerized dictionaries were deemed sufficiently reliable, the actual coding of content began. This involved running the Wordstat software and downloading the frequency counts of Kerry and Bush, into SPSS, similar to the reliability analysis. This information was then computed into rates-per-thousand words.

---

12 Final reliability figures take these dictionary changes into account.
Measurement of Variables in the Survey Data

Independent Variables at the Individual Level

News Use

News media use has been associated with higher levels of community and political participation (e.g., Kang & Kwak, 2003; Moy et al., 2004). When such behavior is examined within a contextual model, new relationships are likely to be found. Specifically, Huckfeldt & Sprague (1995) have stated that individuals more attentive to campaigns are more likely to be affected by context. This suggests that the content in different media contexts might moderate this positive association between media use and political behavior, such that individuals with otherwise similar media and political behaviors are affected differently based upon the media context in which they are located.

My hypotheses proposed that newspaper use would moderate the contextual effects, because these contextual effects are limited to the extent that individuals attend to the media (Cox, 1969). Therefore, I included the item about newspaper use of from the ANES 2004 data (Variable # V043019), which asked how many days in the past week the respondent read a print newspaper ($M = 2.87, SD = 2.81$).

Candidate Preference

In the model predicting political participation, I controlled for individual candidate preference. In the ANES survey, this was measured as, “Who do you think you will vote for in the election for President?” or if the respondent indicated he or she was not likely to vote, “If you were going to vote, who do you think you would vote for in the election for President?” (Variable # V043203). Of all respondents, 46% answered Kerry
and 45% answered Bush; 1.2% responded with Ralph Nader; 1.8% answered with no
candidate or some other candidate; and 5.8% did not know or refused to answer. As
outlined in the formal hypotheses, I predicted that candidate preference would also play
some role in how a person predicts public opinion. The inclusion of this variable in the
model is to account for social projection, or the phenomenon of predicting public opinion
based upon one’s own preferences.

**Dependent Variables at the Individual Level**

*Perceptions of Public Opinion*

Perceived public opinion was measured by individual responses to the ANES
2004 question, “Which presidential candidate will carry this state?” (Variable #
V043095). Of all respondents, 46.5% responded with Kerry; 45.6% responded with Bush;
.2% responded with Ralph Nader; and 7.8% did not know or refused to answer.

*Opinion Incongruity*

The measure of opinion incongruity, which was utilized for Hypothesis 7b, was
based upon the operationalization employed by Scheufele and Eveland (2001). This
measure compared one’s own opinion and his or her perceptions of the opinion climate
and labeled that comparison as either congruous, when one perceives oneself to be in the
majority, or incongruous, when one perceives oneself to be in the minority. As such,
incongruity was present when own opinion and perception differed, while congruity was
present when own opinion and perception were the same. A binary variable was created
to represent this comparison, with the former labeled as “0” and the latter as “1.” As
qualified by Scheufele and Eveland (2001), it is important to note that this measure is an
indirect measure of incongruity because it was calculated post hoc. The mean for this measure was .63 (SD = .48), suggesting that more respondents saw their own opinions as congruous with others.

**Political Participation**

Political participation was measured by whether respondents participated in the 2004 campaign. These questions were asked in the post-election survey, with 1,066 of 1,212 respondents participating. Specific question wording in the ANES 2004 interviews was (coded 1 for yes and 0 for no): (1) “Did you go to any political meetings, rallies, speeches, dinners, or things like that in support of a particular candidate?” (Variable # V045011, \( M = .08, SD = .27 \)); (2) “Did you wear a campaign button, put a campaign sticker on your car, or place a sign in your window or in front of your house?” (Variable # V045012, \( M = .21, SD = .41 \)); (3) “Did you do any (other) work for one of the parties or candidates?” (Variable # V045013, \( M = .03, SD = .18 \)); and (4) “During an election year people are often asked to make a contribution to support campaigns. Did you give money to an individual candidate running for public office?” (Variable # V045014, \( M = .10, SD = .30 \)); “Did you give money to a political party during this election year?” (Variable # V045015, \( M = .11, SD = .45 \)); and “Did you give any money to any other group that supported or opposed candidates?” (Variable # V045016, \( M = .07, SD = .34 \)).

In terms of the voting item (which was included in this scale of political participation), respondents were randomly assigned either a traditional measure or an experimental one. The traditional measure was worded, “In talking to people about elections, we often find that a lot of people were not able to vote because they weren't registered, they were sick, or they just didn't have time. How about you—did you vote in
the elections this November?” The answers were coded either yes, no, or don’t know/refused to answer. The experimental version had the same introduction, but followed with, “Which of the following statements best describes you: one, I did not vote (in the election this November); two, I thought about voting this time but didn't; three, I usually vote, but didn't this time; or four, I am sure I voted?” A summary of the experimental item and the traditional item were created by ANES and was coded 1 (voter), 2 (nonvoter, registered), 3 (nonvoter, not registered), 4 (nonvoter, don’t know or refused to answer if registered), 5 (nonvoter, not required to register), or 6 (don’t know or refused to answer if voter) (Variable # V045018x). Responses 2, 3, 4, and 5 were coded as nonvoter (0), 1 was coded as voter, and 6 was coded as missing ($M = .79, SD = .41$).

These items were summed to create a scale of political participation in the 2004 election.

---

**Sample Descriptives**

As mentioned earlier, the total ANES 2004 Election study sample was reduced because of various issues in matching respondents to their media market. The final sample size was 697. Table 5.2 in the previous chapter lists the number of respondents per each media market.

The mean age of respondents in this sample was 45.67 ($SD = 16.90$) and the median response to level of education was “More than 12 years of schooling, no higher degree.” Of all respondents in the final sample, 498 (71.4%) reported being white, 122 (17.5%) reported being black, and 33 (4.7%) reported being Hispanic, with other categories of combined race, unknown, or refused answers comprising the remainder.
Median household income was $50,000 to $59,000 and on average, respondents reported living in their communities 22.78 years ($SD = 18.59$) and in their current homes 11.1 years ($SD = 12.64$).

These demographics did not differ from the full ANES data set ($N = 1212$) in any major way. There, the mean age was 47.27 ($SD = 17.14$), two years older, and the median education level as well as the median household income were the same as the sub-sample. White was also the most frequently reported race (72.3%), followed by black (14.9%), and Hispanic (6.7%). These were minimally different from the sub-sample. Respondents in this full data set reported living in their communities just over a year longer than the sub-sample ($M = 24.23$ years, $SD = 19.37$) and in their current homes just about as long as in the sub-sample ($M = 11.69$ years, $SD = 13.04$). Thus, I established that the sub-sample was not remarkably different from the original data set, and moved forward with analyses.

The variables entered into the analytical models were also compared to the full data set. The first dependent variable was perceived state-winning candidate. In the full data set, 45.6% responded with Bush and 46.5% responded with Kerry. This pattern was similar in the sample, where a slightly larger portion of respondents ($n = 328$, or 47.1%) answered Kerry, and 319 (45.8%) answered Bush. One respondent answered Nader (.1%) and 49 did not know (7%). These values were listed as missing, so as to be able to interpret the outcome more logically.

The second dependent variable was political participation. Because the topic of the ANES 2004 survey was the 2004 presidential campaign, these items all pertain to campaign activity up to and including Election day. In the full data set, 1,066 respondents
answered these post-election questions. Of the respondents in the sample, 621 responded to the post-election survey with the political-participation questions. This included the seven questions (coded 1 for “yes” and 0 for “no”) on whether the respondent went to meetings or rallies ($M = .07$, $SD = .25$ in the sample and $M = .08$, $SD = .27$ in the full data set); displayed stickers or signs ($M = .21$, $SD = .41$ in both the sample and full data set); contributed money to a candidate (Sample $M = .08$, $SD = .28$ and Data $M = .10$, $SD = .30$), party (Sample $M = .09$, $SD = .29$ and Data $M = .11$, $SD = .45$), or some other group (Sample $M = .08$, $SD = .27$ and Data $M = .07$, $SD = .34$); did any other campaign work for a candidate or party (Sample $M = .04$, $SD = .19$ and Data $M = .03$, $SD = .18$); and voted (Sample $M = .78$, $SD = .42$ and Data $M = .79$, $SD = .41$). Since these items were nearly identical in the full data set and sample, it was determined that they were suitable for analysis in the sample. The items were combined into an additive scale ($M = 1.34$, $SD = 1.19$), and this scale had a Cronbach’s alpha of .62. Although this is marginally reliable, the scale was not improved by removing any of the items (except a .02 increase in alpha when voting was removed). It is not uncommon for scales of political and civic participation to be marginally reliable. Studies have reported alphas under .70, such as .65 (Shah & Scheufele, 2006), .67 (Eveland & Scheufele, 2000), and .68 (Moy, et al., 2004). Regardless, interpretations of results will be made with caution as a result of the low internal consistency among these items.\(^{13}\)

\(^{13}\)Because voting often has a different distribution from other participation measures, this is sometimes included as a separate measure. For the purposes of the present study, any political activity during the campaign up to and including Election Day was of interest. However, separate analyses were run with a binary outcome (either participated—including voted—or did not participate) and results were nearly the same, lending credence to the use of this measure.
Several variables from the Level-1 survey data were included in the analytical models. First was respondent newspaper use. In the survey data, respondents reported reading the newspaper an average of 2.87 days in the past week \((SD = 2.81)\). This was very similar to the responses in full data set, \(M = 3.08, SD = 2.9\). Second was candidate preference. When asked who would get their vote for president (i.e., their personal candidate preference), 341 (48.9%) responded with Kerry, while 299 (42.9%) responded with Bush.\(^{14}\) In the full data set, 46% responded with Kerry and 45% responded with Bush. There is a slightly larger difference between the sample and the data set on this variable, but it is not deemed to be troublesome, particularly since the direction of favor is the same.

*Missing Values Analysis*

It is worth reiterating that the political participation questions were asked in a post-election survey of 1,066 respondents (or 88% of the original sample). The sample in the present study was also further reduced by the media-market matching. In order to assess whether these data were missing completely at random (MCAR) or missing at random (MAR)—which HLM is equipped to handle (Raudenbush & Bryk, 2002, p. 199)—I ran a Missing Values Analysis in SPSS (2006). This analysis allows one to assess whether data are MCAR by using Little’s MCAR test. If the chi-square test is not significant, one can assume that the data are MCAR and move forward with analyses. I

\(^{14}\) In the sample, only 7 (1%) responded with Ralph Nader, 5 said “none” (.7%), 6 (.9%) responded with some other candidate, and 39 (5.5%) either didn’t know or refused to answer. Only Bush and Kerry responses were assessed in the multilevel analyses.
included standard demographic variables in this test (age, education, household income, and race) along with the combined political participation measure, and results suggested that the data were MCAR, $\chi^2(1) = .293, p = .588$.

The other outcome variable, perceived state-winning candidate, also had some missing values even though this was asked in the pre-election survey. A Missing Values Analysis revealed that this variable’s missing values were also MCAR, $\chi^2(1) = .125, p = .724$. The two covariates, newspaper use and candidate preference, had fewer than 5% missing values. These results provided adequate evidence that the data could be validly entered in the multilevel models. All other missing values were deleted when making the Multivariate Data Matrix (MDM) file in the HLM software, leaving an $N$ of 535 cases.

**Multilevel Analyses**

The multilevel analyses were conducted using HLM software (Raudenbush, Bryk, & Congdon, 2007), in which one can combine Level-1 and Level-2 data sets. The first four hypotheses were tested using a logistic link function (because of the binary outcome variable), and the second set of hypotheses were tested under the assumption that the errors in estimation were normally distributed. However, it is essential to note that the errors in estimation are necessarily are not normally distributed in this latter variable, political participation. In fact, this is a count variable, but HLM software (Raudenbush, Bryk, & Congdon, 2007) does not permit a negative binomial function, which is often perceived as the best link function for count data (e.g., Tynicki, 2004). HLM software does permit Poisson, but this function has no upper bound, and count data tend to have
more zeros than Poisson assumes. Thus, because of limitations with the software, I assumed a normal distribution of the errors in estimation.
CHAPTER 6

RESULTS

Content Analysis

A total of 10,878 articles were coded in the 29 newspapers (grouped in 27 media markets). The *New York Times* featured the most articles \( n = 1536 \), comprising 14.1% of the sample. The *Washington Post* followed, with 1076 articles, or 9.9% of the sample. The *Worcester Telegram & Gazette* had the least amount of articles, with 81 or .7% of the sample. The frequency and percent of other newspapers can be found in the last column of Table 6.1.

By date, the most articles \( n = 391 \) appeared on October 31, 2004. This was the Sunday before the election, so it is not surprising that it featured the most articles (see Figure 6.1). In fact, the top four days for articles on the presidential campaign occurred over four days in the last weeks of October (October 31, 24, 28, and 29, respectively). These four days comprised 10.1% of the articles in the sample. Other dates were relatively evenly distributed, but the fewest articles appeared in September (the 6\(^{th}\), 7\(^{th}\), 20\(^{th}\), and 13\(^{th}\)), comprising only 2.9% of the sample. Figure 6.1 also shows a spike of articles in late August and early September. This was the period during the Republican
National Convention in New York City, so more attention was on the presidential campaign during this time. Importantly, although my analyses do not control for the time period because of the nature of the hypotheses in this study, I recommend that future research take such considerations into account.

More detailed descriptive information about the articles in the sample is provided in Table 6.1. Across all newspapers, the most articles appeared in the Front Page or News (41%), which included politics and sections A or B, as seen in Figure 6.2. The second most frequently occurring category of content was Letters to the Editor (23.8%), followed by Metro/Local (10.5%). Most newspapers published the most articles in the “Front / News” sections, but some papers had the most articles in “Letters to the Editor” (Arkansas Democrat Gazette, Birmingham News, Fresno Bee, Roanoke Times, Sacramento Bee, and Seattle Times). This is likely because of the limitation of content written locally or including local contributors. Many smaller newspapers publish wire articles or articles from larger newspapers (Albers, 2006), so this is not surprising. Also worth noting, in viewing Table 6.1, is that the Boston Globe has all missing information for the section of the newspaper, because the section information was not provided in the Newsbank database. However, this lack of descriptive information does not hamper the main analyses of the study, as section of newspaper is not a variable entered into the multilevel models.
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<th>Newspaper</th>
<th>Front/News</th>
<th>Metro/Local</th>
<th>Business</th>
<th>Arts/Entertainment</th>
<th>Editorial/Column</th>
<th>Letters to the Editor</th>
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<td>(9.9%)</td>
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<td>Denver Post &amp; Rocky Mountain News</td>
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<td>12</td>
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<td>(3.7%)</td>
<td>(3%)</td>
<td>(0%)</td>
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Note. Section percentages reflect percentage of that newspaper; total percentages reflect percentage of entire sample.

Table 6.1: Frequency of articles by section for each newspaper.
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<th>Source</th>
<th>118 (24%)</th>
<th>14 (2.9%)</th>
<th>17 (3.5%)</th>
<th>29 (5.9%)</th>
<th>303 (61.7%)</th>
<th>0 (1%)</th>
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<td>Arkansas</td>
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<td>47 (10%)</td>
<td>2 (0.4%)</td>
<td>83 (17.7%)</td>
<td>248 (52.9%)</td>
<td>5 (1.1%)</td>
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<td>St. Louis Post Dispatch</td>
<td>171 (37.6%)</td>
<td>66 (14.5%)</td>
<td>11 (2.4%)</td>
<td>54 (11.9%)</td>
<td>141 (31%)</td>
<td>8 (1.8%)</td>
<td>455 (4.2%)</td>
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<td>Seattle Times</td>
<td>120 (28.4%)</td>
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<td>21.5 (50.8%)</td>
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<td>423 (3.9%)</td>
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<td>Milwaukee Journal Sentinel</td>
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<td>15 (3.7%)</td>
<td>14 (3.4%)</td>
<td>32 (7.9%)</td>
<td>72 (17.7%)</td>
<td>5 (1.2%)</td>
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<td>237 (59.3%)</td>
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<td>17 (4.3%)</td>
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Table 6.1 continued

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</tr>
<tr>
<td>Telegram &amp;</td>
<td>27</td>
<td>35</td>
<td>1</td>
<td>13</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Gazette</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(33.3%)</td>
<td>(43.2%)</td>
<td>(1.2%)</td>
<td>(16%)</td>
<td>(1.2%)</td>
<td>0</td>
<td>81</td>
</tr>
</tbody>
</table>
Figure 6.1: Frequency of articles by date in sample
Figure 6.2: Frequency of articles by section in newspaper
In preparation for the multilevel analyses, I examined the distribution of terms in the three dictionaries by newspaper. Wordstat provides three estimates of these distributions: average frequency of the terms per case, percent of cases with the terms, and rate of the terms per 1,000 words. I chose the rate of terms per 1,000 words because this provides a more standardized parameter of how much space is devoted to each category of terms, regardless of length of article or total number of articles per newspaper in the sample. The *Boston Globe* had the highest rate of Kerry terms per 1,000 words (12.43), while the *Salt Lake Tribune/Deseret News* had the lowest (5.83). The *Houston Chronicle* had the highest rate of Bush terms (16.37 per 1,000 words) and the *Worcester Telegram and Gazette* had the lowest (5.07). The rates for all other newspapers are presented in Figures 6.3 and 6.4.

Although they were not used in the multilevel analyses, it is useful to see the differences in estimates of percentage as well as average frequency of these terms. The *Boston Globe* remained the forerunner in average frequency for Kerry (12.14 occurrences per case) and Bush (12.93 occurrences per case). The *Birmingham News* had the lowest average frequency for Kerry (2.2 occurrences per case) while the *Roanoke Times* had the lowest average for Bush (3.47 occurrences per case).

In terms of percentage of cases with references to each dictionary of terms, the *Boston Globe* devoted the greatest percentage of content in both Kerry and Bush categories; 96.6% of content included references to the Kerry dictionary terms, while 97.1% referred to Bush. The lowest percentage of Kerry references was in the *Birmingham News* (58.5%), while the lowest percentage of Bush references was in the *Arkansas Democrat-Gazette* (78%).

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What these differences demonstrate is that, depending on the parameter used, one might end up with very different results. Because of the more standardized nature of the rate-per-thousand-words measure, I deemed this to be the most valid representation of the nature of content in these newspapers. Yet because, logically, the Kerry and Bush rate-per-thousand measures are not meaningful in and of themselves, a new variable was computed to represent the ratio of Kerry-to-Bush mentions using the rate-per-thousand measures. Figures 6.3 and 6.4 show the simple rate-per-thousand results for Kerry and Bush. These figures graphically demonstrate the variance among newspapers in their frequency of Kerry and Bush mentions, providing a visual representation of how content differed on the standardized variable.

Table 6.2 shows the Kerry-to-Bush ratios for each media market, which was used for all subsequent analyses. The table is sorted by the ratio measure, in descending order from highest Kerry content to lowest. These ratios can be interpreted as how many Kerry mentions there are for every one Bush mention per thousand words. For instance, in the Birmingham News (which had the lowest ratio), there are only .61 Kerry mentions for every one Bush mention per thousand words, while the Worcester Telegram & Gazette (which had the highest ratio) published 1.24 Kerry mentions for every one Bush mention per thousand words.
Note: Some newspaper names are truncated to fit in the figure. Newspapers are listed alphabetically.

Figure 6.3: Rate of “Kerry” terms per 1,000 words by newspaper
Note: Some newspaper names are truncated to fit in the figure. Newspapers are listed alphabetically.

Figure 6.4: Rate of “Bush” terms per 1,000 words by newspaper
<table>
<thead>
<tr>
<th>Newspaper</th>
<th>Kerry-to-Bush Ratio in Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worcester Telegram &amp; Gazette</td>
<td>1.24</td>
</tr>
<tr>
<td>Richmond Times Dispatch</td>
<td>1.14</td>
</tr>
<tr>
<td>Arkansas Democrat Gazette</td>
<td>0.99</td>
</tr>
<tr>
<td>Miami Herald</td>
<td>0.95</td>
</tr>
<tr>
<td>Boston Globe</td>
<td>0.94</td>
</tr>
<tr>
<td>Philadelphia Inquirer</td>
<td>0.94</td>
</tr>
<tr>
<td>Milwaukee Journal Sentinel</td>
<td>0.92</td>
</tr>
<tr>
<td>Cleveland Plain Dealer</td>
<td>0.91</td>
</tr>
<tr>
<td>Roanoke Times</td>
<td>0.91</td>
</tr>
<tr>
<td>Denver Post/Rocky Mountain News</td>
<td>0.89</td>
</tr>
<tr>
<td>Knoxville News Sentinel</td>
<td>0.89</td>
</tr>
<tr>
<td>Seattle Times</td>
<td>0.89</td>
</tr>
<tr>
<td>Buffalo News</td>
<td>0.85</td>
</tr>
<tr>
<td>New York Daily News</td>
<td>0.85</td>
</tr>
<tr>
<td>Detroit Free Press</td>
<td>0.84</td>
</tr>
<tr>
<td>Chicago Tribune</td>
<td>0.83</td>
</tr>
<tr>
<td>Manchester Union Leader</td>
<td>0.81</td>
</tr>
<tr>
<td>St. Louis Post-Dispatch</td>
<td>0.81</td>
</tr>
<tr>
<td>Washington Post</td>
<td>0.81</td>
</tr>
<tr>
<td>Salt Lake Tribune/Deseret News</td>
<td>0.79</td>
</tr>
<tr>
<td>Fresno Bee</td>
<td>0.78</td>
</tr>
<tr>
<td>New York Times</td>
<td>0.78</td>
</tr>
<tr>
<td>Sacramento Bee</td>
<td>0.77</td>
</tr>
<tr>
<td>San Francisco Chronicle</td>
<td>0.75</td>
</tr>
<tr>
<td>Lakeland Ledger</td>
<td>0.7</td>
</tr>
<tr>
<td>Houston Chronicle</td>
<td>0.62</td>
</tr>
<tr>
<td>Birmingham News</td>
<td>0.61</td>
</tr>
</tbody>
</table>

Table 6.2: Ratio of Kerry-to-Bush mentions by newspaper.
Multilevel Analyses

For reference, the descriptive statistics for both Level-1 and Level-2 data, after missing values were deleted, are provided in Table 6.3. These values do not differ noticeably from the descriptive data for the sample described above. The average newspaper use among 535 individuals was 3 days ($SD = 2.84$); 52% preferred Kerry as the winning candidate; 51% perceived Kerry was the likely winning candidate; and participation in political activities was an average of 1.42 ($SD = 1.22$) of 7 activities. The ratio of Kerry-to-Bush mentions was an average of .86 ($SD = .13$) across the 27 contextual units, with a minimum of .61 and a maximum of 1.24 (where a higher number represents more Kerry than Bush content). These means will become particularly relevant in the interpretation of coefficients in the following models, as all predictors were entered into the models grand-mean centered.

<table>
<thead>
<tr>
<th>Level-1 Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Newspaper Use</td>
</tr>
<tr>
<td>Candidate preference</td>
</tr>
<tr>
<td>Perceived state-winning candidate</td>
</tr>
<tr>
<td>Political participation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Level-2 Descriptive Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
</tr>
<tr>
<td>Ratio of Kerry-to-Bush mentions</td>
</tr>
</tbody>
</table>

Table 6.3: Descriptive Level-1 and Level-2 statistics.
Predicting Perceptions of State-Winning Candidate

Baseline Random-Intercept Model

Before employing multilevel modeling as a statistical technique, it is useful to examine the benefits of this technique over simple single-level regression. A single-level regression model predicting perceptions of public opinion from media use would appear as,

\[ \text{PERCEIVEDOPINION} = \beta_0 + \beta_i(\text{NEWSPAPERUSE})_i + e_i \]  \hspace{1cm} (6.1)

The single-level regression equation in Equation 6.1 does not permit analysis of media effects on perceived public opinion taking media context into account. It only allows for assessment of individual media use. Specifically, one cannot examine variation in the outcome that might be attributable to contextual media units (via content). More importantly, we cannot test whether there are cross-level effects of individual media use and media content on the outcome variable—a goal of both theory and methodology in mass communication research (Pan & McLeod, 1991). By including contextual data in the analysis, it is possible to account for greater variation in the outcome variable as well, increasing explanatory power (see Jerit, Barabas, & Bolsen, 2006 for an example).

Using HLM software (Raudenbush, Bryk, & Congdon, 2007), I first estimated a “baseline” model (Hayes & Slater, 2006) in order to estimate the variability of the means across contextual units. In a normal simple random-intercept (or baseline) model with no predictors, the Level-1 and Level-2 equations are,

Level 1: \[ Y_{ij} = \beta_{0j} + r_{ij} \quad r_{ij} \sim N(0, \sigma^2) \]

Level 2: \[ \beta_{0j} = \gamma_{00} + u_{0j} \quad u_{0j} \sim N(0, \tau) \]  \hspace{1cm} (6.2)
Equation 6.2 shows the Level-1 (or measurement) model, which has no predictors. The intercept for this model becomes the outcome for the Level-2 equation. Specifically (and these notations apply throughout),

\[ i = 1, \ldots, n \text{ cases per group (people)} \]
\[ j = 1, \ldots, J \text{ groups (media market contexts)} \]
\[ Y_{ij} = \text{perceived state-winning candidate of individual } i \text{ in group } j \]
\[ \beta_{0j} = \text{the mean perception of the state’s winner for group } j \text{ (intercept)} \]
\[ r_{ij} = \text{the error (or residual in estimation) associated with each individual; has a mean of zero and variance } \sigma^2 \]
\[ \sigma^2 = \text{the within-group variance} \]
\[ \gamma_{00} = \text{the mean perceptions across the population of groups (overall intercept)} \]
\[ u_{0j}^{15} = \text{the random effect associated with each group; has a mean of zero and variance } \tau \]
\[ \tau = \text{the variance between groups} \]

However, with a binary outcome, as in the present analysis, it is necessary to estimate a multilevel logistic model, where these equations become,

**Level 1:**  
\[ \text{Prob}(Y_{ij}=1|\beta_{0j}) = \varphi_{ij} \]
\[ \text{Log}[\varphi_{ij}/(1-\varphi_{ij})] = \beta_{0j} \]
\[ \eta_{ij} = \beta_{0j} \]

**Level 2:**  
\[ \beta_{0j} = \gamma_{00} + u_{0j} \]

**Mixed model:**  
\[ \eta_{ij} = \gamma_{00} + u_{0j} \]  
(6.3)

Here, \( Y_{ij} \) is a binomial outcome (0, 1), \( \varphi_{ij} \) is the probability of saying Kerry is the perceived state-winning candidate, and \( \gamma_{00} \) is the average log odds of stating Kerry is the state-winning candidate across media markets. Eta (\( \eta \)) is the link function, and in this case, it is a logit link function. The mixed model represents the combined Level-1 and

---

15 In this and all subsequent models, random effects are included based on the theoretical grounds that the relationship between the Level-1 variables and the outcome should vary across Level-2 units (Hayes, 2006b).
Level-2 models. From this model, I tested the most basic hypothesis that there would be
differences in perceptions of public opinion based upon media contexts.

The baseline, and subsequent, models were run with a logit link function and the
associated Bernoulli probability distribution because perceived state-winning candidate is
a binary outcome (Bush = 0, Kerry = 1). Unit-specific results with robust standard errors
were used in the interpretation of all multilevel logistic models presented here. As
outlined in Raudenbush, et al. (2004), if a researcher is interested mainly in how a change
in a Level-2 variable, $W_j$ (here, media content), can be expected to affect individuals in a
contextual unit (media market), then the unit-specific model is most appropriate. The
unit-specific model describes the processes occurring in each Level-2 unit, and how these
processes differ across a population of Level-2 units (Raudenbush & Bryk, 2002), which
fits the purposes of the present study. Raudenbush and Bryk (2002) stated that the unit-
specific models are richer—because they provide information about the entire
distribution of outcomes across all Level-2 units—but they are more sensitive to model
assumptions about the random effects in the model. The main difference between the
unit-specific and the population-average models is that random effects are controlled for
in the former but not in the latter.

The first step in the present analysis was to determine whether there was a
significant amount of heterogeneity between groups. I assessed this by entering the model
in Equation 6.3 into HLM software (Raudenbush, Bryk, & Congdon, 2007). The results from this baseline multilevel logistic model are presented in Table 6.4.

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>Odds Ratio</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept, (\gamma_{00})</td>
<td>.12</td>
<td>1.12</td>
<td>.727</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Variance Component</th>
<th>df</th>
<th>(\chi^2)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept, (u_{0j})</td>
<td>2.60</td>
<td>26</td>
<td>192.90</td>
<td>.000</td>
</tr>
</tbody>
</table>

Deviance (-2LL) 1522.10

Table 6.4: Results from baseline multilevel logistic model predicting perceived state-winning candidate.

Hypothesis 1 proposed that there would be significant group-level heterogeneity in perceptions of state-winning candidates. The test statistic used was Chi-square, which was significant, \(\chi^2 (26) = 192.900, p <.0001\). This provides initial support for Hypothesis 1. A more detailed look at the variation in perceived state-winning candidate is presented in Table 6.5, which includes the ratios of perceived state-winning candidate, sorted by ratio. This table demonstrates that there was wide variability in who respondents perceived to be likely to win their state, from 100% thinking Bush would win in the Miami Herald market to 100% believing Kerry would win in the New York Times market.

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16 Restricted Maximum Likelihood Estimation (REML) was used for estimates of variance and covariance components. This iterative numerical procedure is not conditional upon point estimates of fixed effects, which Raudenbush and Bryk (2002) state is a limitation of Maximum Likelihood (ML) estimation.
<table>
<thead>
<tr>
<th>Media Market</th>
<th>n</th>
<th>% Perceived Bush to Win State</th>
<th>% Perceived Kerry to Win State</th>
<th>Ratio of Kerry-to-Bush Perceived Win</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York Times</td>
<td>13</td>
<td>0.0</td>
<td>100.0</td>
<td>--</td>
</tr>
<tr>
<td>Seattle Times</td>
<td>37</td>
<td>8.1</td>
<td>91.9</td>
<td>11.35</td>
</tr>
<tr>
<td>Worcester Telegram &amp; Gazette</td>
<td>37</td>
<td>10.8</td>
<td>89.2</td>
<td>8.26</td>
</tr>
<tr>
<td>Boston Globe</td>
<td>17</td>
<td>11.8</td>
<td>88.2</td>
<td>7.47</td>
</tr>
<tr>
<td>Chicago Tribune</td>
<td>23</td>
<td>13.0</td>
<td>87.0</td>
<td>6.70</td>
</tr>
<tr>
<td>Sacramento Bee</td>
<td>30</td>
<td>13.3</td>
<td>86.7</td>
<td>6.52</td>
</tr>
<tr>
<td>San Francisco Chronicle</td>
<td>15</td>
<td>13.3</td>
<td>86.7</td>
<td>6.52</td>
</tr>
<tr>
<td>Washington Post</td>
<td>14</td>
<td>21.4</td>
<td>78.6</td>
<td>3.67</td>
</tr>
<tr>
<td>Buffalo News</td>
<td>39</td>
<td>33.3</td>
<td>66.7</td>
<td>2</td>
</tr>
<tr>
<td>Milwaukee Journal Sentinel</td>
<td>45</td>
<td>35.6</td>
<td>64.4</td>
<td>1.81</td>
</tr>
<tr>
<td>Fresno Bee</td>
<td>22</td>
<td>36.4</td>
<td>63.6</td>
<td>1.75</td>
</tr>
<tr>
<td>Manchester Union Leader</td>
<td>5</td>
<td>40.0</td>
<td>60.0</td>
<td>1.50</td>
</tr>
<tr>
<td>Philadelphia Inquirer</td>
<td>20</td>
<td>45.0</td>
<td>55.0</td>
<td>1.2</td>
</tr>
<tr>
<td>Detroit Free Press</td>
<td>12</td>
<td>50.0</td>
<td>50.0</td>
<td>1.00</td>
</tr>
<tr>
<td>Arkansas Democrat Gazette</td>
<td>25</td>
<td>56.0</td>
<td>44.0</td>
<td>.79</td>
</tr>
<tr>
<td>St. Louis Post-Dispatch</td>
<td>20</td>
<td>60.0</td>
<td>40.0</td>
<td>.67</td>
</tr>
<tr>
<td>Lakeland Ledger</td>
<td>9</td>
<td>66.7</td>
<td>33.3</td>
<td>.50</td>
</tr>
<tr>
<td>Roanoke Times</td>
<td>38</td>
<td>73.7</td>
<td>26.3</td>
<td>.36</td>
</tr>
<tr>
<td>Birmingham News</td>
<td>51</td>
<td>76.5</td>
<td>23.5</td>
<td>.31</td>
</tr>
<tr>
<td>Knoxville News Sentinel</td>
<td>23</td>
<td>82.6</td>
<td>17.4</td>
<td>.21</td>
</tr>
<tr>
<td>Denver Post/Rocky Mountain News</td>
<td>25</td>
<td>84.0</td>
<td>16.0</td>
<td>.19</td>
</tr>
<tr>
<td>Richmond Times Dispatch</td>
<td>34</td>
<td>85.3</td>
<td>14.7</td>
<td>.17</td>
</tr>
<tr>
<td>Cleveland Plain Dealer</td>
<td>19</td>
<td>89.5</td>
<td>10.5</td>
<td>.12</td>
</tr>
<tr>
<td>Salt Lake Tribune/Deseret News</td>
<td>31</td>
<td>90.3</td>
<td>9.7</td>
<td>.11</td>
</tr>
<tr>
<td>Houston Chronicle</td>
<td>27</td>
<td>92.6</td>
<td>7.4</td>
<td>.08</td>
</tr>
<tr>
<td>Miami Herald</td>
<td>5</td>
<td>100.0</td>
<td>0.0</td>
<td>0.00</td>
</tr>
</tbody>
</table>

Table 6.5: Proportions of perceived state-winning candidate by media market.
In addition to these descriptive statistics, a commonly used descriptive statistic in multilevel modeling is the intraclass correlation coefficient (ICC). The ICC is often used to assess group-level heterogeneity. In equation form, this coefficient ($\rho$) is calculated (Raudenbush & Bryk, 2002),

$$\rho = \frac{\tau_{00}}{\tau_{00} + \sigma^2}$$  \hspace{1cm} (6.4)

The statistic in equation 6.4 tells the analyst how much variance in $Y_{ij}$ is accounted for by variations among Level-2 units (Park, et al., in press; Raudenbush & Bryk, 2002). The more individuals share common experiences because they are closely connected within a contextual unit, the more they are similar to each other (Kreft & de Leeuw, 1998). In other words, this is a measure of group homogeneity; how similar or different are individuals nested within one group (here, media market) different from individuals nested within another group? If the ICC is zero, this means that there is no clustering effect, or no differences in the outcome based upon being located in a group.

However, with multilevel binomial logistic models, the subject-level error term ($r_{ij}$) is not included; therefore the within-group variance ($\sigma^2$) is not available in order to compute the ICC. Instead, the variance of a standard logistic distribution can be used (Kim, et al., 2007), which is,

$$\sigma^2 = \frac{\pi^2}{3}$$  \hspace{1cm} (6.5)

From Equation 6.5, this variance is $3.1416^2/3$, or 3.2899. In turn, the intraclass correlation can be computed as (Raudenbush & Bryk, 2002, p. 334),

$$\rho = \frac{\tau_{00}}{\tau_{00} + \frac{\pi^2}{3}}$$  \hspace{1cm} (6.6)

This translates into,

$$\frac{2.6019}{2.6019 + 3.2899} = .4416$$  \hspace{1cm} (6.7)
Equation 6.1 indicates that about 44% of the variance in perceived state-winning candidate is between media markets. If this figure had been closer to zero, it would suggest that the observations are independent of each other. Yet, the intraclass correlation coefficient reveals that 44% of the variance in the outcome is explained by how individuals in different media markets differ from each other. This is a large amount of variance between markets that, admittedly, could be explained by other factors (to be examined in subsequent models). Yet Hypothesis 1 simply proposed that there would be significant group heterogeneity, and these results support Hypothesis 1.

Random-Coefficients Model

I follow the analytical approach outlined in Park, et al. (in press) for subsequent analyses. The next analytical step was to examine the relationship between some individual-level predictor (here, individual newspaper use and candidate preference) and the group-level mean on that variable for each group. In this way, each group has its own regression equation with an intercept and slope, and an average intercept and slope as well as the average variation can be generated (Park, et al., in press). This model is referred to as a Random-Coefficients Model (abbreviated here as “RC”) and is specified in Equation 6.7:

Level 1: \[ Y_{ij} = \beta_{0j} + \beta_{1j}(\text{NPUSE})_{ij} + \beta_{2j}(\text{CANDIDATEPREF})_{ij} + r_{ij} \]

Level 2: \[
\begin{align*}
\beta_{0j} &= \gamma_{00} + u_{0j} \\
\beta_{1j} &= \gamma_{10} + u_{1j} \\
\beta_{2j} &= \gamma_{20} + u_{2j}
\end{align*}
\] (6.8)

where 
NPUSE = Days of newspaper use (0 to 7) 
CANDIDATEPREF = Candidate preference (0 for Bush, 1 for Kerry) 
\( \beta_{0j} \) = the overall mean perception of the state’s winner for group \( j \) weighted by Level-2 sample size (intercept)
$\beta_{ij} =$ the relationship between individual perceptions of the state’s winner for group $j$ as a function of individual newspaper use (slope)

$\beta_{kj} =$ the relationship between individual perceptions of the state’s winner for group $j$ as a function of individual candidate preference (slope)

$\gamma_{00} =$ the adjusted log odds of individual perception across all groups

$\gamma_{10} =$ the slope of newspaper use across groups

$\gamma_{20} =$ the slope of personal candidate preference across groups

$u_{ij} =$ the random effect associated with each group

All predictors entered into the models were grand-mean centered. In general, centering removes high correlations between the random intercept and slopes, as well as high correlations between Level-1 and Level-2 variables and cross-level interactions (Kreft & de Leeuw, 1998); in this way, estimates become more accurate (Paccagnella, 2006). Centering also makes interpretation easier; with grand-mean centering, the intercepts are interpreted as the expected outcome for a subject whose value on $X_{ij}$ is equal to the grand mean. The variance is interpreted as the variance among Level-2 units in the adjusted means (Raudenbush & Bryk, 2002).

In examining the model in Equation 6.7, it is important to assess whether there is significant variation across the group means. I have included random effects for each equation in the Level-2 model because I expect the effect of individual newspaper use and candidate preference on perceptions to vary across media contexts. I draw this conclusion primarily from Jerit, Barabas, and Bolsen (2006), who concluded that attention to media does vary across Level-2 units, and this variation in media attention had a variable effect on the outcome variable (political knowledge).

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17 Although it is often interesting to examine the correlations between random effects when there is more than one random effect, these are not reported here for the sake of reducing complexity of interpretations.

18 Media content was measured as issues, not media contexts, in their study.
Yet, as with the baseline model, the standard multilevel model does not apply when one has a binary outcome variable. Instead, the following model is used,

Level 1: \[ \text{Prob}(Y_{ij}=1|\beta_0) = \varphi_{ij} \]
\[ \log\left(\frac{\varphi_{ij}}{1-\varphi_{ij}}\right) = \eta_{ij} \]
\[ \eta_{ij} = \beta_{0j} + \beta_{1j} (\text{NPUSE})_{ij} + \beta_{2j} (\text{CANDIDATEPREF})_{ij} \]

Level 2:
\[ \beta_{0j} = \gamma_{00} + u_{0j} \]
\[ \beta_{1j} = \gamma_{10} + u_{1j} \]
\[ \beta_{2j} = \gamma_{20} + u_{2j} \]

Mixed model: \[ \eta_{ij} = \gamma_{00} + \gamma_{10} (\text{NPUSE})_{ij} + \gamma_{20} (\text{CANDIDATEPREF})_{ij} + u_{0j} + u_{1j} (\text{NPUSE})_{ij} + u_{2j} (\text{CANDIDATEPREF})_{ij} \] (6.9)

Hypothesis 2 predicted that personal candidate preference would play a role in predicting perceived state-winning candidate. This variable, along with a control for newspaper reading, was entered into the Level-1 equations, but no Level-2 predictors were added. The results for Hypothesis 2 are presented in Table 6.6.

For logistic models, the odds ratio—which indicates how the odds of an event is affected by a predictor—is frequently used to interpret the actual effects of the coefficients (Kim, et al., 2007). Table 6.6 shows that, controlling for newspaper use, for two people who differed in their candidate preference by one unit (with a Kerry preference as the higher figure), the odds of saying Kerry would win differed by a factor of 3.61, \( p < .0001 \). This suggests a positive effect on a perceived Kerry win when one favors Kerry. Hypothesis 2 was supported, and these results support the traditional notion of social projection. However, they do not account for the reality of media context, which was added into subsequent models.

Notably, although it was not hypothesized, the results also show that there was a significant effect of newspaper reading on perceived state-winning candidate, conditional
on other predictors in the model. That is, for two people who differed by one day in their newspaper use, the odds of saying Kerry would win differed by a factor of 1.12. In other words, a person who read the newspaper one more day than another person was 12% more likely to say Kerry would win the election in their state, and this was significant, $p < .05$.

<table>
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<th>Odds Ratio</th>
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</tr>
</thead>
<tbody>
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<td>1.12</td>
<td>.023</td>
</tr>
<tr>
<td>Candidate preference, $\gamma_{20}$</td>
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<td>3.61</td>
<td>.000</td>
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</table>

<table>
<thead>
<tr>
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<th>Variance Component</th>
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<th>$\chi^2$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
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<tr>
<td>Newspaper use, $u_{1j}$</td>
<td>.02</td>
<td>26</td>
<td>29.48</td>
<td>.244</td>
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<tr>
<td>Candidate preference, $u_{2j}$</td>
<td>.69</td>
<td>26</td>
<td>30.82</td>
<td>.195</td>
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</table>

Deviance (-2LL) 1499.64

**Note.** The chi-square statistics reported are based only 26 of 27 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

Table 6.6: Results from random-coefficients multilevel logistic model predicting perceived state-winning candidate.

**Intercepts-as-Outcomes Model**

The third step in the analytical process employed here was to add Level-2 predictors (Park, et al., in press). This is called the Intercepts-as-Outcomes model (abbreviated here as “IO”). Here, the purpose is to predict variation in the outcome
variable (perceived state-winning candidate) using the Level-2 variable. In this case, the outcome remains the binary variable of perceived state-winning candidate and the Level-2 variable is the Kerry-to-Bush ratio, representing media content across the 27 contextual units. Normally, this model would be,

Level 1: \[ Y_{ij} = \beta_{0j} + r_{ij} \]

Level 2: \[ \beta_{0j} = \gamma_{00} + \gamma_{01}(KERRY-TO-BUSH RATIO)_j + u_{0j} \] (6.10)

Yet, because we are dealing with a binary outcome, this converts to,

Level 1: \[ \text{Prob}(Y_{ij} = 1 | \beta_{0j}) = \varphi_{ij} \]
\[ \log[\varphi_{ij} / (1 - \varphi_{ij})] = \beta_{0j} \]
\[ \eta_{ij} = \beta_{0j} \]

Level-2: \[ \beta_{0j} = \gamma_{00} + \gamma_{01}(KERRY-TO-BUSH RATIO)_j + u_{0j} \]

Mixed Model: \[ \eta_{ij} = \gamma_{00} + \gamma_{01}(KERRY-TO-BUSH RATIO)_j + u_{0j} \] (6.11)

Hypothesis 3 predicted that perceived state-winning candidate would vary as a function of the Level-2 predictor, media content. In this Intercepts-as-Outcomes (IO) model, no Level-1 predictors were included. The results from this IO model are presented in Table 6.7.

Table 6.7 shows that the ratio of Kerry-to-Bush mentions in one’s media context was not a significant predictor of perceived state-winning candidate.
Fixed Effects | Coefficient | Odds Ratio | p
---|---|---|---
Intercept, $\gamma_{00}$ | .12 | 1.12 | .726
Kerry-to-Bush ratio, $\gamma_{01}$ | .50 | 1.65 | .850

Random Effects | Variance Component | df | $\chi^2$ | p
---|---|---|---|---
Intercept, $u_{0j}$ | 2.73 | 25 | 189.03 | .000

Deviance (-2LL) | 639.40

Table 6.7: Results from intercepts-as-outcomes multilevel logistic model predicting perceived state-winning candidate.

The results from Table 6.7 suggest that the differences in perceived public opinion among different media markets is not related to differences between those markets in the ratio of Kerry-to-Bush mentions. In other words, absent of other predictors and interactions, the media context does not prove to be a significant predictor of perceived public opinion, at least in this case. Hypothesis 3 was not supported. A main goal of the present study was to examine cross-level interactions between individual- and contextual-level variables, and the final model, testing Hypotheses 4 and 5 does just that.

Intercepts-and-Slopes-as-Outcomes Model

The Intercepts-and-Slopes-as-Outcomes model (abbreviated as “ISO”) includes predictors at both Levels 1 and 2 in the model (Raudenbush & Bryk, 2002). The Level-1 predictors remain the same as in the RC model: individual newspaper use and candidate preference. The outcome variable also remains the same: individual perceptions of public
opinion. But the Level-2 predictor—Kerry-to-Bush ratio in newspaper content—is added to the model. The standard multilevel model would be,

**Level 1:** \[ Y_{ij} = \beta_0j + \beta_1j(NPUSE)_{ij} + \beta_2j(CANDIDATEPREF)_{ij} + r_{ij} \]

**Level 2:** \[
\begin{align*}
\beta_0j &= \gamma_{00} + \gamma_{01}(KERRY-TO-BUSH RATIO)_{ij} + u_{0j} \\
\beta_1j &= \gamma_{10} + \gamma_{11}(KERRY-TO-BUSH RATIO)_{ij} + u_{1j} \\
\beta_2j &= \gamma_{20} + \gamma_{21}(KERRY-TO-BUSH RATIO)_{ij} + u_{2j}
\end{align*}
\]

(6.12)

*where* \(\gamma_{00}, \ldots, \gamma_{21} = \) Level-2 coefficients (fixed effects)

Yet, again, since the outcome is binary, a multilevel logistic model must be used. This model is specified as,

**Level 1:** \[ \text{Prob}(Y_{ij}=1|\beta_0j) = \varphi_{ij} \]
\[ \log[\varphi_{ij} /(1 - \varphi_{ij})] = \eta_{ij} \]
\[ \eta_{ij} = \beta_0j + \beta_1j(NPUSE)_{ij} + \beta_2j(CANDIDATEPREF)_{ij} \]

**Level-2:** \[
\begin{align*}
\beta_0j &= \gamma_{00} + \gamma_{01}(KERRY-TO-BUSH RATIO)_{ij} + u_{0j} \\
\beta_1j &= \gamma_{10} + \gamma_{11}(KERRY-TO-BUSH RATIO)_{ij} + u_{1j} \\
\beta_2j &= \gamma_{20} + \gamma_{21}(KERRY-TO-BUSH RATIO)_{ij} + u_{2j}
\end{align*}
\]

**Mixed model:** \[
\eta_{ij} = \gamma_{00} + \gamma_{01}(KERRY-TO-BUSH RATIO)_{ij} + \gamma_{10}(NPUSE)_{ij} + \\
\gamma_{11}(KERRY-TO-BUSH RATIO)(NPUSE)_{ij} + \\
\gamma_{20}(CANDIDATEPREF)_{ij} + \\
\gamma_{21}(KERRY-TO-BUSH RATIO)(CANDIDATEPREF)_{ij} + \\
u_{0j} + u_{1j}(NPUSE)_{ij} + u_{2j}(CANDIDATEPREF)_{ij}
\]

(6.13)

Based upon the model in Equation 6.13, I am able to utilize the full potential of multilevel modeling in order to examine whether there is a significant cross-level interaction between media context (Kerry-to-Bush ratio in newspaper context)\(^{19}\) and individual variables (newspaper use and individual candidate preference) in predicting perceptions of public opinion. This model tested Hypotheses 4, which predicted that

---

\(^{19}\) The ratio of Kerry-to-Bush content was grand-mean centered.
individuals’ perceptions of public opinion would vary as a function of the interaction between individual newspaper use and media context, controlling for other predictors, such that higher newspaper reading would positively interact with media context to predict perceived public opinion. It also tests Hypothesis 5, which stated that projection effects would be significant, but that media context would moderate this effect. Results are presented in Table 6.8.

First, it is helpful to interpret the intercepts in each predictor’s model. The odds ratio for perceived state-winning candidate, averaged across media context groups, was 1.15 when the Kerry-to-Bush ratio was average (i.e., \( M = .86 \)). The odds ratio for Kerry-to-Bush content was 2.80, but this did not significantly predict perceived state-winning candidate.

Hypothesis 4 proposed that, in effect, those who read the newspaper more would be more affected by the media context. In other words, this hypothesis predicted that higher newspaper reading would positively interact with media context to predict perceived state-winning candidate. However, the results show that there was no significant interaction effect on perceived state-winning candidate when newspaper use increased by one day. Thus, the interaction effect of newspaper use and media context on perceived state-winning candidate was not significant. Hypothesis 4 was not supported.

Individual candidate preference remained a positive and significant predictor of perceived state-winning candidate in the ISO model. The odds ratio was 3.78 for candidate preference, which means that for two people who differed in candidate preference by one unit, the likelihood of saying Kerry would win one’s state increased by
a factor of 3.78, \( p < .001 \), controlling for newspaper use. This coefficient is conditional on the Kerry-to-Bush ratio in one’s media context being average (\( M = .86 \)).

Hypothesis 5 predicted that media context would moderate the effect of individual candidate preference to predict perceived state-winning candidate. The results show that the differentiating effect of one’s own preference on perceptions of public opinion decreased when media context was introduced as a moderating variable. As shown in Table 6.8, this was a marginally significant (\( p = .103 \)) cross-level interaction. This relationship is graphically presented in Figure 6.5.

<table>
<thead>
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<th>Fixed Effects</th>
<th>Coefficient</th>
<th>Odds Ratio</th>
<th>( p )</th>
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<td></td>
</tr>
<tr>
<td>Intercept, ( \gamma_{00} )</td>
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<td>1.15</td>
<td>.699</td>
</tr>
<tr>
<td>Kerry-to-Bush ratio, ( \gamma_{01} )</td>
<td>1.03</td>
<td>2.80</td>
<td>.726</td>
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<td>Newspaper Use Model</td>
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<tr>
<td>Intercept, ( \gamma_{10} )</td>
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<td>1.12</td>
<td>.026</td>
</tr>
<tr>
<td>Kerry-to-Bush ratio, ( \gamma_{11} )</td>
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<td>1.04</td>
<td>.923</td>
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<tr>
<td>Candidate Preference Model</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Intercept, ( \gamma_{20} )</td>
<td>1.34</td>
<td>3.78</td>
<td>.000</td>
</tr>
<tr>
<td>Kerry-to-Bush ratio, ( \gamma_{21} )</td>
<td>-3.07</td>
<td>.05</td>
<td>.103</td>
</tr>
</tbody>
</table>

Continued

Note. The chi-square statistics reported are based only 26 of 27 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

Table 6.8: Results from intercepts-and-slopes-as-outcomes multilevel logistic model predicting perceived state-winning candidate.
Table 6.8 continued

<table>
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<tr>
<th>Random Effects</th>
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<th>$\chi^2$</th>
<th>p</th>
</tr>
</thead>
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<td>138.22</td>
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<tr>
<td>Newspaper use, $u_{1j}$</td>
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<td>24</td>
<td>29.68</td>
<td>.195</td>
</tr>
<tr>
<td>Candidate preference, $u_{2j}$</td>
<td>.63</td>
<td>24</td>
<td>27.66</td>
<td>.274</td>
</tr>
</tbody>
</table>

Deviance (-2LL) 1488.73

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Figure 6.5: Perceived Kerry win as a function of media context and personal candidate preference
The marginally significant interaction can be interpreted as that when respondents differed by one unit in candidate preference, the likelihood of saying Kerry would win one’s state was reduced by a factor of .05 when the Kerry-to-Bush ratio increased by one unit. In other words, the likelihood of saying Kerry would win was reduced by 95% when a person had an average candidate preference ($M = .52$) and the ratio of Kerry-to-Bush content in their media context increased by one unit.

It is important to note that this interpretation is actually somewhat unrealistic, because a one-unit increase in Kerry-to-Bush content translates into twice as many Kerry mentions than Bush mentions, which did not occur in these data. One way of obtaining a more realistic measure is to raise the odds ratio to a fraction, such as one-tenth. In this way, .05 becomes $0.05^{1/10}$, or .74, and can be interpreted as for every one-tenth unit increase in the ratio of Kerry-to-Bush content, the likelihood of saying Kerry would win was reduced by 26% when a person had an average candidate preference, controlling for other predictors in the model.

These results support Hypothesis 5, such that there is a significant interaction between media context and individual candidate preference on perceived state-winning candidate. Figure 6.5 shows a convergence of these perceptions as the ratio reaches its average (0, because it is grand-mean centered). Implications for these findings are further discussed in Chapter 7.

Research Question 1 asked if newspaper use would significantly predict perceived state-winning candidate when controlling for media context. The odds ratio for newspaper use was 1.12, which means that for two people who differed in their newspaper reading by one day, the likelihood of saying Kerry would win increased by a
factor of 1.12, or 12%, controlling for candidate preference. This coefficient is conditional on the Kerry-to-Bush ratio in one’s media context being average ($M = .86$). As a result, both individual candidate preference and individual newspaper use were significant predictors of perceived public opinion.

The variance component for the intercept in the bottom of Table 6.8 is significant, $\tau_{00} = 2.98, p < .0001$. This suggests that there is still some variance among media markets in the perceived state-winning candidate that has not been accounted for by these Level-1 and Level-2 predictors. Possibilities for future research that might utilize other potential variables are addressed in Chapter 7.

Overall, the results from Hypotheses 1 through 5 suggest that there are significant differences between individuals in various media markets in whom they perceived to be the state-winning candidate in the 2004 presidential election. Newspaper use and a personal preference for Kerry both influenced the likelihood that respondents would say Kerry would win the state. These predictors remained significant in the complete ISO model, which included media content.

The ratio of Kerry-to-Bush mentions in one’s media context did not have a significant direct effect, but when it was interacted with one’s own personal candidate preference, a marginally significant effect emerged. Notably, as the ratio of Kerry-to-Bush content increased, Kerry supporters were less likely to perceive Kerry as winning the state. This suggests that there are indeed cross-level interactions between media context and individual candidate preference in predicting perceptions of public opinion. Further interpretations of these findings are discussed in Chapter 7.
Predicting Political Participation

The next set of equations follows a similar logic as the previous set with perceived state-winning candidate as the outcome variable. However, these models follow the standard multilevel modeling form; that is, it is assumed that the outcome variable, political participation, is continuous and normally distributed. Importantly, in the following set of hypotheses, perceived state-winning candidate is also entered in this model as a Level-1 predictor. As outlined earlier, I expect that these perceptions might influence a person’s decision to get involved politically. The main goal in this analysis was to conclude whether media context encouraged or discouraged individuals to participate, controlling for their favored candidate, newspaper use, and perceived state-winning candidate at the individual level.

Following the logic set forth in the previous set of analyses, a baseline model was run first, followed by a RC model, an IO model, and finally, an ISO model. Because the outcome was treated as normal, an identity link function, and its corresponding assumption about the normal distribution of errors, was applied. Restricted maximum likelihood estimation was set as the estimation setting, and all results presented here are with robust standard errors.

20 Although the distribution of political participation was slightly positively skewed, analyses that utilized a square-root transformed variable, as well as a binary outcome, did not produce significantly different results than those presented here.

21 Robust standard errors are relatively insensitive to misspecification at the levels of the model and the distributional assumptions at each level. Because the number of J units is relatively large in this sample (n = 27), these are appropriate to use in interpretation. In all cases, robust standard errors were in close agreement with model-based standard errors, so there is no indication that the HLM models were misspecified (Raudenbush & Bryk, 2002). Restricted maximum likelihood estimation is preferred when the number of Level-2 units is small or the number of fixed effects is large (Hayes, 2006b), but in this case, the results would likely be similar to maximum likelihood estimation.

Continued on next page.
Baseline Random-Intercept Model

The baseline random-intercept model includes only the outcome variable, political participation, in order to assess whether there are significant differences in this outcome by context. As with the first baseline model predicting perceived public opinion, I calculated the ICC from the following model,

Level 1: \[ Y_{ij} = \beta_{0j} + r_{ij} \]

Level 2: \[ \beta_{0j} = \gamma_{00} + u_{0j} \]  \hspace{1cm} (6.14)

Mixed model: \[ Y_{ij} = \gamma_{00} + u_{0j} + r_{ij} \]

where \( Y_{ij} \) = political participation of individual \( i \) in group \( j \)

Table 6.9 shows that the overall mean for political participation is 1.42 (\( \gamma_{00} \)) with a standard error of .06. In other words, the interpretation of this coefficient is that on average and across media markets, respondents participated in 1.42 out of 7 political activities. The distribution of political participation across media market categories is presented graphically in Figure 6.6.

The results from Table 6.9 support Hypothesis 6, which predicted that there would be significant between-group variability in political participation. The between-group variability (\( \tau_{00} = .03 \)) was indeed significantly different from zero, \( \chi^2 (26) = 40.15, p < .05 \). The within-group variability was higher, \( \sigma^2 = 1.46 \). This residual variance will be useful in estimating the statistical importance of Level-1 predictors added in subsequent models (Hayes, 2006b).

\[^{22}\text{The interpretations of all coefficients are the same, except where noted.}\]
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<thead>
<tr>
<th>Fixed Effect</th>
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</tr>
</thead>
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<td>.06</td>
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<th>$\chi^2$</th>
<th>p</th>
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<tbody>
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<td>Level-1 effect, $r_{ij}$</td>
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Deviance (-2LL) 1729.73

Table 6.9: Results from baseline random-intercept model predicting political participation.
Figure 6.6: Sum of political participation activities by media market groups
Similar to the model predicting perceived winning candidate, I also assessed the intraclass correlation coefficient (ICC), as presented in Equation 6.4, in order to provide a more descriptive statistic:

\[
\frac{.0267}{(1.4550 + .0267)} = .01803
\]  

Equation 6.14 indicates that about 1.8% of the variance in political participation is between media markets. That is, approximately 1.8% of the variance accounted for in this outcome can be attributed to the differences among media group contexts. Hypothesis 6 predicted that there would be significant group-level heterogeneity, so this hypothesis is supported. However, I acknowledge that this ICC is relatively small, at least compared to that of the previous model predicting perceived state-winning candidate. Yet whether this can be labeled “sufficiently close to zero” is often difficult to assess, and there are benefits to using multilevel modeling even when the ICC is near zero (Hayes, 2006b).

Random-Coefficients Model

Next, the three independent variables at Level 1 were entered into the model predicting political participation. This constitutes the RC model, with no Level-2 predictors.

\[
Y_{ij} = \beta_0 + \beta_1(NPUSE)_{ij} + \beta_2(CANDIDATEPREF)_{ij} + \beta_3(PERCEIVEDWINNER)_{ij} + r_{ij}
\]

\[
\beta_{0j} = \gamma_{00} + u_{0j}
\]
\[
\beta_{1j} = \gamma_{10} + u_{1j}
\]
\[
\beta_{2j} = \gamma_{20} + u_{2j}
\]
\[
\beta_{3j} = \gamma_{30} + u_{3j}
\]

Mixed model: \[
Y_{ij} = \gamma_{00} + \gamma_{10}(NPUSE)_{ij} + \gamma_{20}(CANDIDATEPREF)_{ij} + \gamma_{30}(PERCEIVEDWINNER)_{ij} + u_{0j} + u_{1j}(NPUSE)_{ij} + u_{2j}(CANDIDATEPREF)_{ij} + u_{3j}(PERCEIVEDWINNER)_{ij}
\]  

(6.16)
where
\( \beta_0j \) = the overall mean of political participation for group \( j \) weighted by Level-2 sample size
\( \beta_1j \) = the relationship between political participation for group \( j \) as a function of individual newspaper use (slope)
\( \beta_2j \) = the relationship between political participation for group \( j \) as a function of individual candidate preference (slope)
\( \beta_3j \) = the relationship between political participation for group \( j \) as a function of perceived state-winning candidate (slope)
\( \gamma_{00} \) = the mean political participation across all groups
\( \gamma_{10} \) = the slope of individual newspaper use across all groups
\( \gamma_{20} \) = the slope of candidate preference across all groups
\( \gamma_{30} \) = the slope of perceived state-winning candidate across all groups
\( u_{1j}, \ldots, u_{3j} \) = Level-2 random effects

Individual candidate preference was entered into the model as a control variable. All predictors were entered into the model grand-mean centered. The results from this model are presented in Table 6.10.

Table 6.10 shows that, similar to the baseline model, the average political participation per respondent is 1.41 of 7 activities, but this is conditional on newspaper use, candidate preference, and perceived state-winning candidate being at their average (\( M = 3, .52, \) and \(.51 \), respectively). Newspaper use is the only predictor that made a significant contribution to the variance in political participation. That is, the relationship between newspaper use and how much a respondent participates in political activities is represented by \( \gamma_{10} = .09 \) (\( se = .02 \)), controlling for candidate preference and perceived state-winning candidate. In this sense, the average rate of political participation was .09 units higher for each one-day increase in newspaper reading, controlling for the other predictors in the model.
<table>
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<th>Fixed Effects</th>
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<tr>
<td>Newspaper use, $\gamma_{10}$</td>
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<td>.02</td>
<td>.000</td>
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<td>Candidate preference, $\gamma_{20}$</td>
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<td>.10</td>
<td>.344</td>
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<tr>
<td>Perceived state-winning candidate, $\gamma_{30}$</td>
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<td>.694</td>
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<th>$\chi^2$</th>
<th>p</th>
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<td>.012</td>
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<td>&gt;.500</td>
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<td>.425</td>
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<td>Perceived state-winning candidate, $u_{3j}$</td>
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<td>Level-1 effect, $r_{ij}$</td>
<td>1.38</td>
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Deviance (-2LL) 1712.01

**Note.** The chi-square statistics reported are based only 24 of 27 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

Table 6.10: Results from random-coefficients model predicting political participation.

It is possible to obtain a reference for how much variance is explained by the addition of these variables into the model. The Level-1 residual variance, $r_{ij}$, is 1.38, slightly smaller than the $r_{ij}$ in the baseline model (1.46). One minus the ratio of these two estimates can be used to interpret the variance accounted for by adding the predictors to the model (Hayes, 2006b). This computation reveals that the variance accounted for is .055. This statistic is “conceptually equivalent to a squared partial correlation” in OLS regression (Hayes, 2006b, p. 396), and represents how much of the variance remaining in the outcome variable that is not explained by contextual differences can be uniquely
attributed to the addition of the Level-1 predictors. The statistic shows that this addition does not explain much of the unaccounted variance.

**Intercepts-as-Outcomes Model**

This model added the Level-2 predictor, but excluded the Level-1 predictors, in order that we might assess the added variance accounted for by the relative emphasis of Kerry-to-Bush content in one’s media context.

Equation 6.17 shows the IO model,

\[
\begin{align*}
\text{Level 1:} & \quad Y_{ij} = \beta_{0j} + r_{ij} \\
\text{Level 2:} & \quad \beta_{0j} = \gamma_{00} + \gamma_{01}(\text{KERRY-TO-BUSH RATIO})_j + u_{0j} \\
\text{Mixed model:} & \quad Y_{ij} = \gamma_{00} + \gamma_{01}(\text{KERRY-TO-BUSH RATIO})_j + u_{0j} + r_{ij}
\end{align*}
\]

(6.17)

Results for this model are presented in Table 6.11. The table shows that the Kerry-to-Bush ratio in one’s media context did not directly contribute to political participation, at least on its own. However, Table 6.11 reveals that there is still a significant difference between media markets in the rate of political participation among respondents, \( \tau_{00} = .18, p < .05 \).

<table>
<thead>
<tr>
<th>Fixed Effects</th>
<th>Coefficient</th>
<th>se</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept, ( \gamma_{00} )</td>
<td>1.42</td>
<td>.06</td>
<td>.000</td>
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<tr>
<td>Kerry-to-Bush ratio, ( \gamma_{01} )</td>
<td>-.13</td>
<td>.47</td>
<td>.779</td>
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</table>

Table 6.11: Results from intercepts-as-outcomes model predicting political participation.
Table 6.11 continued

<table>
<thead>
<tr>
<th>Random Effects</th>
<th>Variance Component</th>
<th>df</th>
<th>$\chi^2$</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept, $u_{0j}$</td>
<td>.18</td>
<td>25</td>
<td>40.10</td>
<td>.028</td>
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<tr>
<td>Level-1 effect, $r_{ij}$</td>
<td>1.21</td>
<td></td>
<td></td>
<td></td>
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</table>

Deviance (-2LL) 1727.61

*Intercepts-and-Slopes-as-Outcomes Model*

The last step in the presently employed analytical process was to add both Level-1 and Level-2 predictors to create an Intercepts-and-Slopes-as-Outcomes (ISO) model. Here, I included the incongruity measure, which identified whether respondents’s own opinions were the same or different from their perceptions of the state-winning candidate.

Level 1: $Y_{ij} = \beta_{0j} + \beta_{1j}(\text{NPUSE})_{ij} + \beta_{2j}(\text{CANDIDATEPREF})_{ij} + \beta_{3j}(\text{INCONGRUITY})_{ij} + r_{ij}$

Level 2: $\beta_{0j} = \gamma_{00} + \gamma_{01}(\text{KERRY-TO-BUSH RATIO})_{ij} + u_{0j}$
$\beta_{1j} = \gamma_{10} + \gamma_{11}(\text{KERRY-TO-BUSH RATIO})_{ij} + u_{1j}$
$\beta_{2j} = \gamma_{20} + \gamma_{21}(\text{KERRY-TO-BUSH RATIO})_{ij} + u_{2j}$
$\beta_{3j} = \gamma_{30} + \gamma_{31}(\text{KERRY-TO-BUSH RATIO})_{ij} + u_{3j}$

Mixed model: $Y_{ij} = \gamma_{00} + \gamma_{01}(\text{KERRY-TO-BUSH RATIO})_{ij} + \gamma_{10}(\text{NPUSE})_{ij} + \gamma_{11}(\text{KERRY-TO-BUSH RATIO}*\text{NPUSE})_{ij} + \gamma_{20}(\text{CANDIDATEPREF})_{ij} + \gamma_{21}(\text{KERRY-TO-BUSH RATIO}*\text{CANDIDATEPREF})_{ij} + \gamma_{30}(\text{INCONGRUITY})_{ij} + \gamma_{31}(\text{KERRY-TO-BUSH RATIO}*\text{INCONGRUITY})_{ij} + u_{0j} + u_{1j}(\text{NPUSE})_{ij} + u_{2j}(\text{CANDIDATEPREF})_{ij} + u_{3j}(\text{INCONGRUITY})_{ij}$ (6.18)

where $
\beta_{ij}$ = the relationship between political participation for group $j$ as a function of individual media use (slope)
\[ \gamma_{00}, \ldots, \gamma_{31} = \text{Level-2 coefficients (fixed effects)} \]
\[ u_{1j}, \ldots, u_{3j} = \text{Level-2 random effects} \]

Results for this model are presented in Table 6.12. All variables were entered into the model grand-mean centered, which means that the interpretations of the coefficients will be different from models without interactions (Hayes, 2006b). As such, the number of political activities, controlling for other predictors and conditional on the Kerry-to-Bush ratio being average \((M = .86)\), is 1.42. Candidate preference was not significant in its direct effect on political participation in this model.

Hypothesis 7a predicted that political participation would vary as a function of the interaction between newspaper reading and media context, controlling for other predictors. However, there was no significant interaction effect of newspaper reading and media context on political participation when assuming standard levels of significance \((p = .18)\). Hypothesis 7a was not supported.

Hypothesis 7b proposed that the interaction between incongruity and media context would have a significant effect on individual political participation, controlling for other predictors. There was no direct effect of the ratio of Kerry-to-Bush candidate mentions on political participation, and there was no interaction effect when this Level-2 variable was interacted with incongruity. Hypothesis 7b was not supported. Finally, bolstering previous research, these results show that political participation significantly increased with newspaper use \((\gamma_{10} = .09, p < .0001)\), conditional on the Kerry-to-Bush content ratio being at its average, supporting Hypothesis 8.
<table>
<thead>
<tr>
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<td>.714</td>
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<td><strong>Newspaper Use Model</strong></td>
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<tr>
<td>Intercept, $\gamma_{10}$</td>
<td>.089</td>
<td>.02</td>
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<td>Kerry-to-Bush ratio, $\gamma_{11}$</td>
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<tr>
<td>Intercept, $\gamma_{20}$</td>
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<tr>
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<td>.368</td>
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<td><strong>Opinion Incongruity Model</strong></td>
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<td></td>
</tr>
<tr>
<td>Intercept, $\gamma_{30}$</td>
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<td>.15</td>
<td>.989</td>
</tr>
<tr>
<td>Kerry-to-Bush ratio, $\gamma_{31}$</td>
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<td>.89</td>
<td>.605</td>
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<td>Intercept, $u_{0j}$</td>
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<td>Candidate preference, $u_{2j}$</td>
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<td>22</td>
<td>20.22</td>
<td>&gt;.500</td>
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<tr>
<td>Opinion incongruity, $u_{3j}$</td>
<td>.273</td>
<td>22</td>
<td>35.42</td>
<td>.035</td>
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<tr>
<td>Level-1 effect, $r_{ij}$</td>
<td></td>
<td></td>
<td>1.38</td>
<td></td>
</tr>
</tbody>
</table>

Deviance (-2LL) 1708.48

Note. The chi-square statistics reported are based only 24 of 27 units that had sufficient data for computation. Fixed effects and variance components are based on all the data.

Table 6.12: Results from intercepts-and-slopes-as-outcomes model predicting political participation.
The Level-1 residual variance component (1.38) is the same as the variance accounted for in the RC model. So the addition of both Level-1 and Level-2 variables—and their interactions—does not appear to add much variance accounted for over the RC model. The variance component of the intercept (.03, \( p < .01 \)) also suggests that there is still variance to be accounted for in the outcome.
CHAPTER 7

DISCUSSION AND CONCLUSIONS

The purpose of this study was to assess the effects of media content on both perceptions of public opinion and individual political participation accounting for the context of the media market in which individuals live. Such an assessment takes into account that media content varies by geographic location, and tests whether the effects on perceptions and behavior differ as a consequence of this varying content. This study also aimed to advance theoretical work on multiple levels of analysis, as called for by several communication scholars. Since communication exists both within and across levels of analysis, it is important to examine whether existing theories and hypotheses are supported when taking multiple levels into account. Specifically, I suggested in this dissertation that such an analysis might have implications for the study of the perceptual processes of the persuasive press inference, the hostile-media phenomenon (specifically as it results from false consensus and false uniqueness), and social projection, as well as the study of media effects in general. The cognitive information-processing strategies of applicability and accessibility were also discussed as mechanisms by which these effects might occur.
The hypotheses in this study proposed that citizens would be variably influenced by their media context, such that their perceptions of the state-winning candidate in the 2004 presidential election and their participation in that campaign and election would differ depending on their location. Perhaps more importantly, the hypotheses tested whether there were significant direct effects of Level-1 predictors—personal candidate preference, newspaper use, and perceived state-winning candidate—as well as cross-level interactions between these individual-level variables and media context. By examining the content at Level 2, it is possible to obtain a clearer picture of the differences between media contexts or markets—something that is certainly difficult, if not impossible, when assessing Level-1 variables alone. Although not all of the hypotheses were supported, the results provide a considerable step toward understanding the potential for contextual media effects on each of these outcome variables.

Interpretation of Results

*Effects of Media Context on Perceived Public Opinion*

Hypothesis 1 predicted that there would be significant group-level heterogeneity among media markets in perceived public opinion. This hypothesis was supported, and in fact, 44% of the variability in perceived state-winning candidate was accounted for by differences between media markets. This suggests that previous research examining the effects of individual-level predictors on perceived public opinion using national data should reevaluate the influence that these predictors play, considering that one’s location in a media market might play a large role in accounting for the variance in this outcome.
That said, there are certainly other geographical and structural factors that might be explaining perceived public opinion. These will be addressed later in “Future Research.” Importantly, however, the results from this first hypothesis suggest that there is much to be gained from examining group-level characteristics and hypotheses in predicting perceived public opinion.

Hypothesis 2 predicted that perceived public opinion would vary as a function of individual candidate preference across media context groups. This hypothesis was based upon previous research suggesting that individuals often project their own preferences onto others when asked about public opinion climates. The hypothesis was supported, such that one’s own favored candidate had a significant effect on perceived state-winning candidate. Yet this hypothesis was simply one step in a multi-step process that ultimately aimed to include media context and interactions between individual-level variables and media context to predict perceptions of public opinion.

Hypothesis 3 tested such predictions by introducing the media context variable: the ratio of Kerry-to-Bush mentions in local newspapers. This test did not include individual-level variables, simply as a matter of assessing whether media context had a direct effect on perceived public opinion. Results suggested that it did not. Research Question 1 asked whether newspaper use would have a direct effect on perceptions of public opinion after accounting for other predictors. Surprisingly, although newspaper use had a significant, direct, and positive effect on perceived state-winning candidate (in the form of Kerry), the interaction between the media context and newspaper use did not. In other words, an increase of one day of newspaper reading was associated with a 12%
increase in saying Kerry would win one’s state, controlling for other predictors in the model.

Why might the simple fact that someone who reads a newspaper one more day on average would predict a perceived Kerry win, when the media context reflected, on average, more Bush content than Kerry content? One possible interpretation is that more liberals or Democrats read the newspaper than conservatives or Republicans, and their responses simply reflected social projection. Yet, a post-hoc t-test assessing differences between liberals and conservatives in their newspaper reading was not significant, \( t(621) = 1.46, p > .10. \)

One explanation for this finding might very simply be that the content in newspapers projected that Kerry would win, and those who read the newspapers with more frequency concluded that Kerry would win based on this content. Simple descriptive results suggest that there were only two newspapers that had relatively more Kerry than Bush content (the *Worcester Telegram & Gazette* and *the Richmond Times Dispatch*). However, I cannot make such a conclusion based on the data in the present study. Clearly, elaborated coding of the content utilized in this study might lead to a better assessment of whether this was actually the case.

Another explanation might be that respondents who read the newspaper were simply attending to more information about the challenger than the incumbent, for some reason. For instance, since Bush had already been in office for nearly four years, respondents might have been attending to more information about Kerry in order to reduce their uncertainty about the candidate. If so, they might have obtained a biased perception that Kerry was receiving more media attention and—based on the arguments
made earlier about accessibility—more support than Bush. Yet it is likely that this was not the case across all the media markets, and this relationship between newspaper use and perceived public opinion calls for a more nuanced measure of media content. That is, was there something about that content that might lead to a perceived Kerry win with simple exposure to the newspaper alone?

Models testing hypotheses 4 and 5 included candidate preference and newspaper use, as well as the interactions between these individual-level variables and media context. The significant direct effect of candidate preference on perceived public opinion is not surprising, if one adopts the idea that individuals project their own opinion onto others. That is, it is possible that, because a preference for Kerry made one 3.78 times more likely to say Kerry would win their state, this reflected a simple social projection effect. However, it is also possible that people were more likely to be Kerry supporters in areas where there was elevated support for Kerry, which in turn increased their likelihood of saying Kerry would win in that state. In this interpretation of results, one acknowledges that apparent social projection effects may essentially be “reality” effects in which respondents are simply accurately perceiving the opinion climate around them.

One way of assessing this possibility is by examining more closely those media markets located in the state the perceived winning candidate represents: in this case, Massachusetts. Yet in fact, the two media markets in this state—which had among the highest ratios of a perceived Kerry win in this sample—were not among the highest percentages of individual preference for Kerry. Those in the Worcester market reported

---

23 See Table 6.5.
barely above 50% support for Kerry (54.5%), while 68.8% reported favoring Kerry in Boston. This suggests it is possible that when asked about who would win the state, respondents were not thinking of themselves, but of the area in which they were located, countering the social projection hypothesis.

Interestingly, for the models predicting both perceived public opinion and political participation, the interaction of newspaper use and media context was not a significant predictor. One might expect that, as suggested by Huckfeldt and Sprague (1995), exposure to media information is a necessary precondition for media effects. The results provided here suggest that this might not necessarily be the case.

In fact, in predicting a perceived Kerry win for one’s state, there was a significant interaction—not between newspaper use and media context, but between individual preference for Kerry and media context. That is, the more Kerry content was in one’s media context, relative to Bush content, the less likely a Kerry supporter was to perceive Kerry as the state-winning candidate. In other words, a Kerry supporter was 95% less likely to indicate that Kerry would win the state if he or she lived in a relatively “heavy” Kerry media context. ²⁴

The addition of this interaction into the model served to test Hypothesis 5. Results suggest that the addition of actual media content reduced—and in fact reversed—social projection effects. This interaction effect corroborates Gunther and Christen’s (2002) finding that social projection effects weaken when media content is taken into account.

These authors noted that projection effects should lead to misjudgments of opinion in the

²⁴ Odds ratio, from Table 6.7, was .05. Odds = .05 – 1, or .95.
direction of one’s own opinion—and this was true in the present study when Kerry-to-
Bush media was average. But an increase in Kerry content led to the opposite effect, such
that Kerry supporters became less likely to say Kerry would win their state. Hypothesis 5
was supported, such that the interaction between media context and candidate preference
significantly predicted perceived public opinion. In fact, the results showed that there was
a decreasing difference between people who favored the different candidates when media
context was accounted for. Figure 6.5 graphically presents this convergence, where both
Kerry and Bush supporters converge toward the halfway point of predicting a state
winner. Notably, though, as the content features relatively more Kerry than Bush content,
Kerry supporters were less likely to predict a Kerry win in their state.

This counters the “amplification effect,” described in Chapter 4, for Kerry
supporters, whereby one might have predicted that relatively more Kerry content than
Bush content would increase the likelihood of Kerry supporters perceiving a Kerry win.
Results appear to be more in line with the notion of the “reality check” effect, whereby
when media content is divergent from one’s own opinion, one might concede to the
reality of the situation and conclude that public opinion follows media content rather than
projecting their opinion onto others. However, this appears to be true only for Bush
supporters.

There are two potential explanations for this finding. The first involves the actual
valence of media coverage toward the candidates. Unfortunately, the present study did
not examine the valence of media coverage, but this result might suggest that when Kerry
was covered, it was in a negative light. Alternatively, it is possible that when Bush was
covered, the content was more positive, making Kerry supporters more likely to think that Bush would win the state.

A recent content analysis of national television network news might provide some insight into the general tone of campaign coverage of Kerry and Bush. Farnsworth and Lichter (2007) found that although Kerry developed an image as a “flip-flopper” among the public, his coverage on the nightly news was actually more positive than that of Bush in the weeks leading up to the election. In September, 2004, both candidates were covered in a relatively negative light, but in October, coverage of Kerry became much more positive while Bush’s coverage remained relatively negative (Farnsworth & Lichter, 2007). These content analysis findings counter the speculation that Kerry content was negative or Bush content was positive.

Notably, though, this coverage was from national television news programs and these programs likely differed from local newspapers in their approach, which tend to reflect the nature of their communities rather than a focus on the national scale, at least to some extent (Tichenor, Donohue, & Olien, 1980). That is, it is still possible that newspaper coverage of the campaign varied in tone by media market. Future research should examine the content in this study for not only its frequency of candidate mentions, but also the valence of coverage. Moreover, since valence of coverage appears to have differed in September and October, further analyses could include time of interview as another variable (this is discussed further in “Future Research”).

Other types of content, such as the presence of base-rate information and exemplars, might also provide more a more detailed explanation of these initial findings. For instance, research has demonstrated that, although base-rate information tends to be
more accurate, news audiences attend to and recall exemplars more frequently (see Gibson & Zillmann, 1994). An analysis of information presented in polls, as well as exemplars (such as man-on-the-street interviews), could assess how this type of content might influence perceptions of public opinion. The vast research on exemplification shows that exemplars can distort perceptions of severity and prevalence of a problem (Gibson & Zillmann, 1994). Brosius and Bathelt (1994) as well as Perry and Gonzenbach (1997, 2000) concluded that the use of exemplars can influence perceptions of both current and future climates of opinion. It is possible that there were simply more exemplars in the media who predicted Kerry was more likely to win. Examining such distributions in actual media content in combination with assessment of perceived public opinion would add depth to this area of research.

Because the ANES 2004 survey data did not ask about exposure to different sections of the newspaper, it is not possible to conclude whether the newspaper effect is a result of reading actual news or some other type of content. Yet it is possible that, say, Kerry supporters were writing more letters to the editor or columns in the Forum sections of newspapers, making those who read those sections more likely to think Kerry would win. There are numerous such possibilities that could—and should—be explored in future research.

The media-level interpretations outlined above are only one possibility. A second possible explanation for the finding might be based on individual-level factors. For instance, it is possible that Kerry supporters somehow felt less confident that others would vote for Kerry, even when he was covered more in their media contexts. This explanation might reflect a false-uniqueness effect, in that Kerry supporters assumed that
others felt differently from themselves, regardless of the actual media context. It is also possible that, depending on the tone in which Kerry was covered, Kerry supporters might have felt a fear of isolation—in spiral of silence terms (Noelle-Neumann, 1993). Such a fear might have motivated them to withhold (or misreport) their opinion about Kerry’s likelihood of winning in their state. Again, the valence of content, as well as other structural variables that might indicate the climate of opinion, would need to be measured to assess this further.

Research on false uniqueness provides a counter-interpretation, however. It suggests that individuals who are generally higher in fear are less likely to perceive themselves as more unique than they actually are (Suls & Wan, 1987). This motivation comes from a need for social belonging. Clearly, some measure of fear of isolation or willingness to speak out would add a great deal to these interpretations and to the literature on the spiral of silence and false-uniqueness effects as they relate to the media.

The persuasive press inference might also provide both content- and individual-based explanations for this somewhat counter-intuitive finding. For instance, if a Kerry supporter saw more of Kerry in the newspaper, and she believed that the media influence others’ opinions, she might conclude that public opinion would follow the slant of media coverage. Such a conclusion might result from two possible, non-competing factors: that (1) media content was actually negatively slanted toward Kerry, or (2) individuals perceived media content to be hostile toward Kerry and concluded that this hostile media climate would influence others to vote for Bush. That is, it is possible that people appeared to see media as a persuasive agent and others as being persuaded by the slant in media content. This process of personal opinion ➔ perceived hostile-media climate ➔
perceived public opinion, whereby perceived news slant is an indirect effect, was supported in Gunther and Christen’s (2002) findings. Although the methods employed here do not permit analysis of such indirect paths, they do lend added support to those findings and call for attention in future research.

In reviewing each of these possibilities, one must acknowledge that it is perhaps most likely that the information environment and individual information-processing strategies intertwined to produce effects on perceived public opinion. In their think-aloud studies, Shamir and Shamir (2000) found that often respondents were aware that they were using their own opinion as anchors for estimating public opinion. Particularly if respondents belong to the majority, they may draw the same conclusions as if they were simply projecting their opinion onto others “on the basis of public opinion polls, political action groups, or other information” (p. 66). This suggests that, although projection is likely a common heuristic used in assessing public opinion, there is probably an interaction between the information obtained in one’s media and interpersonal-discussion environment and these modes of information processing (Shamir & Shamir, 2000).

The present study provides an important first step toward future research assessing the above possibilities, as well as a baseline from which to examine incremental effects of other types of content. Because few studies have incorporated variations in actual media content into the analysis of survey data to parse out media effects on perceptions of public opinion, the present study may indeed ask more questions than it answers. Yet this study did demonstrate that there are differences not only in media content among the newspapers in various media markets, but also between individuals who reside in those markets. These results suggest that there are many directions for
future research to explore further connections. That individual perceptions can be attributed, at least in part, to differences in media context adds credence to the claim that context matters and should continue to be discussed in both its measurement and its influence on individual cognitions and behaviors.

Effects of Media Context on Political Participation

Hypothesis 6 examined whether there would be significant group heterogeneity in political participation, and this hypothesis was supported, although the ICC was relatively small. As Hayes (2006b) suggested, whether this can be labeled “sufficiently close to zero” is often difficult to assess, and there are benefits to using multilevel modeling even when the ICC is near zero. Based on the fact that the Chi-square test was significant, I moved forward with analyses, but acknowledge that there will likely be many individual-level variables not included in the model that might account for the unexplained variance.

Media use has long been associated with higher levels of community and political participation, and this relationship was borne out in the present study. When newspaper use was entered into the final model, even controlling for other individual- and contextual-level variables, it significantly and positively predicted political participation. This echoes both historic (e.g., Teixeira, 1987) and recent (e.g., Kang & Kwak, 2003; Moy, et al., 2005) work, demonstrating the endurance of this relationship. This finding also suggests that, even though the final sample of respondents is smaller than the original ANES sample, results are consistent with those of representative samples.

The implications of this relationship between newspaper use and political participation resonate with past research, in that they elevate the importance of
newspaper use in the vital democratic behavior of participating in electoral politics. Such participation enhances both civil and democratic life (Putnam, 2000; Verba, Schlozman, & Brady, 1995) and fulfills a key assumption of a successful democratic society (Youniss & Yates, 1997).

Yet there were differences in the levels of participation, even in media markets that existed in the same community. For instance, the average participation among respondents in the New York Times market neared two activities, but was less than one activity in the New York Daily News market (see Figure 6.6 in the previous chapter). There are also differences between markets in the same state; the average level of participation in the Miami Herald market was almost 2, while those in the Lakeland Ledger market participated in less than .5 activities on average. What these descriptive statistics and the nonsignificant results from the model predicting political participation reveal is that there are differences between people in these various locations, but those differences appear to be due to other factors than media context.

The cross-level interaction hypotheses predicting political participation were based on the assumption that individuals participate in politics in a rational way, considering their own opinions and the opinions of others in their decision to vote, attend rallies, or participate in other ways. Hypothesis 7a predicted that there would be a significant interaction between media context and newspaper use in predicting political participation. The justification for this hypothesis was based on previous research that suggested individuals make strategic decisions about participating in politics, and that the media context might reduce one’s uncertainty about whether or not they should participate. However, this hypothesis was not supported based upon standard assumptions.
of significance levels. As mentioned earlier, the valence of coverage—as well as coding exemplars and base-rate information—might provide a more detailed look at the content in one’s media market. Yet it appears from these results that respondents were not making decisions on whether or not to participate based upon what they saw in the media about the two candidates.

The results also did not support Hypothesis 7b, which suggested that the level of congruity—or agreement—between one’s own opinion and one’s perceptions of others’ opinions would interact with one’s media context to affect political participation. As noted in Chapter 5, this measure was developed post hoc, which might explain the nonsignificant findings. A more direct measure of one’s perceptions of an agreeable or disagreeable opinion climate might yield significant findings. Future research is encouraged to assess this phenomenon using such a measure.

Overall, the results from the first set of hypotheses predicting perceived public opinion were supported more frequently than the hypotheses predicting political participation. Future research predicting political participation might include other variables known to play a role in affecting this behavior, such as education, income, and partisanship. These will be discussed in “Future Research” below.

Limitations

This study utilized computerized content analysis for assessing media content. This method allowed for the sample size to be quite large, and reduced the amount of human error that is inherently involved in coding media content. This study also added to previous research by examining multiple levels of data, including both media content and
individual survey responses during the 2004 presidential campaign. Many scholars have
called upon communication scientists to utilize multilevel modeling, and this dissertation
answered that call by assessing individuals within their media context. However, as with
any research, there were some limitations to the methods and data employed in this study.

Computerized Content Analysis

Although the computerized content analysis added to the understanding of media
context in the present study, it also had its drawbacks. While it is time-intensive to create
reliable dictionaries to code such manifest items as the frequency of a topic, it is even
greater to code for any latent content, such as the valence of a story. As the results
demonstrate, there are some counterintuitive findings about the amount of Kerry content
in one’s media context and its effect on both perceived state-winning candidate and, to a
less significant extent, political participation. That is, one would expect—and the
hypotheses proposed—that the more a candidate is covered in the local media, the more
likely respondents might think that candidate is doing well in his or her locale. This
presumption is based upon psychological research on information processing, which
suggests that frequency and recency of activation of some issue or topic increases the
likelihood of that issue or topic being accessed when it is called upon. Furthermore,
because research has demonstrated that people tend to think the media has effects on
others, at least more than on themselves (Mutz, 1998), these hypotheses are sensible.

There may have been something about the valence of coverage that led to these
findings. As mentioned earlier, it could be that the more Kerry was covered in a given
newspaper context, the more negative the coverage was. Thus, a person who observed
this coverage took into account not only the frequency of Kerry mentions compared to Bush mentions, but the positive-to-negative evaluations of the candidate as presented in the media. Thus, although there were clear benefits to using the computerized content analysis software (i.e., large sample size, reduced human error), the limitations in coding latent content make it a more difficult—albeit not impossible—method for assessing valence of news stories about the candidates.

Additionally, because it was necessary to match individual respondents in the ANES survey with their media markets, there was a loss of cases due to the lack of availability of some newspapers. Some of these newspapers were simply not available electronically, while others did not appear to be reliably accessible using database search terms. Also, it is likely that there were stories in the content analysis that were not solely campaign stories (despite the good human-to-computer reliability) and, alternatively, that there were campaign stories in the universe of content that were not included in the sample. These limitations are notable, but certainly the capability for analyzing such a large selection of content ($n = 10,878$) among a varied set of sources ($j = 29$) counters the limitations to some extent.

Moreover, the inclusion of other types of media in one’s media market would have added great depth to the present analysis. Local television news and national television news both cover presidential campaigns, and citizens often turn to cable news and the Internet for information about candidates. In fact, in 2004, 11% more of the general public used the Internet to obtain political information about the campaign than they did in 2000 (Rainie, Cornfield, & Horrigan, 2004). It should be noted, however, that the majority of sites visited were those of national and local news organizations. The Pew
Internet & American Life Project (Rainie, et al., 2004) also reported that Kerry supporters were more likely to engage in online political activities, such as finding out how candidates were doing in the polls (55% of Kerry supporters compared to 47% of Bush supporters); visit campaign web sites (31% of Kerry supporters compared to 12% of Bush supporters); and cite that the Internet influenced them in such decisions as whether to vote (26% of Kerry supporters said Internet sources encouraged them to vote, compared with 14% of Bush supporters). This suggests that the findings of the present study may be due to these dramatic differences in how supporters of each candidate used the Internet and possibly other media sources.

Finally, as outlined in the literature review, there are four criteria of analysis needed in order to establish media effects: 1) assess media content; 2) control exposure of the audience to content; 3) assess the effect of the content; and 4) elaborate on conditional processes (McLeod & Reeves, 1980). Although the present analysis allowed for assessment of media content and its effects as well as elaboration on conditional processes, a major limitation is that I was not able to control for exposure of the audience to the specific content analyzed here. This is a result of one of the primary challenges facing mass communication scholars: choosing whether to conduct an experiment with controlled exposure to content, or assess the effects of such content in the real-world context. In order to obtain a large sample with real-world content, I sacrificed the important element of control over exposure. Although this does not necessarily invalidate my results, it is important to consider in interpretations of results—especially those that do not include newspaper exposure as a control or contingent condition.
The ANES 2004 survey data also had its limitations for the present study. For instance, the outcome measure in the first set of models was the respondents’ perceived state-winning candidate. Specifically, the question asked respondents whom they though would win their state in the upcoming election. The most obvious limitation of this outcome variable is that it is a single-item measure without known reliability. In addition, although this question does tap into a respondent’s prediction of how people in his or her state might vote, it is not a direct measure of “perceived public opinion.” Better, more direct, question wording might be, “Which candidate do you think the majority of people in your state favor?” Such a question does not ask respondents to take into account factors such as who will actually vote in the election—as the prediction question does—but it asks them to simply think about the climate of public opinion in their state. In addition, this suggests that a more accurate measure would have asked about the public opinion in one’s media market, rather than one’s state, although this likely would not have been easily interpretable by respondents.

In an ideal scenario, a survey would have the least ambiguous and most direct questions in order that respondents understand precisely what the researcher is after. Yet one of the downsides of using secondary data is the reliance on available questions. Although the ANES 2004 survey provided a combination of other factors that made it appealing over and above the question wording on perceived state-winning candidate,

25 Individual candidate preference was also a single-item measure, but there are a number of like/dislike variables included in the ANES 2004 survey that might be used to tap into feelings about the candidates, rather than intended vote as included in these analyses.
there were limitations in the question wording. However, the data were collected in clusters, which grouped people in common locales, and geographic information was available in order to identify individuals’ media markets. If anything, the question wording provided a conservative test of the hypotheses, and different wording might reduce the amount of noise and result in significant findings.

The other outcome variable, political participation, was asked in a survey given shortly after the 2004 election, and asked directly about a respondent’s activities in the recent months prior to the election and on Election Day. Fortunately, the recency of these behaviors makes it more likely that respondents would remember having participated in a given activity (Tourangeau, Rips, & Rasinksi, 2000). However, more respondents reported that they voted in the election than the population as a whole: approximately 78% in the sample compared with 64% in the general population (U.S. Census, 2005). This trend of over-reporting is common in studies that ask about prosocial behaviors, such as voting (Tourangeau, Rips, & Rasinksi, 2000) and was likely due to two non-mutually exclusive factors. First, these respondents not only agreed to participate in the first ANES 2004 interview, but agreed to be re-interviewed after the election. Such eagerness to participate suggests not only an interest in the topic of the survey, but also a potential likelihood among respondents to be more participatory than those who did not agree to be interviewed. Second, respondents likely suffered from some social desirability concerns, as many people do when asked about voting, even though the survey provided sophisticated measures for assessing voter turnout (described in detail in Chapter 5). Perhaps most importantly, this measure of participation was of questionable reliability (α = .62). Regardless of these limitations—which plague nearly all studies of
political participation in some form or another—the data provided a relatively robust measure of participation in that the questions were asked so near the end of the campaign.

As many mass communication scholars can attest, the media use and attention variables in secondary data are often far from satisfactory. This is so in the present case. Newspaper use was measured simply as the number of days respondents read a newspaper, and this was a single-item measure with an unknown reliability. A more suitable measure might ask about which newspaper the individual read, as well as whether they attended to campaign information in the newspaper. Such a measure was provided in the ANES 2004 data set. However, a correlation between the measure of newspaper exposure and attention to campaign news revealed that these measures were highly correlated at $r = .54$, $p < .0001$. As such, I feel confident in safely assuming that the results would likely be similar if I had used the attention measure.

What is fascinating about these results is that, even controlling for newspaper use—granted, as an imperfect measure—we see effects of one’s media context on both perceptions of public opinion and political participation when interacted with other individual-level variables. This raises the question of whether one’s media context can have an indirect effect on these outcome variables, such that a person need not even read a newspaper in order to be affected by the relative content therein. One interpretation is that this might be a result of a two-step flow, such that media content influences the individuals who read it, and these individuals discuss the content with others who consider them opinion leaders (Berelson, Lazarsfeld, & McPhee, 1954; Katz & Lazarsfeld, 1955). Yet it might also simply reflect the social reality in one’s media market. The finding raises interesting questions about whether media effects can occur
indirectly, but calls for the inclusion of more structural variables that represent the reality of one’s community.

Such questions must also take into account that these effects might arise from the influence of some exogenous variable. For instance, perhaps there was some trend whereby respondents planted themselves in these communities based upon the relative attention to candidates in the newspaper. Or, it is also possible that citizens somehow systematically influenced how journalists covered the campaigns based upon their own preferences—just as there might have been some influence from the campaigns themselves. These scenarios are improbable, however, and the findings of the present study are most likely not a result of such anomalies. That a person chooses to live in an area simply based on the relative attention to different candidates in the major newspaper(s) of that locale is probably a highly unlikely occurrence.

However, it is more likely that a person chooses to live in a location based on the perceived ideological climate therein (e.g., “Madison, Wisconsin is full of liberals, and I don’t like liberals so I will never live there,” or “I love liberals, so I’m moving to Madison”). As a result, the local newspapers might tend to cover issues from a perspective that reflects the ideals of the community, which would produce media content that is actually endogenous to the prevailing climate of opinion in the community. The inclusion of structural, compositional, and global variables could certainly add to our understanding of these processes. This leads to some ideas for future research.
Future Research

It is easy to imagine many possible variables and levels of analysis when one considers the methodological possibilities of multilevel modeling. Moreover, there are also mapping techniques, such as ArcGIS (Ormsby, et al, 2004), that allow researchers to look for visual patterns of these data across contexts, providing even more detail than the statistical analyses presented here. Indeed, the current study provided only an introductory exploration into the effects that might be found. The results showed that there is still some variance among media markets in the perceived state-winning candidate and political participation that was not explained by the included Level-1 and Level-2 predictors. This suggests there are more directions for future researchers to explore, including—but not limited to—the addition of temporal and structural levels.

Time as an Added Level of Analysis

Mass communication—that component argued to be the primary impetus for learning about public opinion—is inherently dynamic, which makes conceptualization and analysis of related phenomena admittedly difficult (Price & Roberts, 1987). Because public opinion is a process that develops over time (Hoffman, et al., 2007), cross-sectional snapshots simply can not capture the causal attributes of these phenomena. It is not possible to make causal claims from the results presented here, but the addition of time provides at least one added criterion that is often needed to allege causality: the presence of temporal order.
In light of the theoretical work outlined earlier on accessibility and availability, an interesting extension of the present work might be to assess the content only on the day of or the day before an interview with a respondent took place. We know that media consumption enhances accessibility (Shrum, 2002) and information activated by the media can be judged to be more applicable to a situation (Roskos-Ewoldsen, et al., 2002), such as when one is asked who will win an election. An analysis that assesses such timing of information access could produce clearer linkages between the media content and one’s responses about perceived public opinion because (conditional on whether they read the newspaper) such information would be more readily accessible in one’s working memory.

The data analyzed for the present study also have the benefit of measuring individuals at two points in time, and the media content spans every day of coverage over a two-month period. Another direction for future research is to account for the passing of time and how media content changed over time. That is, a researcher could examine the influence of media content on individuals by actually accounting for when their interview took place and what the media context looked like at the time. In addition, one could assess the effects of being exposed to news at Time 1 on participation at Time 2, controlling for the attributes of media context. This more complex analysis could account for not only contextual variations, but also be better able to make claims about causes and effects of media content and use. Moreover, it might provide insight into the fluctuations that occur in news media’s attention to presidential campaigns over time, as evidenced in Figure 6.1 in the previous chapter.
The Addition of Structural and Compositional Variables

In the literature review, I outlined several types of contextual variables. One of those variables was labeled “structural” by Books and Prysby (1991). Such variables deal with relational patterns among individuals within a unit of analysis. This could involve some type of activity that occurs within the unit. Structural data are available from numerous sources that could add depth to the present analysis, such as presidential party expenditures by location (Center for Responsive Politics, 2007). Such data could be added as a third level of analysis and might provide more nuanced interpretations of the phenomena of interest.

A contextual analysis that attempts to uncover varied influence in different geographical areas should ideally assess how campaigns target certain areas over others. For instance, although campaign expenditures might not have direct effects on voter preferences—that is, few people vote for candidates because they were actually paid to do so (Goldstein & Freedman, 2000; Stewart & Reynolds, 1990)—research in political science has demonstrated that campaign strategies vary significantly by location and, at the aggregate level, this does influence how well a candidate does in a particular location (e.g., Campbell, et al., 1984; Ridout, et al., 2004; Stewart & Reynolds, 1990). In other words, campaign activity, which can produce both cognitions (e.g., perceptions of public opinion) and behaviors (e.g., political participation in the campaign), is often crucial to a candidate’s success in an election.

In addition to campaign expenditure, parties target areas differently in their personal contact, mailings, and other campaign activities. Although party activity has been one of the more actively studied structural contextual effects (Books & Prysby,
the findings are not by any means conclusive. For example, Wolfinger (1963) found that local party activity influenced turnout, and Blydenburgh (1971) concluded that it actually impacted partisan direction of the vote. Yet other studies (e.g., Kramer, 1970) have found that local party activity can be counterproductive. Importantly, Blydenburgh (1971) concluded that the different findings may actually be a result of media content, which can differ by geographic location. The competition among candidates for certain geographic areas is certainly more intense in some areas over others (Books & Prysby, 1991; Cutright & Rossi, 1958). The results from the present study show that there is still variance to be accounted for beyond media context, and a study that includes both party activity, for example, and media content could greatly enhance our understanding of the processes at work.

The introduction of aggregated demographic variables can also add a more stringent test of media effects in context. These would be labeled “compositional” variables by Books and Prysby (1991), and have methodological problems, but are often used in research (e.g., Kim & Ball-Rokeach, 2006). Scholars have argued for such techniques as controlling for expected predictors, such as demographics, and introducing third “test” variables (see Davis, 1985) to test causal models. There are also theoretical reasons for including such compositional variables as ethnic and racial heterogeneity (c.f. Huckfeldt & Kohfeldt, 1989; Key, 1949; Tam Cho, et al., 2006; Wright, 1977); community socioeconomic status (c.f., Huckfeldt, 1979) and class (c.f., Langston & Rapoport, 1976); and distribution of ideology in a community (c.f., Gimpel, et al., 2004), which can often predict not only partisan preferences but also the probability of simply turning out to vote.
Finally, the information-flow perspective (Orbell, 1970) outlined in the literature review states that there are four mechanisms by which people obtain political information: social interaction, personal observation, organizations, and the media. It is possible, and highly probable, that people were obtaining at least some information about the presidential campaign from these other sources. Assessment of interpersonal discussion and attention to other sources of information besides newspapers (as outlined earlier in this chapter) would provide a true test of this perspective.

**Other Types of Content**

Books and Prysby (1991) also outlined the need for examining “global variables,” which are characteristics of the environment that are not directly tied to the individual characteristics or behaviors of individuals within the unit. The analyses here employed media content as a global variable, but there are not only other types of content, but other types of global variables that might be included in future research. For instance, data exist on rates of political advertising by location (Wisconsin Advertising Project, 2007), and the actual winning candidates by state in previous elections (National Election Studies, 2006).

Political advertising is one global variable that might add insight into effects of campaigns on both perceived public opinion and political participation. Rates of such advertising are likely to have varied effects depending on one’s location. Residents of Ohio during the 2004 election, for example, probably had a very different viewing experience when it came to presidential campaign ads than residents of a more ideologically homogeneous (and less contentious) state, such as Washington. At least one
study has incorporated media-market measures of political ads in combination with individual survey responses and found that candidate knowledge was significantly impacted depending on one’s location and attention to media (Ridout, et al., 2004).

Finally, the increase of “ad watches” and attention to political advertising by news outlets (Frantzich, 2002) suggests that there might be useful connections between the presence of ad content in a locale and news attention to the campaign. Political advertising on television has been studied extensively, and has been found to be a source of information over and above news (e.g., Brians & Wattenberg, 1996). Ads also contribute to voter turnout, interest in the campaign, and familiarity with the candidates (Freedman, Franz, & Goldstein, 2004; Goldstein & Freedman, 2002; Ridout, et al., 2004). The effects of ad watches and political advertising might be easier to interpret when placed within context, particularly since campaigns often tailor advertising messages to certain areas over others (Books & Prysby, 1991).

It is possible that coding for other types of content may have produced significant findings—or perhaps eliminated some of the effects presented here. As mentioned earlier, there are several types of content, such as base-rate versus exemplar information and editorials and letters to the editor versus news, that, when taken into account, might provide a more detailed explanation of the media context effects on perceived public opinion. In addition, if coding had been focused on the presence of mobilizing information (Hoffman, 2006; Lemert, 1981), which provides readers with information on how to become involved, it is possible that a significant effect of media context on political participation might have emerged. A forthcoming goal of my research program
is to examine the presence of such information and its effects on individual participation in political activities.

The results presented in this study, then, may have asked more questions than they have answered. Fortunately, multilevel modeling allows for such analysis and future researchers are encouraged to explore these avenues.

Conclusions

Importantly, this research provided the first critical steps in a developing research program where I will (1) continue to examine both manual and electronic methods for reliably analyzing media content, and (2) add related temporal, structural, and global variables to these models in order to further understand the processes by which people perceive public opinion and become politically involved. The research presented here enabled me to connect several areas of research—namely, communication, social psychology, and political science—and there are myriad possibilities for creating further cross-disciplinary linkages. Yet the questions proposed by this study are by no means answered. The results have certainly provided insights into the phenomena of interest, but they have also proposed new questions that will inspire future research.

This dissertation also serves as one component of an ongoing research program that seeks to assess the nature of public opinion, as well as its effect on others. Noelle-Neumann (1993) asserted that public opinion inherently involves the interaction of people with others. In fact, this interaction transforms the sum of individual opinions into public opinion. Here, I focused primarily on the effects of one’s media context on their perceptions of public opinion. But I hope to continue to examine additional ways in
which individuals interact with others, such as like-minded others and disagreeable others, near others and far others, mediated and non-mediated others, and the perceptual processes that often bias these interactions in producing perceptions of public opinion.

As McCombs argued in 1972, echoing the sentiments of Lippmann (1922), “No two individuals possess the same cognitive map of politics—or set of political cognitive images—because of the numerous combinations resulting from: (a) the physical and social environment; (b) personality, values, and goals; (c) previous experience, ranging from formal education to casual observations” (p. 180). Although this core assumption is maintained today by many mass communication scholars, a triangulated approach to unraveling the effects of these various factors on political cognitions and behaviors has not yet become the standard analytical approach.

When dealing with a phenomenon such as public opinion, that is transitory and bound up with place and time (Noelle-Neumann, 1993), it is essential to examine potential combinations of ongoing processes of influence. Although we know that the media do influence perceptions of social reality (Christen & Gunther, 2003; Davison, 1983; Fields & Schuman, 1976; Gunther, 1998; Gunther & Storey, 2003; Mutz, 1998; Mutz & Soss, 1997), it is necessary to account for multiple levels of influence. The methods utilized in the present study, although they have limitations, provide some framework for examining these effects within and across levels of analysis. By assessing these individual factors alongside structural, contextual, and other related variables, we might obtain a more complete picture of the processes at work in predicting both perceptions and behaviors.
LIST OF REFERENCES


