

Agenda-Setting and Mathematically Predictable Mass Behavior

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Dedication

This thesis is dedicated to my parents and my best friend.

You have my unending gratitude.

Abstract

Agenda-setting, or the influence of media on public perception, has been the focus of numerous studies over the past three decades (Bryant & Zillman, 2002; Lowery & DeFleur, 1995). Although these studies vary in methodological and ideological approach, there is strong support for the agenda-setting influence of news media, especially over extended periods of time (Bryant & Zillman, 2002; Funkhouser, 1973; Zhu, 1992). However, correlation strengths between media and public agendas in studies range from .05 to .967 (in the most extreme cases, with the majority falling closer to an average influence range of .35-.8) (Wanta & Ghanem, 2007), and some have argued that these correlation differences are evidence of a flaw in agenda-setting theory (McLeod, 1974). Correlation variations do not, however, necessarily contradict agenda-setting theory but may instead be the natural variation resulting from a dynamic process between the media and the public, where information is acquired, absorbed and organized by individuals, and then used to seek out and organize further information.

Originally a simple prediction of correlation between the news media and public issue salience, agenda-setting has evolved to include a myriad of variables dealing with the ‘discrepancies’ of human behavior (McCombs, 2005; Wanta & Ghanem, 2007). Human behavior is not perhaps as simple as predicting the movement of particles, largely due to a phenomenon commonly known as free will (Ball, 2004; Dalton, Beck, Heckfedldt & Koetzle, 1998). It is, however, predictable, because even pure randomness – either in particles or in human behavior - gives way to determinism if the number of

random events is large, as individual will is submerged by the constraints of society (Ball, 2004).

The means to predict mass behavior is already available in existing agenda-setting studies. Theoretically, by looking at existing agenda-setting studies and understanding the conditions under which different correlation strengths occur, it should be possible to extract patterns of behavior, extrapolate the influence of variables on the relationship between the media and the public, and effectively predict varying correlation strengths of different studies according to their situational conditions.

Table of Contents

	v
Acknowledgements	i
Dedication	ii
Abstract	iii
Table of Contents	v
List of Tables	vi
List of Figures	vii
Chapter One: Literature Review	1
Hypothesis	24
Chapter Two: Methodology and Results	30
Chapter Three: Discussion	48
Bibliography	59

List of Tables

Table 1: Agenda-Setting Effects by Personal Knowledge (Low-High)	43
Table 2: Agenda-Setting Effects by Personal Knowledge (Low-Mid-High)	43
Table 3: Agenda-Setting Effects by Media Exposure (Low-High)	44
Table 4: Agenda-Setting Effects by Media Exposure (Low-Mid-High)	46
Table 5: Agenda Setting Effects by Media Exposure Type and Exposure Levels	46

List of Figures

Figure 1: Personal Knowledge / Agenda-Setting Relationship	24
Figure 2: Media Exposure / Agenda-Setting Relationship	27
Figure 3a: A Simple Conceptual Model of Agenda-Setting	55
Figure 3b: Magnitude of the Relationship Between The Media and Public Agenda	56

Chapter One: Literature Review

In his introduction to his book *Public Opinion*, Walter Lippman describes our interpretation of the world as cognitive maps, or the attempt to organize our experiences with environment, events, and others into neatly organized and easily accessed mental ‘pictures’ (Bryant & Zillman, 2002; Dearing & Rogers, 1996). As our exposure to the world grows, the news media becomes a window to the world beyond our direct exposure, and therefore determines in large part our cognitive maps of that world; or, as Lippman put it, people “construct a pseudo-environment that is subjective, biased, and necessarily abridged mental image of the world,” and therefore “live in the same world, but think and feel in different ones” (Bryant & Zillman, 2002; McCombs & Shaw, 1972; McCombs, Shaw & Weaver, 1997). He cites mass media as one of the major contributors to these conceived worlds.

McCombs and Shaw (1972) tested the media’s role in influencing public perception in their now-famous Chapel Hill study, in which a number of undecided voters in Chapel Hill, North Carolina were surveyed for their opinion of the ‘key issues’ affecting the nation. Those results (the *public agenda*, or the public’s hierarchy of relevant issues at a certain point in time) were compared to news coverage from multiple major media sources (the *media agenda*, or social problems, figures and events that receive mass media coverage). The relative agreement (correlation) between the public agenda and the media agenda was dubbed *agenda-setting*, or the extent to which the media can and do affect the public’s perception of the importance of certain topics and issues (Bryant & Zillman, 2002; Lowery & DeFleur, 1995; McCombs & Shaw, 1972).

The Chapel Hill study showed a positive agenda-setting correlation of .97, a strong relationship that has proven difficult to repeat consistently (Bryant & Zillman, 2002; Wanta & Ghanem, 2007). In over 350 studies since Chapel Hill, agenda-setting correlation strengths have ranged from near perfect agreement (approaching 1) to inverse relationships (especially on the issue of morality). Some initially disagreed that a relationship exists, or negate the possibility of a strong, direct effect (Hubbarb, DeFleur & DeFluer, 1975). McLeod, Becker, and Byrnes (1974) argued that the effects proposed in agenda-setting hypothesis were only moderately supported by the evidence.

In addition, the results suggest agenda setting is not a broad and unqualified media effect. Predicted differences mainly were restricted to the less involved and less motivated partisans who were heavily dependent on the newspapers for their political news. Finally, the importance of studying issue saliences apart from political attitudes was illustrated by the relatively strong relationship between such saliences and voter turnout and direction. (McLeod, et al, 1974, abstract)

Most communication scholars now agree that over 4 decades of accumulated evidence show agenda-setting to be a valid theory; however, there are still difficulties explaining variations in agenda-setting strength. Scholars have numerous theories explaining variations in agenda-setting correlation strength, the most popular and frequently tested of which are moderating variables (McCombs, 2005). Some examples of moderating variables include: issue relevance, or the extent to which an individual believes in the weight or importance of an issue (to them or to a populace, based on factors such as direct experience, education and media information) (Atwater, Salwen, &

Anderson, 1985; Eaton, 1989; Hester & Gibson, 2007); the need for orientation, or the need to seek out information (from media sources), depending upon the relevance of the topic and the uncertainty associated with its understanding (Bryant & Zillman, 2002; Hester & Gibson, 2007; Hill, 1985); audience intentions for media use (Hayes, 2008; Hill, 1985; Lasorsa & Wanta, 1990); and the level and type of media exposure (Lasorsa & Wanta, 1990).

Some accuse methodology to be the culprit behind inconsistencies in agenda-setting correlation results. Cross-correlation studies are the most common method used: these studies often ignore the effect of time on the media-public relationship (Behr & Ivengar, 1985; Funkhouser, 1973) and cannot determine causal influence (Zhu, 1992). Time-lag and cross-lag correlation studies can infer causation and show relationships over time; however, although the cumulative evidence has shown that there is indeed a causal relationship over time from the media to the public, the most effective time period seems to vary by issue (McCombs, 2005; Stone & McCombs, 1981). Zhu (1992) points out that time-series analysis, arguably the most powerful measurement tool for agenda-setting effect, is most effective when studying agenda-setting issue by issue. A consequence of this is that the study then lacks the ability to accurately measure the competition of issues for audience attention (zero-sum capacity), an underlying paradigm built into all agenda-setting studies.

Individual differences may also play a part in agenda-setting variance. People vary dramatically by background, environment, age, attention span, interests, personal experience, media usage, intelligence, psychological capacity, and any number of other

demographic and psychographic measures. Individual differences, it is argued, add “noise” – an idiosyncratic or nuisance variance – and serve as natural modulators to agenda-setting (Dalton, Beck, Huckfeldt, & Koetzle, 1998; Erbring, Goldenberg & Miller, 1980).

And finally, social constructs can play an inhibiting role in measuring agenda-setting effects. Mass communication scholars tend to describe agenda-setting as the cognitive effect of the media on the public, while political science scholars have pointed out the more dynamic applicability of agenda-setting as an interplay between the media, the public, the elites, policy adoption and the establishment of institutions (Dalton et al., 1998). Yagade (1990) points out that the indicators of agenda-setting conditions are themselves social constructs.

With so many intervening variables and lack of one cohesive testing method, is there any way to accurately and consistently test agenda-setting effects? The few meta-analysis studies that have been conducted show that, in the aggregate, there are indeed consistent effects. Wanta & Ghanem (2007) state that the “vast majority of... studies have found widespread support for a media influence on issue salience.... Because of the differing methodologies, a meta-analysis seems especially appropriate. Several methodological artifacts could influence the magnitude of agenda-setting effects found by researchers.”

If, despite large numbers of incongruencies in mass communication studies, audience types and methodologies, *consistent behavioral patterns and trends still arise*, then that is strong evidence that agenda-setting is both theoretically sound and effectively

testable (Ball, 2004; Wanta & Ghanem; 2007). Another possibility – one that is frequently mentioned in the study of moderating variables but is lacking the conceptual model of agenda-setting - is that the *predictability* of agenda-setting is a culprit for apparent inconsistencies of correlation strength between studies.

Currently agenda-setting theory suggests a high correlation between media and public agenda. Ironically, this is a rather static and reflexive prediction for an admittedly dynamic process: it is counterintuitive to expect consistent outcomes for a theory that admittedly not only *describes* a dynamic process, but actually *tests for the effects of moderating variables only to ignore the logical outcome of moderating variable influence – variations in agenda-setting correlation strength*. It is theoretically more sound to expect not consistently high correlations for agenda-setting effects, but rather an ever-changing dynamic relationship between the variables effecting the media and public. Therefore it is also possible that the variations in correlation strength between agenda-setting studies is not indicative of theoretical, variable or methodological problems but rather reflects the dynamic nature of the agenda-setting process. This thesis will explore this idea in more detail, as well as the possibility of mathematically predicting these dynamic interactions.

Information Processing

Understanding the dynamic nature of agenda-setting, or any communication process, necessitates understanding the flow, organization, and utilization of information (Axelrod, 1973; Dalton et al., 1998; Wanta, 1997). Most simply, the information process

includes a source, a message, and a receiver (Axelrod, 1973). The interactions between these objects begin, also most simply, with a source coding a message and ends with a receiver decoding the message (Bryant & Zillman, 2002). However, sources have personal agendas, purposes and intentions; messages vary by type and intent, not to mention linguistic and cultural relevance; receivers have their own intents in the use of sources and interpret messages based on their individual understanding, which varies based on a number of variables; and the efforts to code and decode properly often vary greatly based on the intents and experiences of both the source and receiver (McCombs et al., 1997). Many of these differences arise in great part due to pre-existing “pictures in our heads” – mental schema or ways of organizing incoming information to make sense of the world – which are dynamic, complex, and constantly growing or changing with the addition of new information (Axelrod, 1973; Dalton et al., 1998; Dearing & Rogers, 1996; Wanta, 1997).

The effort to organize the flood of incoming information – and then to generate an information search or create more information – is a complex and circular process (Hester & Gibson, 2007). Despite the world’s complexity, individuals still manage to make sense of it:

One of the most important tools that people use is a schema.... Informally a schema is a pre-existing conception about the way the world is organized. When information becomes available, a person tries to fit the new information into the pattern which he has used in the past to interpret information about the same situation. If the new information does not fit very well, something has to give. (Axelrod, 1973, p. 1248)

Schema theory views organized knowledge as a network of mental structures that represent an individual's understanding of the world. Some of the characteristics of schemata are (Axelrod, 1973):

1. Schemata are always organized meaningfully, can be added to, and develop to include more information.
2. Each schema is embedded in other schemata and contains multiple sub-schemas.
3. Schemata change continuously as information is received.
4. They can/may be reorganized if incoming data reveals an inconsistency in the previous arrangement.
5. Mental representations that evolve as a result of these processes can combine to form a whole that is 'greater than the sum of its parts.'

There are a number of benefits derived from mental schemata. Rather than treating each separate piece of new information equally, incoming information is evaluated for its relevance in light of old information. This allows the individual to change beliefs about pieces of old information without re-evaluating the entire schema Axelrod (1973). "Whether the changes are corrections or distortions depends upon the accuracy of the new interpretation and specification." (p. 1252) This allows individuals to have both a better, more complete understanding of the new information and its relationship to other concepts, and reduces memory requirements for interpretation. After information is stored, the individual adjusts future interpretations of relevance and uncertainty by updating the accessibility of the schema, credibility of sources, and confidence in the old information (Axelrod, 1973; Bem, 1983; Miller, 2007).

Typically, people try to fit new information into schema patterns that have previously worked for similar situations (Axelrod, 1973; Bem, 1983). New information that validates expectations is placed within the appropriate pre-existing schema. When new information is at odds with an existing schema, individuals have the option to: discard the new information; use another, more congruent schema to store the information; create a new schema for the new information; or break down and reorganized the existing schema (Axelrod, 1973). The likelihood that each option will be used depends greatly on the effort involved (Axelrod, 1973; Dalton et al., 1998). Since individuals try to use existing schema to interpret new information and given that existing schema expand and develop to contain new information from birth (Bem, 1983), it is more difficult to restructure existing schemata than to discard new information, especially if they are highly developed (Axelrod, 1973).

Organization of schema is strongly influenced by upbringing and culture (Bem, 1983). The most basic schemata develop early in life. (Social learning theories have proposed that children develop preference schemas at an early age - as early as five years). Humans acquire preferences, skills, personality attributes, behaviors, and self-concepts through information acquisition and interpretation (Bem, 1983; Gick & Holyoak, 1983). The values provided by experience determine which schemata dominate (i.e. are more important than others), and the dictates of those values determine how schemata become organized within, or relate to, others (Axelrod, 1973; Bem, 1983). There are an infinite number of possible schemata. However, as much as individual

differences create a plethora of unique schemata, many consistencies arise because culture and society heavily influence schematic development (Bem, 1983; Wanta, 1997).

Schema theory provides a description for information processing, but cannot describe how the information will be used for decision-making (Axelrod, 1973; Gick & Holyoak, 1983). It also cannot predict which schemata will develop preferred significance over others, also known as the accessibility of schema (Bem, 1983). It cannot say how schema will be used to draw conclusions about real life situations (Gick & Holyoak, 1983). While there is a biological function (efficiency) for organizing information into schema, there is no pre-existing code determining which schema become preferred or dominant over others. Hubbard et al. (1975) asserted that “social problems are what people think they are. There are no particular conditions of society that are inherently problematic or pathological.” (p. 22)

Despite its limitations, schema theory is beneficial to understanding how people interpret, store, and retrieve information. Since mass communication is the creation and distribution of information, it benefits communicators to understand how people interpret the information they are being given (the decoding process) (McCombs et al., 1997). It may be impossible to predict individual reaction to a given piece of information, as schema development is unique and varies greatly. However, a population’s general familiarity with particular topics, cultural inhibitors and societal influences provide overarching consistencies within and between individuals’ schemata that may allow patterns of macro-level mass behavior to emerge in spite of individual variations, and

therefore allow mass communication scholars to track and predict trends in those behaviors (Hubbard et al., 1975).

Mass media can play a role in the activation of mental schema through priming (McCombs et al., 1997; Miller, 2007). Along with schema development, priming provides an explanation for the underlying causal effects of the cognitive process involved in agenda-setting. Priming assumes that frequency, prominence, and stimulus will activate certain existing schemata, therefore making that information more easily accessible in the future (Dearing & Rogers, 1996). What is particularly interesting for this discussion is that priming connects issues between the media and public agenda. If an issue that has been on the media agenda recently, new issues (new information) that are more conceptually similar to previous issues (pre-existing schema) are more likely to be added to the media agenda. Consequently, the public is more “primed” to access certain schema over others, though there is debate on whether accessibility is due to ease of access (frequency), dominance (importance) or emotion (Miller, 2007).

Closely related to priming are the concepts of framing and second-level agenda setting. Frames are “windows” of objects, or a way of providing definition or a way to view an issue. In journalism they’re often referred to as story angles (Kim, Scheufele & Shanahan, 2002; McCombs et al., 1997) which highlight different aspects of the issues can be highlighted or emphasized to different degrees in the news (i.e. potential benefits of stem cell research vs. religious views of life). How the media frame an issue or object (which attributes are emphasized as the central theme or important aspects of the issue) has been shown to have an impact on how people think and talk about the issue (Bryant

& Zillman, 2002; Kim et al., 2002; McCombs, 2005). Frames can be either affective (provide tone) or cognitive (highlight or ignore certain information) (Shaw & McCombs, 1977). Psychologically, frames define relationships between elements of broader issues – that is, they connect pre-existing schematic ideas to new information and help “prime” new issues by relating the importance of new topics to old ones (or new information to existing schemas).

Second-level agenda-setting, or the agenda-setting of attributes, could essentially be described as the application of frames to objects, and research has shown that, just as agenda-setting impact on the public varies from issue to issue, certain attributes or frames are more effective than others (Golan & Wanta, 2001; McCombs et al., 1997). Mass communication scholars have debated the differences between framing and second-level agenda-setting (Kim & McCombs, 2007; Kim et al., 2002), but many use the two interchangeably (McCombs, 1997).

Framing and priming are related and can be viewed as forms of structural bias. Framing is a bias resulting from the selection process of the media (Dalton et al., 1998; Dearing & Rogers, 1996), whereas priming is a mental bias resulting from the information accessible to public (McCombs et al., 1997). Each influences the other. The media is unlikely to choose stories that won't be read by the public (catering to known or assumed “primed” issues), and the public relies on the media to provide structure, or “frames,” to a potentially overwhelming amount of information (Weigold, 2001). There is also evidence that people are more engaged in stories that are heavily framed, as they are more emotionally involved and entertaining (Nisbet & Mooney 2007). In this way,

sociological biases and cultural concepts are enhanced and reinforced (Carey, 1989; MacRaild & Taylor, 2004), and new information influences the relevance people place on certain schema – and therefore on the issues that are important to them and, they believe, to others (Axelrod, 1973; Einsiedel, Salomone, & Schneider, 1984; McCombs et al., 1997).

Issue Relevance

The more developed, complex, and sophisticated existing mental schema (greater personal knowledge) are for a given situation or issue, the less effect media will likely have in shaping those ideas and opinions (Axelrod, 1973; Hester & Gibson, 2007). (This is a simple matter of math. If there are two pieces of existing information, and one new piece is introduced, it will likely have a much greater effect than new information introduced into two hundred pieces of old information.) There are a multitude of sources for information, including personal experience, which is often quoted as the most hindering to media influence (Behr & Ivengar, 1985; LaSorsa & Wanta, 1990); personal networks (family, friends, acquaintances, etc); education; hearsay (the conversations of others without direct discussion); and the media. (Dearing & Rogers, 1996). The extent to which each of these exerts influence depends greatly upon the credibility, reliability, and trust that the individual evaluates the source to possess, as well as the abstract nature of the concept (Dearing & Rogers, 1996; Wanta & Hu, 1994). As personal experience and accumulated knowledge typically possess (according the individual), the highest levels of credibility and trust, “An individual’s close familiarity with an issue overrides

the influence of the mass media in determining what's important to that person" (Dearing & Rogers, 1996, p. 52).

The more obtrusive, or permeating, an issue is into the life of an individual, the more pre-existing ideas of that issue act as an inhibitor to new information (Hester & Gibson, 2007). Many mass communication scholars have commented on observed variation of agenda-setting correlation strength by issue (Eaton, 1989; Funkhouser, 1973; Erbring et al., 1980; Winter & Eyal, 1981), which makes sense given that exposure to issues varies greatly both by the amount and type of exposure, and issues that are obtrusive will garner different agenda-setting results than issues that are not (Wanta & Ghanem, 2007).

There are arguably two types of obtrusiveness: individual obtrusiveness, where a person has direct and intense interaction with a topic, and therefore the media has limited effect on that individual; and mass obtrusiveness, where small pieces of information on the same topic permeate a large population (Dalton et al., 1998; Hester, & Gibson, 2007). Both forms of obtrusiveness are relevant. For an issue for which many people have high personal familiarity – unemployment or taxes, for example – it is likely direct personal experience will make it hard for media to have strong agenda-setting influence over the population-at-large (at least for concrete concepts of the issue) (Behr & Ivengar, 1985). Some issues are by their nature difficult for an individual to experience personally (Dearing & Rogers, 1996), but these unobtrusive issues (political gossip, the economy, abortion) can also become resistance to media agenda-setting influence as previously expressed ideas from the media or other sources become adopted and opinions are

formed by individuals, preventing new ideas and information from taking hold. This is especially true for controversial subjects (Miller, 2007; Weigold, 2001).

Generally, the perceived importance an issue has to an individual or a population – due to the frequency of publication in the media, the extent of personal experience, or any of the other sources of information – the higher the level of *relevance* associated with the issue. Although it is not always the case, usually higher levels of personal experience, interpersonal communication and increased media exposure of a topic will increase issue relevance (McCombs et al., 1997).

A person's 'need for orientation' (based on a psychological theory of cognitive mapping) towards an object or issue must also be taken into account to understand what conditions favor transfer of media agenda to public opinion (McCombs et al., 1997). Bryant & Zillman (2002) define need for orientation as a combination of issue relevance and uncertainty (in sequence, not simultaneously) that causes an individual to turn to media for confirmation of non-mediated experiences (LaSorsa & Wanta, 1990). High personal relevance of an issue or object will cause orientation towards that issue; orientation is unlikely to occur if the issue holds little relevance (Bryant & Zillman, 2002; Dearing & Rogers, 1996). However, experience with an issue can cause a search for more information without a need for orientation; individuals who are sensitive to a particular issue may become adept at studying the media agenda surrounding that issue (Noelle-Neumann, 1985). High levels of *perceived* uncertainty also facilitate an information search (Bryant & Zillman, (2002), as the individual's need for clarification or elaboration of a schema demands more information.

Driven by a need for orientation, and equipped with different levels of comprehension and personal beliefs, audience members will approach media use with a variety of intents (Lowery & DeFleur, 1995). Motivations for media use vary from information gathering to diversion to entertainment; attentiveness to media varies by intent and type of media (closer attention is normally paid to newspapers than TV); and the extent to which viewers anticipate or plan for exposure (looking forward to a favorite magazine or TV show) also varies dramatically (Kiouisis, 2005; Roberts, Wanta & Dzwo, 2002). Viewer characteristics and their reasons for media exposure play a part in agenda-setting, as a person's ability to comprehend and remember the news is based on prior knowledge of the issue and medium, their motivations for watching, and habits and level of media use (Hill, 1985; Dearing & Rogers, 1996; Shaw & McCombs, 1977).

However, even when knowledge, motivation, attentiveness and anticipation run high, there are psychological limitations to the amount of information and number of issues that can fit into the public agenda for any given period of time (McCombs et al., 1997; Zhu, 1992). This is known as the zero-sum principle: human capacity for information, psychological commitment and emotional investment is limited, and therefore only a few issues can be 'in play' on the public agenda at a given point in time (Dearing & Rogers, 1996; Zhu, 1992). Two by-products of this phenomenon are: the "zero-sum game," where issues 'battle' for public attention – and therefore any issue's relevance is directly or indirectly related both to its previous importance and its relevance in light of other issues (Zhu, 1992); and the issue-attention cycle, or the necessary rise and fall of an issue on the public agenda (Dalton et al., 1998; Dearing & Rogers, 1992).

Issue Relevance in the Media: What is Newsworthy?

The media, too, have limitations and must choose what to place on their agenda. Presented with a considerable amount of information available about any given topic, journalists and editors rely on “craft norms” (or mental shortcuts) to generate news (Weigold, 2001). While standards of newsworthiness differ slightly between types of media, they all share two common features - audience relevance and deviations from cultural perceptions of ‘normal life’ (Carey, 1989; Weigold, 2001). Standards for newsworthy stories include prominence/importance, human interest, conflict/controversy, the unusual, timeliness, and proximity (Eaton, 1989; Hester & Gibson, 2007; Weigold, 2001). Other factors of the media environment, such as deadlines, unpredictability of occurrences (what makes news on a slow news day vs. a major headline day, for example), limits of time and space, inter-media agendas (relying on other news sources for information), editor preferences, and personal journalistic experience, also play significant roles in which stories are selected. (Weigold, 2001)

Standards for newsworthiness are not arbitrarily selected; these standards have been shown to cater to audience preferences (preferences influenced by culture) (Carey, 1989). “Because of limits of time and resources, reporters often work from ‘predefined angles’ or frames that provide themes around which to build stories” (Weigold, 2001, p.167). For example, in the sciences, stories about medicine, environment, and technology (topics that have personal and cultural relevance) are favored over stories

about physical and behavioral sciences (Nisbet & Mooney, 2007; Weigold 201). In addition to story selection, different media outlets may emphasize different aspects of the same story. While the New York Times may cover the gathering of scientific evidence for global warming, the Wall Street Journal may emphasize its economic or business repercussions, and primetime television news could debate the effectiveness of various clean-energy technologies (Cowan, 1997; Weigold, 2001). The practice of highlighting different attributes of the same issue, or framing, is a common practice in the media. Nisbet and Mooney (2007) argue that framing is not only inevitable but also necessary.

Research shows that people are rarely well enough informed or motivated to weigh competing ideas and arguments. Faced with a daily torrent of news, citizens use their value predispositions... as perceptual screens, selecting news outlets and Web sites whose outlooks match their own.... Frames organize central ideas, defining a controversy to resonate with core values and assumptions. Frames pare down complex issues by giving some aspects greater emphasis. They allow citizens to rapidly identify why an issue matters, who might be responsible, and what should be done. (Nisbet & Mooney, 2007, paragraph 2)

The stories that are deemed to have higher relevance receive more space and time in the media, more prominent location or time-slots, and are given more attention in terms of discussion, complexity, and type and number of frames (McCombs et al., 1997; Weigold, 2001). Despite differences in individual selections and uses of media outlets, general trends in population behavior and attitude patterns have emerged (Salwen, 1985). This is due in part to similarities of stories between media, caused by a combination of inter-media agenda-setting, conglomerate

ownership of media outlets, and cultural indicators of news relevance (Bryant & Zillman, 2002; Carey, 1989; Sweester, Golan & Wanta, 2008).

Given that there are industry and discipline ‘standards’ for newsworthiness held common by all news media, it’s not surprising that there is a considerable amount of overlap in both the type and topic of news stories across all media. This is compounded by AP wire sources, which act as the barometer of “important national news” for virtually every major news source (Hester & Gibson, 2007). Smaller news organizations then take their cue from larger organizations.

When the *Times* indicates that an issue is newsworthy, other U.S. news organizations take note. When producers and editors at television stations, radio stations, newspapers, and, to a lesser degree, newsmagazines sit down to decide which stories will receive the most time, the best placement, and the biggest headlines that day, they often have checked first to see what decisions the editors at the *Times* have made about the same issue. (Dearing and Rogers, 1996)

Daily “cross-checking” by media editors causes not only topic redundancy among media but also redundancy in the framing of those issues (Dearing & Rogers, 1996).

There has been speculation about the effectiveness of agenda-setting theory, both first- and second-level, since the adoption of the Internet and the proliferation of independent news sources. There is an argument that the nature of the internet – an interactive interface where anyone can post information – lends itself to decentralization,

weakening the effect any one media can have on a population (Bryant & Zillman, 2002; Roberts et al., 2002). History shows, however, that growth in communication technologies usually results in a brief decentralization of information and power, which then recentralizes as the technology is absorbed into cultural power structures (Carey, 1989). The notion of decentralization also ignores to a great extent the influence of inter-media agenda-setting, or the extent to which media influence each other, causing the same topics and frames appear across different media sources. (Heeter, Brown, Soffin, Stanley & Salwen, 1989; Ku, Kaid, & Pfau, 2003).

The Case For Predictable Mass Behavior

While there are benefits to understanding individual attitude or action, what is often important in the study of mass communication are mass behavior patterns that develop despite individual differences (Ball, 2004; Eaton, 1989; Erbring et al., 1980). For example, if one were attempting to escape a swarm of bees, what matters is not what the individual bees are doing but where the swarm is going; similarly, it would be extremely difficult to understand how a hand functions by examining the individual behavior of its atom and molecule. Humans are neither bees nor molecules, but the basic principle is an important one. Despite differences in individual orientation, preferences, and experience, there still seems to be causal correlation between media and public agenda when the connection is considered in mass populations.

“...To gain some understanding of how patterns of behavior emerge – and patterns undoubtedly emerge – from the statistical melée of many individuals doing their own idiosyncratic thing... The message is this: collective action and effects are inevitable. No matter how individualistic we like to think we are, our deeds are often the invisible details of a larger picture” (Ball, 2004, p. 31). “What is important is not the precise trajectory of every... particle, but their average behavior” (Ball, 2004, p. 41).

Predicting behavior requires understanding how individuality is balanced by common environment factors (Ball, 2004; Carey, 1989). It is usually the balance of both internal (personal preference, interests, etc) and external (media exposure, personal networks, cultural inhibitors, etc) forces that predicts behavior and attitude patterns (Ball, 2004). Rarely, if ever, do behavior and attitude depend solely on one defining factor: the portion of behavior/attitude that depends on external forces should be predictable. The basic principle of agenda-setting is based on this concept: the amount of agenda-setting influence exerted by the media on the public depends on the extent to which an external force (media) successfully competes with other external forces and is counterbalanced by internal forces (Ball, 2004; McCombs & Shaw, 1972; McCombs et al., 1997).

External forces can and do limit the power of individuality. Political scholars define political agenda-setting as a process of presentation (media agenda), filtration (public agenda) and adoption (political agenda and institutions) (Dalton et al., 1998; Erbing et al., 1980). In this definition, the effects of agenda-setting extend beyond the interaction of the media and public and becomes an inherent part of society and culture. Dalton et al. (1998) point out that despite considerable evidence for media-centered

agenda setting across methodological approaches, there is considerable disagreement about *where* that agenda hails from – although the most common agreement is that the media are presenting their own, independent agenda (p 465). They argue instead for the ‘transaction model’ of agenda-setting, where there are no independent agendas, but rather an ongoing process between the media and the public. Participants in the process are described as “social actors” that are constrained by other actors and by the flow of events (p 465).

To be fair, political campaigns are different from everyday agenda-setting. They are highly structured, highly visible, institutionalized, and involve a well-defined set of participants who are consistently monitoring public opinion (Erbring et al., 1980). However, they attribute the transaction model of agenda-setting to the “political equivalent of an economic marketplace” (Dalton et al., 1998, p 477) and point out that what they call the marketplace – or put more generally, the conditions under which events play out – limits the choices and actions of its participants.

The marketplace and the products of commerce are not determined solely by any one actor, but by the interaction among a set of actors.... This is not a causal relationship that can be solely attributed to the media; rather, it reflects the convergence of attention by the several actors. Candidates offer a selection of issues, some of which resonate with the public and some of which are dropped for lack of response. Citizens are potentially interested in a variety of issues, and their attention focuses on the subset discussed by the candidates and analyzed in the media. The media might also attempt to highlight issues that the candidates have overlooked or that the public would like them to address, but the media as a whole will not

continue to discuss issues that neither the public nor the candidates consider important. The press contributes to the agenda-setting process but does not determine the process. (Dalton et al., 1998, p 477)

Ball (2004) agrees, and argues that collective effects are unavoidable. “By concerning ourselves with nothing more than how we interact with our immediate neighbors, by ‘thinking locally,’ we can collectively acquire a coherent, global influence (p. 31).” Cultural effects are cumulative, ingrained and inevitable. (Ball, 2004) “The consequences of that – good or bad – are worth knowing (p 31).”

Typically, agenda-setting theory, as applied by mass communication scholars, currently predicts the same outcome regardless of the forces or conditions involved (McCombs, 2005; McCombs & Shaw, 1972). That is, it is reflexive. Scholars recognize that moderating variables both exist and influence agenda-setting; however, predicting consistent outcomes is in direct opposition to the existence of mediating variables, the circular nature of the communication process, the dynamics of information processing, and sociological adaptation. In other words, a theory that acknowledges variations in a dynamic process cannot contradict itself by predicting the same outcome under all conditions without suffering severe limitations in testing and applicability.

I propose that the outcome currently predicted by agenda-setting theory - high positive correlation between media and public – be amended: by understanding the moderating factors involved in the agenda-setting process, and by comparing similarities in conditions between studies that have similar correlation outcomes, it should be possible to: a) identify which moderating factors most strongly influence agenda-setting

effects (or most effectively predict strong effects); and b) predict a *range of outcomes* (correlation strengths) based on the weight and influence of moderating factors.

The intent of this meta-analysis is to see *if evidence for dynamic predictability* in agenda-setting *already exists* in current literature by examining two moderating variables, - issue relevance and media exposure - to determine both if the variables have significant influence on the agenda-setting process, and their probable weight of influence in that process.

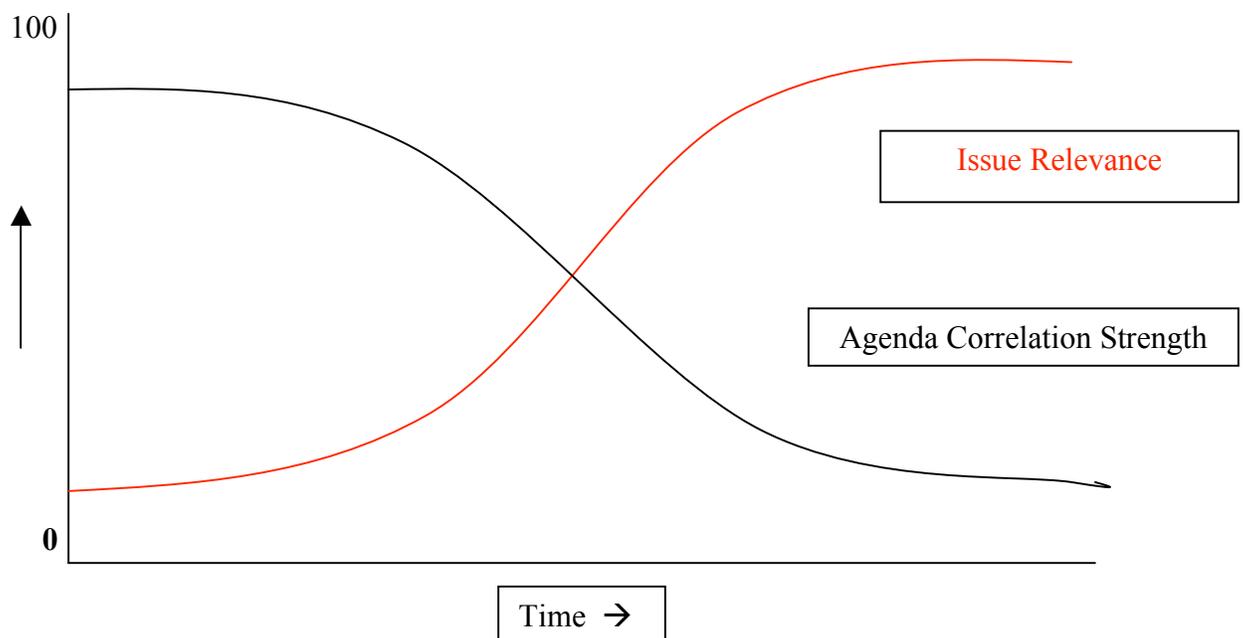
Hypotheses

By comparing agenda-setting correlation strength with variable influence, both the direction and magnitude of influence of those variables on agenda-setting can be inferred. I proposed to test this idea by analyzing two of the most commonly cited variables effecting agenda-setting magnitude.

Theoretically, an increase in issue relevance is influenced by individual factors such as personal knowledge, issue obtrusiveness, need for orientation, and other factors that increase the importance, accessibility and complexity of schema. Also, more relevant issues have increased emotional and psychological importance (stronger attitudes). Therefore, I propose that:

H₁: issue relevance is a suppressor variable (will have a negative effect) and has a consistent inverse relationship with the agenda-setting influence of the media (Figure 1).

Figure 1 – Issue Relevance / Agenda-Setting Relationship



The reasoning of this relationship is that previously accumulated information and attitudes create stronger, more complex schema, making it difficult for media to influence issue salience and opinion (McCombs, Shaw, & Weaver, 1997). Admittedly, this depends on the mechanism model for *how* the media plays a role in schema activation and attitudes (Miller, 2007): in this particular situation what is of more concern is *how much* information is processed, organized, and accessed at the macro-level. In other words, we're concerned with how information saturates a populace, creating complex and strong pre-existing schemata, resulting in less successful influence of external sources – such as media – on those issues at the *aggregate* level.

Based on previous research, information accumulation and attitude development result in a growth-pattern S-curve when charted, similar to S-curves used in theories of innovation and technology adoption (the “S” shape being a result of the plots of multiple bell-curves over time) (Ball, 2004; Cowan, 1997; Hughes, 2004; Lowery & DeFluer, 1995). The farther along the S-curve an idea or object progresses, the more personal and social momentum it gathers; once an idea has individual, institutional and cultural prominence, it becomes more difficult to significantly modify, and adjustments must be instigated by an idea with as much momentum or salience as the original (Carey, 1989; Cowan, 1997; Hughes, 2004; Lowery & DeFluer, 1995). If the affect media agenda (external force) has an inverse relationship with the development and schema and attitude (internal force), a chart depicting the relationship of media and public agenda as it relates to issue relevance over time should result in an inverted, or negative, S-curve, suggesting a diminishing return on strong effects of agenda-setting over time.

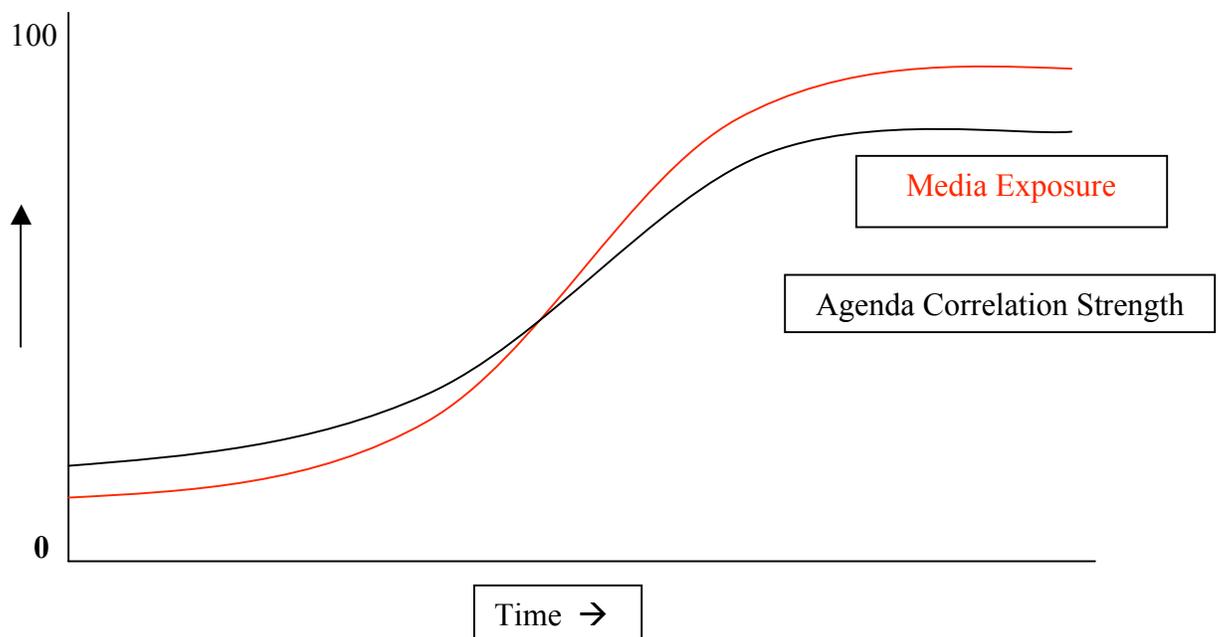
This relationship has been illustrated in the development of a number of ‘nationally important’ issues. In early stages of an issue – or for new attributes, or frames, of an issue – the media can have a significant effect. The modern civil rights movement, which has existed in some form since the mid-nineteenth century, became publicly and politically prominent after becoming a salient media issue (1880s-1920s for women’s rights and 1940s-1970s for segregation). Once information on certain issues becomes organized and institutionalized with a populace, however, it becomes more and more difficult to modify those ideas. According to Kuypers (2006), public perception of the War on Terror was initially greatly shaped by the media. Immediately following 9/11 the media echoed Bushes plan for war, but after two months began reframing the issue in a negative light. Public opinion polling showed, however, that the approval rating of the War on Terror (and the subsequent war on Iraq) tapered much more slowly, only reaching majority disapproval in late 2005. Other prominent media agendas that have been adopted by the public (and subsequently resisted further modification when the media agenda changed) in the past century include airflight, penicillin, technological development, space exploration, abortion, and pre-birth intelligence (Cowan, 1997; Hughes, 2004).

Despite the influence of issue relevance, decades of agenda-setting research have shown strong evidence for media agenda-setting influence. In previous research, this relationship has mostly been explored experimentally as a reflexive relationship with the public. Using a more dynamic outcome in mind, the agenda-setting influence of the media will not be consistent. However, regardless of how the influence of the media on

agenda-setting correlations may vary, exposure to the media agenda is still a prominent moderating variable for agenda-setting, and is indeed is the heart and concern of mass communication research. Theoretically, even with the existence of other sources of information (personal experience, etc.) that can influence issue relevance, a substantial increase in the media as the major of information – especially for unobtrusive or abstract issues – should result in a strengthening of agenda-setting correlation. (Another way of describing Figure 2, below, is that if a person starts only has a limited amount of time to allocate to different information sources, then as the percentage that is devoted to garnering information from the media increases, so will the agenda-setting influence of the media since it is an increasingly dominant source of information). Therefore I propose:

H₂: Media exposure is an enhancing variable (positive effect) and has a positive relationship with agenda-setting correlation strength (Figure 2).

Figure 2 - Media Exposure / Agenda-Setting Relationship



This hypothesis is consistent with observed trends of media exposure on salient issues. As has been discussed previously, this effect varies by issue due to differences in media use and type of media exposure (Atwater et al., 1985; Atwood, Ardyth & Sohn, 1978; Eisendel et al., 1984). Although a myriad of issues are potentially available for media coverage, issues must become salient to the media before making it to the media agenda. That agenda must then become adopted by the public, which has a limited “plate” for issues (zero-sum theory), in order to reflect media agenda (Erbring et al., 1980; Zhu, 1992). Thus, as there are numerous other information sources, it is likely that schemata for many issues are at least partially developed before media is introduced as a variable, and the media serves as an ‘enhancing variable’ for putting issues at the top of the public’s priority list.

Since the media are influenced by cultural and discipline inhibitors in their issue-selection process (Carey, 1989; Weigold, 2001; Dalton et al., 1998), they do exhibit to some extent a “mirror effect” of society (Watt & van den Berg, 1981). As the effect is part of a dynamic social process where other sources of information are numerous, media influence is unlikely to reach 100 percent (or correlation of 1). Therefore, studies showing correlation strengths approaching 1 should, in a meta-analysis, be much more infrequent than average correlation strength (.4-.6). Similarly, given the number of media options and information sources and their permeation of society, it is also unlikely that the media will exert no influence (approaching zero).

Need for Orientation

Need for orientation was consciously avoided as a test variable for three reasons. The variable's agenda-setting effect is really the cumulative effect of two consecutively occurring variables – relevance and uncertainty (Bryant & Zillman, 2002; Eisendel et al., 1984; Shaw & McCombs, 1977). The majority of mass communication research tests these variables together under the 'need for orientation' umbrella and does not sufficiently illuminate either's agenda-setting influence for this thesis's purpose. Also, relevance and uncertainty are highly dependent upon issue relevance (Eisendel et al., 1984) and influence media exposure, and so in a way serves as an intermediating variable for both issue relevance and media exposure, that relationship that would be better illustrated in a separate and more focused study. Although those relationships are potentially testable, there is not enough accumulated empirical testing in existing literature to make significant causal influences about the weight of those dependencies. Finally, need for orientation contains a possible element of emotion (Miller, 2007) (larger than for issue relevance or media exposure in the context of this paper, although emotion is undoubtedly involved in both), and although a discussion of emotion in agenda-setting is relevant, existing research has not yet sufficiently illuminated the its role for meta-analysis.

Chapter Two: Methodology and Results

In order to show the both the direction and magnitude of influence of issue relevance and media exposure on agenda-setting, a broad selection of data points is necessary to show that the effects are both common (widely applicable) and consistent (repeatable), and therefore a large sampling from a wide variety of audiences, conditions, group subsets, issues and cultural backgrounds must be assessed.

The most appropriate method for gathering and analyzing a large number of data sets while minimizing methodological differences and inconsistencies is through meta-analysis. Agenda-setting scholars have used a variety of methodologies in their investigations, including cross-correlation, cross-lagged correlation, time-series analysis and experiments (Wanta & Ghanem, 2007; Zhu, 1992). Each has its own merits, although the methodologies themselves can and do influence the strength of agenda-setting effects found by researchers. Wanta & Ghanem (2007) investigate four potentially moderating methodological factors: the number of issues examined (single issue vs. multiple issue); unit of analysis being investigated (individual vs. aggregate); the variable under investigation (content vs. exposure); and the time frame of analysis (Wanta & Ghanem, 2007, p. 37-38).

They organize these factors into four kinds of studies: mass persuasion, automaton, natural history, and cognitive portrait studies. Mass persuasion studies compare multiple issues with aggregate data, and constitute the majority of early agenda-setting studies. These studies show how the media influence the distribution of the top few issues affecting a population, but do not address how the media influence

individuals' agendas (Wanta & Ghanem, 2007, Zhu, 1992). For mass behavior, these studies suggest that media influence the size of groups in society who are most concerned about those same issues (Wanta & Ghanem, 2007), and studies of this type which included cross-lagged correlations found evidence of causal links of media on public agenda. Automaton studies, studies examining sets of issues with individual agendas, make up only a small portion of agenda-setting studies and find the lowest effects for agenda-setting.

Natural history and cognitive portrait studies have provided the strongest causal evidence of agenda-setting effects. Natural history studies follow single issues with the aggregate public over an extended period of time. Strong agenda-setting effects have been found for multiple issues, including civil rights, same-sex marriage, and Watergate (Wanta & Ghanem, 2007; Winter & Eyal, 1981), suggesting that agenda-setting effects are best examined over longer periods of time. Cognitive portrait studies follow single issues on an individual's agenda, and (surprisingly, given the results of automaton studies) show moderate to strong support for agenda-setting effects. Unlike automaton studies, cognitive portraits measure the extent to which the information process is involved with issue salience – and studies conducted over longer periods of time show stronger effects (Wanta & Ghanem, 2007).

Built into agenda-setting research is the zero-sum principle, which contends that only a limited number of issues can be on the public agenda at a given point in time. Zhu (1992) states, “The inevitable consequence of this contradiction [between the vast number of social issues and the limiting carrying capacity of the public agenda] is intense

competition among issues (p. 825).” Zhu argues that, while valid, the zero-sum assumption in agenda-setting has often resulted in rank-order correlations, which lack causal inference and are therefore methodologically weak. This belief is echoed by other researchers, who point out that time-series analysis has proven a more powerful indicator of agenda-setting effects than other types of studies (Sohn, 1978; Watt & van den Berg, 1981). Time-series studies provide a strong basis for causal inference, fully utilize parametric information, and, for one-issue studies, can examine unique features of an issue. However, the single-issue approach to some extent disregards the competitive nature of the zero-sum principle. (Zhu, 1992)

Meta-analysis has its own restrictions. It is, as previously discussed, one of many ways to examine agenda-setting effects. Meta-analysis is effective only for the quantitative results of empirical research studies (as opposed to theoretical papers or qualitative reports), and the aggregate information can suffer from a lack of conceptual comparability and the results of differing statistical measures (Lipsey & Wilson, 2001). When full data sets for a topic of issue are available, it’s generally more informative and appropriate to use one of the conventional measures mentioned earlier.

In this particular case, previous mass communication research has used effective testing methods for agenda-setting; however, I am proposing that a fundamental component of agenda-setting theory – the reflexive prediction that agenda-setting effects consistently manifest as a high correlation between the media and public agenda – is inappropriate for dynamic behavior. As other studies have based the effectiveness of

their findings against this theoretical tenant, it seems appropriate, if research has already been conducted, to see if support for more dynamically predictable outcomes exists.

In this case, we test the dependent variable, agenda-setting correlation strength, against two independent variables, issue relevance and media exposure, to determine if there are aggregate and predictably dynamic agenda-setting effects for those variables.

More On Time-Series Analysis

Eight time-series studies were included in this meta-analysis. Although general results are outlined above, it seemed prudent to include a more detailed discussion of longitudinal analyses to provide context for their comparative use in a meta-analysis. Wanta & Ghanem (2007) found that time-series analysis results did not deviate significantly (statistically) from other types of studies, as their average correlation ranged from .56 to .49, well within the 95% confidence interval (.47-.59). Aggregate findings of time-series analysis, then, seem to reflect results similar to other types of studies.

While the number is still few, longitudinal studies are becoming more prevalent as an agenda-setting research device. As discussed earlier, they hold a number of advantages over cross-correlation studies, the most noticeable of which is their ability to infer causation and to follow the volatile changes in issue and attribute salience (Behr & Iyengar, 1985). It is difficult, however, for a longitudinal study to follow more than two issues at once, given the necessity for extensive observation in addition to the potentially complicated interplay of issues for public attention. Cross-correlation has the advantage of detail, of being able to see the intricacies of what is happening in the moment. This

duplicity of methodological restraint is not only common but natural. In physics it is known as the Uncertainty Principle, or the inability to measure both the momentum and position of an object at the same moment in time; the more precisely one is measured, the less precisely the other can be (Ball, 2004). Imagine, then, how much more difficult it is to measure human behavior. Funkhouser stated the problem simply as, “The precise nature of ‘public opinion’ is still a mystery, a large part of the mystery being whether or not it even has a precise nature (Funkhouser, 1973, p 62).”

Below is listed the time-series analyses included in this study, with description of their course of time, number of issues and population descriptions.

Behr & Iyengar: Television News.

Behr & Iyengar (1985) followed public concern for three issues – energy, unemployment, and inflation - over the course of 6 years, comparing the results against real world economic indicators, which they used as the source of personal experience. The results showed a .73 correlation between news and public for energy, .37 for unemployment, and .53 for inflation. When tested against personal experience (real-world indicators), public concern correlated at .52 for energy, .74 for unemployment, and .43 for inflation. They also discovered that news was affected by real-world indicators for all three issues: for example, a shift of .25 in unemployment in either direction caused an increase in news stories (+4 stories), and a change of approximately .5 lead to a lead story.

Erbring, Goldenberg & Miller: Front Page News and Real World Cues.

Erbring, Goldenberg & Miller (1980) followed unemployment/recession, crime, and government trust over the course of 3 weeks (a significantly shorter timeline than other longitudinal studies). Like other researchers, they employed real-world indicators as a source of personal experience and compared both the media agenda and real-world indicators against public issue salience. Interestingly, and unlike other studies, they incorporated issue relevance (sensitivity) as a mediating variable against both media exposure and real-world indicators.

For all issues, news exposure caused an increase in public issue salience between low and medium exposure levels, but between medium and high exposure levels differences appeared between issue sensitivity groups: for groups where the issue was unobtrusive, high exposure levels saw an increase in public issue salience, but for groups where the issue was obtrusive, high exposure levels saw a *decrease* in public issue salience. However, “issue sensitivity” in this study was governed by conditions that represented a combination of issue obtrusiveness and need for orientation, and those conditions varied widely by issue (union and non-union families for unemployment; demographics for crime; and political interest for government trust).

Funkhouser: Issues of the Sixties.

Funkhouser's study of the main issues affecting the sixties found results at odds with Behr & Iyengar assessment of the effect of real-world indicators on news stories. News media coverage of "non-newsworthy" events "seemed to respond to something other than the actual stream of events (p. 73)." He did make a note about issue competition, saying the media seemed to take cues of newsworthiness from sources other than real world events, and that those persons or agencies were able to take away attention previously devoted to other, older issues which had lost their novelty. The most prominent news stories reached maximum agenda-setting correlations of .56 (Vietnam War), .6 (race relations), .29 (crime), .27 (campus unrest) and .16 (inflation).

Hester & Gibson: Same-Sex Marriage

Hester & Gibson (2007) followed same-sex marriage in the media over the course of a year in Chicago and Atlanta with the proposition that need for orientation would create a higher salience in Atlanta (where the issue was both local and national) than in Chicago (where the issues was mainly national), and that local news would exert more influence. They used Yahoo!'s online Buzz Index as a marker for issue relevance and compared the results to local and national media in both Chicago and Atlanta. They found the agenda-setting effects of local and national media to differ, with Atlanta seeing a mediating influence from local media, although their results suggest that local media agenda served as a mild buffer to national media agenda, rather than a replacement.

Salwen: Accumulated Coverage Effects.

Salwen (1988) also conducted a time-lag study to determine the appropriate time-lagged correlation period with accumulated coverage of environmental issues covering a period of 26 weeks. His sample was both larger and more varied than Stone & McCombs (1981) and Sohn (1978), and he used three major local newspapers as the news source. His research indicated that public adoption of media agenda began after 5 to 7 weeks of accumulated news coverage.

Sohn: Local Non-Political Effects.

While Sohn (1978) did not find strong evidence for agenda-setting effects of media on public agenda, she did find that interpersonal communication was a strong indicator of what people chose to read (issue relevance). Sohn conducted this research in a small Illinois town using the local daily newspaper as the sole news source.

Stone & McCombs: Time-Lag in Agenda-Setting.

In their 1981 study, Stone & McCombs investigated the time-lag period for agenda-setting effects. They surveyed sophomore males living in dormitories on the Syracuse campus about “the most important” national issues and compared them to media agenda from 5 months prior to 3 months after the survey. They found the maximum time frame for media agenda influence to be four months, extending from 6 to 2 months prior to survey... at least for sophomores.

Winter & Eyal: Civil Rights

Winter and Eyal (1981) studied the development of the civil rights issue from 1954-1976. They found two months, or 4-6 weeks, prior to survey to be the most effective agenda-setting influence period, with a cumulative effect of .84. They distinguished between the “recency effect” in the month prior to survey, where more recent media content is more influential, and the “cumulative effect” of media agenda for 2 months prior and earlier.

Consensus seems to indicate that agenda-setting effects take between 8 and 4 weeks to occur (McCombs, 2005); however, beyond that, there is too much variation both within and between longitudinal studies to draw conclusions. There are variations in both the type and size of populations studied without qualitative context of either the cultures or demographics selected – although all authors quoted individual characteristics of the public to be extremely important variables to agenda-setting effects. Also, although all researchers used real-world indicators as a reference point for the public’s experience with issues, those real-world indicators varied widely, even for the same issues, resulting in equally varied results with public agenda.

However, one of the strengths of meta-analysis is its broad statistical application; if results are positive across multiple populations, then that is an indication of strong agenda-setting effects. Erbring et al. (1980) provided what is possibly the clearest picture of *how* issue relevance plays a role as a moderating factor in the media-public relationship: their research shows a possibility that issue relevance becomes a strong

moderating factor at higher levels of media exposure, although why or how this occurs is not clear.

Parameters

The following were used as parameters to select appropriately comparable studies for meta-analysis.

Appropriate Variables. Many studies tested inappropriate variables for this meta-analysis, such as need for orientation (Tipton, Haney & Baseheart, 1975), or examined relationships irrelevant to this thesis, such as how issue relevance affects attitudes toward candidates. For this study, only papers that examined how issue relevance and levels of media exposure influenced the strength of the agenda-setting influence of the media were eligible for meta-analysis.

Comparable Sources. It was also important to have comparable sources of data for statistical applicability, so studies were also filtered by the sources of the independent (issue relevance and media exposure) and dependent (agenda-setting influence) variables.

Rather than try to define the variables, I used the most consistent definitions provided in previous research. Issue relevance is most commonly defined as an individual's self-reported personal interest with an issue or their belief that an issue is important to others (depending on the topic), and is compared against real-world indicators and media agenda for those same issues to determine if issue relevance better matched real world events or media agenda. Therefore only studies that used individual self-reports for issue relevance were used. For media exposure, again only studies that

used self-reports for exposure were used. In order to provide a larger selection of data, media exposure *levels* were used as opposed to the more diverse variables of media type and media use. Agenda-setting was defined in all studies used as the extent to which the public agenda is reflective of the media agenda instead of other information sources or real world events.

Comparable Statistics. The type of statistical analysis used was also set as a parameter for study selection. Given the large number of cross correlation studies, and given the importance of the zero-sum principle, it seemed prudent that studies using zero-sum cross correlations whose statistical significance were determined by t-tests were the most appropriate and widespread data set for comparison.

Aggregate Data. Only studies that used aggregate data were selected. While interesting, individual-level studies were not deemed useful for this meta-analysis since this study does not investigate individual preferences or differences. In addition, Wanta & Ghanem (2007) in their meta-analysis found that the mean agenda-setting correlation for individual-level studies was .52, compared to .54 for aggregate-level studies, showing no statistically significant difference between the two. (p 45)

Methodology

A key to meta-analysis is defining parameters for statistics that permits meaningful comparison. By encoding the magnitude and direction of relevant statistical relationships among selected studies, meta-analysis is capable of finding effects that are obscured in other approaches to summarized research (Lipsey & Wilson, 2001).

Initially, 148 studies were identified as possible cases for meta-analysis. Many studies were eliminated as appropriate candidates for the following reasons: some lacked empirical, quantitative data; others had an inappropriate or too-narrow focus; multi-method or inappropriate data analysis strategies were involved; or the studies were testing variables unrelated to my hypotheses.

This narrowed the number of potential studies to 72. Of these, some were eliminated because they examined a subset, rather than the aggregate effect, of my hypothesis variables; others were eliminated based on the statistical reports, as the method used for reporting results restricted comparability to other studies; and the last set were eliminated because they did not match the statistical parameters defined earlier.

This resulted in a final count of 22 useful studies (that contained either of or both independent variables). This is admittedly an extremely small number. However, Wanta & Ghanem (2007) conducted a meta-analysis of studies with much more general parameters than this analysis, ending with a comparable group of 45, so it is not surprising – although disappointing – that a meta-analysis with more specific constraints resulted in even fewer comparable studies. In these 22 studies, there were a total of 135 comparable data points.

For consistency, the same statistical test (t-test) was used in meta-analysis as was used in the selected studies to determine statistical significance and verify the hypothesis. Tests that did not reach statistical significance were considered an indication of support of null hypothesis. Although in t-tests there is an underlying assumption that there is significant overlap in statistical trends of the populations studied and unpaired t-tests

were used as the initial test of significance, statistically significant results were tested again using a Welch's unpaired t-test to account for differences in populations.

Results

Most of the studies examined here found statistically significant agenda-setting effects. This is in keeping with previous research, which has found that the majority of studies have found support for the agenda-setting hypothesis (Dearing & Rogers, 1996).

Table 1 shows the cross-correlation data for the effects of increasing issue relevance on agenda-setting effects.¹ The overall agenda-setting correlation strength for populations with low issue relevance ranged from .03 to .95 and had a mean of .49 and standard deviation (SD) of .24. Populations with high issue relevance also had a large range of agenda-setting effects, from .03 to .8, with a mean of .42 and SD of .22. This is not a statistically significant. When mid-level knowledge is accounted for (Table 2), issue relevance shows even less aggregate effects on agenda-setting. Low-levels of issue relevance in this smaller sample average at .61, mid-levels at .56 and high-levels at .53.

It should be noted that one study showing an increase in agenda-setting effects from low to high issue relevance combined with a high concern and need for orientation. Even when that was corrected for, the effects still proved to be statistically insignificant (at $p = .1125$). Thus, *Hypothesis 1 is not supported*, as this data shows issue relevance to have a mild, but not statistically significant, suppressing ability, with a maximum weighted influence of approximately .10.

¹ The number of respondents for the studies totaled 3,949* in Table 1 and 1,896* in Table 2. (*These numbers include one study using Gallop polls, for which the number of respondents was estimated at 1,000.)

Table 1
Agenda-Setting Effects by Issue Relevance (Low-High)

Low	High
0.75	0.03
0.73	0.37
0.67	0.51
0.53	0.29
0.33	0.49
0.47	0.71
0.56	0.43
0.3	0.28
0.43	0.57
0.7	0.72
0.7	0.57
0.47	0.37
0.51	0.45
0.19	0.25
0.95	0.8
0.4	0.46
0.03	0.12
0.13	0.12

* Issue relevance in all studies was assessed using individual self-reports. P value equals .3428 (p<.05).

Table 2
Agenda-Setting Effects by Issue Relevance (Low-Mid-High)

Low	Med	High
0.73	0.53	0.37
0.67	0.62	0.51
0.53	0.46	0.29
0.33	0.38	0.49
0.47	0.54	0.71
0.95	0.83	0.8

* Issue relevance in all studies was assessed using individual self-reports. P value for low to mid-level is .6360, for mid-high .7621, and for low-high at .4932 (p<.05).

Media exposure effects are explored in Tables 3 and 4². Table 3 illustrates differences in cross-correlation strengths for low and high media exposure on agenda-setting effects. The agenda-setting correlation strengths ranged from .14 to .86 for low levels of media exposure, with a mean of .52 and SD of .18. Agenda-setting correlation

² Sample size for Table 3 is 3,776*, and for Table 4, 3,119*. (*These numbers include one study using Gallop polls, for which the number of respondents was estimated at 1,000.)

strength for high levels of media exposure ranged from .31 to .98 and showed a mean of .62 with SD .19. This is statistically significant.³

Table 3
Agenda-Setting Effects by Media Exposure (Low-High)

Low	High
0.86	0.98
0.47	0.42
0.41	0.62
0.78	0.92
0.14	0.77
0.67	0.81
0.66	0.82
0.66	0.79
0.3	0.56
0.38	0.63
0.47	0.5
0.52	0.43
0.6	0.77
0.6	0.39
0.37	0.33
0.49	0.5
0.57	0.42
0.41	0.49
0.34	0.38
0.31	0.79
0.4	0.33
0.59	0.31
0.79	0.57
0.78	0.79
0.61	0.56
0.53	0.8
0.46	0.66
0.64	0.83
0.69	0.8
0.68	0.8
0.63	0.8
0.19	0.51
0.25	0.45

* Media exposure in all studies was assessed by individual self-reporting. P value is .0341 (p<.05).

Table 4 adds mid-level media exposure for comparison. Low-level media exposure has a range of .14-.86, a mean of .57 (SD .2); mid-level a range of .44-.88, mean of .71

³ At p = .0341. When tested against Welch’s t-test, the results were still statistically significant at p = .0342.

(SD .13); and high-level exposure ranges from .42-.98 with a mean of .79 (SD .15).

Removing the political study increased the low-high statistical significance from .0341 in Table 3 to .0195⁴, although both the low-mid and mid-high pairings failed to reach statistical significance.

Media exposure seems to have incremental effect ranging from approximately .01-.15, with an ultimate weight of approximately .25. This is not only statistically significant, but shows that media exposure is a greatly influential variable on public agenda, potentially accounting for almost a quarter of agenda-setting influence.

Hypothesis 2 is supported.

Table 5 tests an extension of media exposure to test the effects of different types of traditional media exposure for agenda-setting effects. This is a radically smaller sampling compared to Tables 3 and 4. Table 5 compares two media – newspaper and television – at high and low levels of media exposure (high), allowing both an examination of media exposure differences within a medium and across mediums. Given the extent of inter-media agenda-setting among the press, it's likely that other forms of mass media are reinforcing, rather than diverging, media influence on public agenda (Kaid & Pfau, 2003).

In Table 5, the newspaper low condition has a mean of .74 and SD of .1. The high condition averages .88 (SD .08) and the relation between the two values .0674, approaching statistical significance. Television has a similar trend, with a low and high

⁴ Welch's t-test results gave $p = .0206$.

condition mean of .33 (SD .13) and .5 (SD .09), respectively, and the p value relationship for low-high TV exposure is .0757, approaching significance.

Table 4
Agenda-Setting Effects by Media Exposure (Low-Mid-High)

Low	Med	High
0.86	0.88	0.98
0.47	0.62	0.42
0.41	0.62	0.62
0.78	0.82	0.92
0.14	0.44	0.77
0.53	0.69	0.8
0.46	0.62	0.66
0.64	0.73	0.83
0.69	0.79	0.8
0.68	0.8	0.8
0.63	0.83	0.8

* Media exposure in all studies was assessed by individual self-reporting. P value is .0634 for low-mid, .4075 for mid-high and .0195 for low-high ($p < .05$). These results show statistical significance only between the low-high groups, although low-mid transition approaches significance.

Table 5
Agenda-Setting Effects by Media Exposure Type and Exposure Levels

Newspaper		TV	
Low	High	Low	High
0.86	0.98	0.47	0.42
0.78	0.92	0.41	0.62
0.67	0.81	0.19	0.51
0.66	0.82	0.25	0.45

* Media exposure in all studies was assessed by individual self-reporting. P value of newspaper low-high is .0674, of TV low-high .0757, newspaper-TV low is .0023, and newspaper-TV high is .0007 ($p < .05$).

Between the mediums, the low-low conditions are significant at $p = .0023^5$ while the high-high conditions are more so, at $.0007^6$. Apparently, in addition to the level of media exposure, the type of medium matters even more. It would require a larger sampling in order to make the claim that the results of Table 5 are widely applicable.

⁵ Welch's t-test results: $p = .0039$.

⁶ Welch's t-test results: $p = .0014$.

Summary of Results

Results of this meta-analysis show no significant agenda-setting effects for issue relevance, as both low-mid-high and low-high conditions failed to reach statistical significance. *Hypothesis 1 is not supported.* Media exposure showed statistical significance in all low-high conditions and approached significance in low-mid: thus *Hypothesis 2 is supported.* In addition, the substantial aggregate shift in agenda-setting correlation strength suggests that media exposure potentially accounts for approximately a quarter of agenda-setting effects, and a small sampling of media exposure levels by medium suggests that type of media exposure may also play a strong role in agenda-setting.

Chapter Three: Discussion

“There is nothing in these models of pedestrian motion that dictates what people *ought* to do. Rather, the aim is to find out what people *will* do, using some simple assumptions about what motivates them and allowing for the constraints they encounter (Ball, 2004, p 146).” So much of agenda-setting research has, for better or worse, operated on the assumptions of how people ought to behave. This is the agenda-setting equivalent of the cart leading the horse – based on reasoned and logical reasoning, researchers propose what is effective based on theory and then research to test those assumptions; however, this ignores many underlying assumptions built into both theory and research design.

While an extensive amount of agenda-setting research has been conducted over the past four decades, many steps remain to be taken towards a full understanding of the theory. Much research is done testing those variables that logic and reason state *should* be indicators of agenda-setting effects, and not what *are*, often despite evidence to the contrary; it is necessary on occasion to check theory against empirical tests to determine if the variables that *do* influence a agenda-setting are also the ones that theory reasons should, and to see if variables that have not been considered are major contributors.

As has been discussed, there are a multitude of methodological limitations in agenda-setting research (Behr & Iyengar, 1985). Researchers vary widely in both their selection and application of variable criteria; there is rather haphazard selection of time periods and related temporal variables; and agenda-setting also suffers from conceptual limitations (Behr & Iyengar, 1985; Zhu, 1992). Essentially what has happened in

agenda-setting research is that there is general agreement on the substance of agenda-setting theory and almost no agreement on how to go about testing it (Zhu, 1992). The consequence of this is that researchers go looking for what they think they should find, rather than having a concrete step-by-step process of conducting research *using multiple methods*. Each method, each test variable, each idea has validity only if it can somehow be put back into the aggregate findings of agenda-setting research in order to elaborate on (or substantiate) the predictions of agenda-setting theory.

Limitations of the Study

Meta-analysis, like all types of methodology, has its weaknesses. Meta-analysis also inherently suffers from the limitations of the studies analyzed, including variations in population type and size, different time periods and temporal variations, social contexts of each study by time, geography and demographic, methodological quality, the more complex aspects of designs of procedure not disclosed in publicized studies, and of course theoretical influences (Lipsey & Wilson, 2001). To use the old adage, it is hard to tell whether we're comparing apples to apples or apples to oranges. However, this is also the strength of meta-analysis, as the randomness and large number of participants serve as a counterbalance against determinism in survey responses (Ball, 2004; Lipsey & Wilson, 2001).

This particular study suffers from a small sample size. Over 350 agenda-setting studies have been conducted after McCombs & Shaw's 1972 study, and yet there is so much variance in agenda-setting research that, in selecting criteria that would yield the most mathematically accurate and content-consistent results, that number was reduced to 22. That result, though, is undoubtedly preferable to a larger and much less reliable sample. However, without a larger sample size, the wider applicability of these findings is in

question, especially for the low-mid-high conditions and types of media comparison.

Also, this study relied on the content analysis of one researcher, although all effort was made to try to eliminate research bias through rigorous selection criteria.

Despite its limitations, meta-analysis has a distinctive place in research. It is a structured research technique used to summarize and analyze – and therefore provide context for – a body of research. By collecting and comparing data, it can illuminate effects or relationships that are obscured by other methodologies (Lipsey & Wilson, 2001).

Discussion of Results

The results support the basic premise of the study, that agenda-setting is a dynamic process and cumulative research can show both which variables affect public agenda and to what extent. By comparing the results of the dependent variable's (agenda-setting effects) relationship to two independent variables (issue relevance and media exposure), and by testing that relationship against a dynamic, interactive model of agenda-setting that allows and predicts a change in outcomes in correlation strength, this study provides evidence that not only is agenda-setting a dynamic relationship between the media and the public, but that relationship is potentially mathematically predictable. Additionally, doing so through meta-analysis shows the findings to be consistent across a number of populations, conditions and methodologies.

The first hypothesis supporting the idea of a dynamic process was an effort to show the effects of issue relevance on agenda-setting effects. This is 'theoretically sound,' as most researchers have agreed that issue relevance is or should be a major contributing variable to agenda-setting, and this is in agreement with the idea of schema-development and resistance to changing pre-existing ideas. Research has indicated that the more obtrusive an issue, the more relevance a person is likely to place on the issue, and therefore the less influential the media will be in setting public agenda over time on that particular issue. This

hypothesis was not supported in this study, as aggregate data failed to yield statistically significant findings. (However, issue relevance does seem to contribute about ten percent (.1) to agenda-setting effects, an important finding for understanding the weight of contribution of that moderating variable to the agenda-setting process.) There are a number of possible reasons for this result, which seems to contradict other studies.

First, although real-world (or economic) indicators are consistently used as a measure of the extent to which events or issues actually are or are not public issues (such as unemployment), there are a large variety of possible real-world indicators available for use and almost no consistency in the selection process. Even worse, indicators differ from issue to issue. Researchers have noted that personal relevance differs dramatically from issue to issue and for this reason have argued against testing issues in aggregate (Winter & Eyal, 1981; Zhu, 1992).

Another possibility is that we do not accurately understand *how* issue relevance plays into agenda-setting effects. The best example of this is from the Erbring et al., (1980) study, which suggested that issue relevance only suppressed agenda-setting effects in higher levels of media exposure. It is also possible that issue relevance is interwoven with need for orientation in such a way that makes it improbable to study one without understanding its dependence on the other. After all, the argument is that relevance and uncertainty feed media exposure and provide a filter for which media are used, how they're used and to what extent they are used – and relevance and uncertainty are based in great part (theoretically) on existing knowledge and the trust that that knowledge is sound.

It is also possible that the findings of this study are reflective of an undesirable truth: that as much as we would like to think we are reasonable, calculating creatures, we are not. Perhaps in the aggregate – as a mass – humans respond rather unthinkingly toward stimuli, which include real-world indicators as well as mass media, and it is easier to be told what is important rather than apply our own knowledge to the situation. Similarly, although not

quite as bleak an option, perhaps our minds are much more adapt at fitting inconsistent information into existing schema without cognitive dissonance than researchers would like to admit.

And finally, there is a possibility that there is as much a separation between individual issue salience and mass (national) salience *within individuals* as there is in studies. That is, when asked what is the most important issue affecting the nation (the most common question asked in agenda-setting research), respondents answer with what they are told is most important by the media regardless of their own preferences, because the question itself is inherently unobtrusive: *as an individual*, there is no possibility of directly experiencing the issues *as a mass population*. This could be misinterpreted as an argument for reflexive agenda-setting effects: it is not. The subtle but profound difference is in the source of understanding the source of individual versus national salience responses. Reflexive agenda-setting would suggest that individuals answer which issues are nationally important because the media tells them is important (a knee-jerk response); dynamic agenda-setting would allow the possibility that because individuals understand that, as an individual, they are not the nation, that when asked a question about what is important to a nation, they *knowingly* answer (a conscious decision) with a response that reflects the understanding of a gap between what is important to one may not be important to all, leaving the media as one of few sources able to provide information about what is important to those outside their experience.

In summary, there are a myriad of possibilities for the results of Hypothesis 1. The sample size was also small, which limits the applicability and validity of the findings.

Hypothesis 2 found statistical significance or approached statistical significance under all tested conditions. This sample size was larger than the sampling for hypothesis 1, which increases the results' validity and application. In addition, there was evidence that media type also weighs heavily upon agenda-setting, although that sample size was the smallest of

all conditions. This may be reflective of the different uses people have for different media (TV for recreation, newspapers for information), the attention they pay to different media sources, the trust they place on different media, the nature of the media (shorter time to cover detail on TV than in newspapers), or some combination thereof.

The hypothesis and results are consistent with agenda-setting research, and indeed with the very premise of agenda-setting theory, which at its most fundamental level posits that the media can and do affect public issue salience. It also provides evidence for the dynamic nature of agenda-setting and elaborates on the influence of moderating variables; even more tantalizing was the finding that media exposure increases agenda-setting effects .1-.15 between low-mid and mid-high conditions, and, cumulatively, exposure alone can potentially account for as much as a quarter (.25) of agenda-setting influence on public agenda. This sheds some light on the extent of media agenda-setting influence.

In summary, there was partial support for the premise of the study, with results showing minimal support for agenda-setting effects of issue and strong effects for media exposure.

Summary and Mathematical Model

This study is not meant to serve as a stand-alone summary of agenda-setting research, but rather as evidence to illuminate the dynamic nature of the process, and also hopefully to serve as a stepping-stone towards a more consistent and dynamic approach to agenda-setting research.

Many things make successful meta-analysis of agenda-setting difficult, including methodological differences, conceptual limitations, and inconsistency in testing. Agenda-setting suffers from a lack of a common reference point, a conceptual or mathematical model that successfully and uniquely represents the dynamic processes inherent the theory. This isn't for lack of trying. A number of models and equations have been used over the

years, with varying degrees of success (Axelrod, 1973; Erbring, Goldenberg & Miller, 1980; Southwell, Hornik, Fan, Yanovitzky & Lazili, 2000),. Again the main consistency here is inconsistency: there are innumerable ways to set up conceptual models of how variables interact in the agenda-setting process and a wealth of pre-existing mathematical models to choose from. Erbring, Goldenberg & Miller (1980) proposed a model of audience effects based on the assumption that audience's pre-existing issue sensitivities produce changes in issue concerns, an estimation model which looks like:

$$p[y=1]=\frac{1}{1+\exp(-(a_0+a_1*d_1+a_2*d_2+b*X+c*Z))}$$

In this equation, which is meant to measure audience responses to issue salience through issue sensitivity and other variables, y is the measure of salience, coded 0/1. D, x, and z are the variables of exposure, newspaper content, and local conditions, respectively; and a, b and c are the corresponding impact coefficients. Conceptually the equation is sound and uniquely suited to agenda-setting, but far too complicated.

In another instance, Southwell et al. (2000) borrowed an ideodynamic model to predict diminishing results in mammography use (as predicted by news coverage). The equation, borrowed from a paper published in the *Journal of Mathematical Sociology*, is itself a regression model borrowed in part from physics.

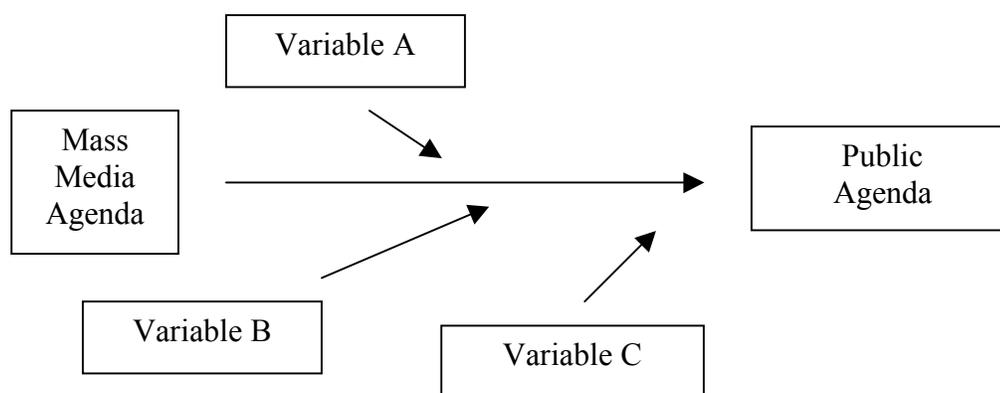
$$Y_t = Y_{t-1} + (k * (\text{pronews}_t + k * (1/2) \text{pronews}_{t-1} + \dots + (1/512) \text{pronews}_{t-9}) * (1 - Y_{t-1}) - (f * (\text{connews}_t + (1/2) \text{connews}_{t-1} + \dots + (1/512) \text{connews}_{t-9}) * Y_{t-1})$$

For those unfamiliar with atom decay, this is basically the half-life of elements (used for radioactive decay). This mathematical model's use for human behavior is intriguing, but its doubtful that the variables of human behavior and information processing are likely to be so consistent. In particular what these models fail to account for is white noise, the idiosyncratic or nuisance variance inherent in human thought and behavior, although Erbring, Goldenberg & Miller (1980) mention this phenomenon as an unavoidable element of the study of human interactions.

Both these and other equations operate on a number of assumptions about how and why certain variables operate in the agenda-setting and information process. The equation will inherently suffer, then, from whatever conceptual limitations are inherent in those assumptions. A better, although more plodding, approach is to set up a simple conceptual model of variable interaction with a mathematical representation *from which a number of empirical designs can be created to test those variables, and the findings will adjust the equation variables as needed*. This provides a conceptual base from which to draw conclusions and to test against, allows for modifications in the equation, and supplies a way for all methodological approaches to contribute to the agenda-setting process by providing a backdrop against which to decide which methodological approach is best suited to study the next variable in the equation.

As an example, let's take the most basic agenda-setting model, which says that the news media agenda is, to some extent, reflected in the public agenda and is contingent upon the influence of a number of individual, media, and contextual variables.

Figure 3a – A Simple Conceptual Model of Agenda-Setting



This model makes minimal assumptions about the variables of the agenda-setting process: they exist and they are active. It does not assume what they are or why or how they interact

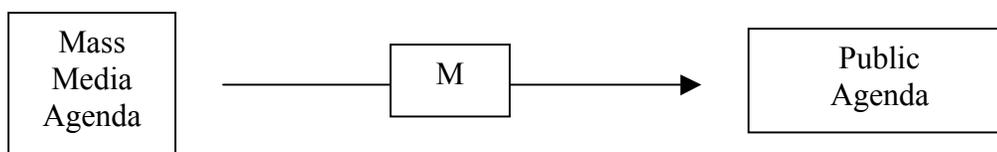
with the media, the public, the process or each other. It's mathematical shadow, or the equation that represents the model, is:

$$M = (a*k_a)+(b*k_b)+(c*k_c)+R$$

M is the magnitude of accumulated influence of the variables, which results in the agenda-setting correlation strength *between* the mass media and public agenda (it is not the influence of the mass media on the public, which is reflexive, but is rather the numerical representation of the dynamic relationship between them, which is the accumulation of the influence of multiple moderating variables. This is visually represented illustrated in Figure 3b.

Figure 3b -

Magnitude of the Relationship Between The Media and Public Agenda



A, b & c are values ascribed to variables a, b, and c; k represents the coefficients that represent the weight of influence of the variable; and R is white noise. K is unique to each variable. This equation is strong for a number of reasons: it is the most simplistic, accurate representation of the model illustrated in Figure 3; it makes no assumptions about the interactions of variables or their weight of influence on the overall process; and it accounts for all variables and allows them to be tested on their own merit (that is, it makes no assumptions about what they are or how they interact with the process – only that they do).

This equation allows for each variable to be tested independently of the others ($\Delta M = a * k_a$) but can also accommodate interaction of variables ($\Delta M = ab * k_{ab}$). For example, let's say that changes in media exposure levels (a) can potentially account for .25 (k_a) of overall agenda-setting correlation influence and need for orientation (b) has a maximum

influence of .15 (k_b), but when the two are combined they have a combined weighted influence of .3 (k_{ab}). Each variable can be independently and empirically tested for its weighted value (its agenda-setting influence) and can be combined with other variables to represent a combined value that is greater or less than the sum of its parts. In this way, both single-issue and multiple-issue methodologies can contribute to the same conceptual model.

Alternatively, the equation also allows for testing within variables. Media exposure can be broken down into levels, types, and uses. This would be represented as $\Delta M = (a_1 * k_{a1}) + (a_2 * k_{a2}) + (a_3 * k_{a3})$, where a is the media, but is broken down into three media variables (a_1, a_2, a_3). Temporal modification is also possible in this model, as each variable can be tested against multiple points in time (similar to longitudinal studies): $\Delta M = [(a_1 - a_0) * k_a] + [(b_1 - b_0) * k_b]$. Here, a_1 is the variable value at a time before or after the originating time interval, a_0 . (Longitudinal studies come into play here.)

R is included to account for white noise, or statistical variance. This is, inevitably, a part of statistics; with large numbers, it is highly unlikely (approaching impossibility) that anything can and will affect a population with 100% effect 100% of the time, all at the same time. The mathematical model illustrated above is not 100% precise for this reason, and it would be necessary to test both the maximum and minimum weights (k) of each variable in order to establish a *range* of influence of that variable. Say, for example, that variable b can account for a maximum of .25 agenda-setting influence – but at its lowest only accounts for .15. Therefore a responsible scholar would test both the maximum and minimum influence to estimate the range of change that would result in agenda-setting correlation. However, even accounting for a range of possibilities, populations always carry a percentage of unaccountable white noise, or behavioral outliers that are not participating – for whatever reason – in the process in a way that is consistent with the rest of the population.

The purpose of this model is not to add to the ever-growing pool of mathematical and conceptual options in agenda-setting, but rather to serve as an example that, although it is

dynamic, agenda-setting theory is built on very simple core assumptions and any attempts to study it can also be simple and consistent. All methodologies and concepts have their limitations, but they also all serve a purpose and when used together – appropriately – to test different elements of a concept can add to consensus rather than create confusion.

Hopefully, the results of this meta-analysis have shown that, despite a multitude of differences in agenda-setting research, there is evidence that agenda-setting is or can be dynamically predictable.

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