An Expanded Perspective on Agenda-Setting Effects. Exploring the third level of agenda setting

Una extensión de la perspectiva de los efectos de la Agenda Setting . Explorando el tercer nivel de la Agenda setting

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ABSTRACT: Agenda-setting has evolved from a focus on media effects on the public's perception of the most important issues of the day to a theory elaborating a hierarchy of communication effects. Its core is three levels of agenda-setting. The initial two levels were introduced during the first decade of research. Level three is recent. Evidence from the initial studies on this expanded view of agenda setting supports the Network Agenda Setting Model. This theoretical model asserts that the news media can bundle sets of objects or attributes and make these bundles of elements salient in the public's mind simultaneously.

Key words: Agenda-setting, Attribute agenda-setting, Salience

RESUMEN: Los estudios sobre Agenda-Setting se extienden desde los efectos de los medios en la percepción de la opinión pública , sobre cuáles son los temas de mayor importancia en el día-a-día, hasta la elaboración más compleja de unos efectos jerárquicos de comunicación. Se distinguen tres niveles de Agenda-Setting. Los dos niveles iniciales germinaron durante la primera década de investigaciones. El tercer nivel es más reciente. Existe una evidencia académica que propone un Modelo de Red de Agenda-Setting. Este modelo teórico indica que los medios digitales pueden englobar una serie de *objetos* o *atributos* e influir de forma simultánea en la audiencia.

Palabras Clave: Estableciendo la agenda / Agenda-setting, agenda de atributos, relevancia

In the years since the seminal Chapel Hill study launched agenda-setting research, this perspective has evolved from a tightly focused study of media effects on the public's perception of the most important issues of the day to a broad theory of mass communication and public opinion that elaborates the

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hierarchy of communication effects in considerable detail (McCombs, 2004). The foundation for this hierarchy of effects that now includes the impact of the communication media on attitudes, opinions, and observable behavior is the three levels of agenda-setting effects that are the core of the theory. Level one was introduced in the seminal 1968 Chapel Hill study (McCombs & Shaw, 1972). Level two was investigated during the 1976 U.S. presidential election (Weaver et al., 1981). Level three, which is introduced in this paper, was first investigated in 2010. As a preface to the presentation of level three, both theoretically and empirically, we begin with an overview of levels one and two of agenda-setting, which the accumulated research literature documents in great detail.

Although the original focus of agenda setting research on the link between the media agenda of issues and the public agenda of issues continues to be a key aspect of the research, the specific focus on issues has been incorporated in a broader theoretical concept, an agenda of objects. The term object here is used in the same sense as the term attitude object is used in social psychology to refer to the thing that a person holds an opinion about. The objects on the media and public agendas can be issues. They also can be candidates for political office or other public figures, or institutions, or any set of objects in which a researcher is interested. The influence of the media agenda of objects – issues, candidates, or whatever – on the public agenda is the first level of agenda-setting effects.

To measure this influence of the media agenda on the public agenda requires precise measures of each agenda. To obtain a measure of the public agenda, McCombs and Shaw conducted a survey, asking randomly selected voters "What [issue] are you most concerned about these days?" Their survey identified five key issues that were important to voters. The issue receiving the most mentions, foreign policy, was ranked one on the public agenda. The issue receiving the next most mentions, law and order, was ranked two on the public agenda. And so on. Most studies continue to follow this model, frequently using a question initiated by the Gallup Poll in the 1930s: "What is the most important problem facing this country today?" (Smith,1980). National data based on this question is widely available from many countries, frequently over long periods of time.

To obtain a measure of the media agenda most studies also follow the example of the Chapel Hill study and conduct a content analysis of the news coverage for an issue or set of issues – or other objects – over some period of weeks, months, or years. From the results of the content analysis, it is possible to rank-order the issues – or whatever set of objects is being investigated – in terms of their

frequency of appearance in the news. In the Chapel Hill study the content analysis of the nine major news sources used by voters – daily newspapers, national television news, and news magazines – measured the frequency of the five major issues in the news. The issue receiving the most coverage, foreign policy, was ranked one on the media agenda. The issue receiving the next most coverage, law and order, was ranked two on the media agenda. Etc. On the basis of these measures of the media's object agenda and the public's object agenda – in Chapel Hill the objects were issues – the correlation between the two agendas can be calculated to determine the strength of the agenda-setting effect. In an extensive meta-analysis of agenda-setting studies, Wanta and Ghanem (2006) found that the mean correlation between the media agenda and the public agenda was +0.53. In other words, the media are quite successful in transferring the salience of objects on the media agenda to the public agenda.

The theoretical advantage of using the abstract term object to describe these basic agenda-setting effects is that it is obvious that these objects have attributes, certain characteristics or traits that define them. When the media and the public talk about various objects, they almost always cite certain attributes of these objects. These attributes can be micro-characteristics, such as a person's age, or more macro-characteristics, such as a person's political ideology. Public issues also have attributes. For example, the attributes or aspects of the Iraq War found in news coverage and in people's conversations include military operations, international public opinion, and domestic political support or opposition. Just as an agenda of objects can be defined by the frequency of appearance of these objects in the content analysis data for the media agenda and by the frequency of appearance of these objects in the survey data for the public agenda, there also is an agenda of attributes for each object based on their frequency of appearance. Some attributes of an object are frequently mentioned, others from time to time, and some just in passing. The correspondence between the media agenda of attributes for an object and the public' attribute agenda for that object is the second level of agenda-setting effects.

Parallel to the measurement of the object agenda, the media's attribute agenda for each object can be ascertained by content analysis and the public's attribute agenda for each object through surveys. Again, the attributes on each agenda can be rank-ordered on the basis of their frequency of appearance. And these rank-orders can be used to calculate the correlation between the media agenda and public agenda. The correlation between the media attribute agenda and the public attribute agenda describes the strength

of the agenda-setting effect. This transfer of attribute salience from the media agenda to the public agenda for the attributes of public issues, political figures, and other objects has been documented in a variety of settings worldwide (McCombs, 2004).

Exploring the Third Level of Agenda Setting

The intellectual father of agenda-setting, Walter Lippmann, began his classic book, *Public Opinion*, with a chapter titled "The World Outside and the Pictures in Our Heads." In terms of his phrase "the pictures in our heads," the first level of agenda-setting effects answers the question: What are the pictures about? The second level of agenda-setting answers the question: What are the dominant characteristics of these pictures? In the decades since the Chapel Hill study, hundreds of studies have explored these two levels of agenda-setting effects across a wide variety of object and attribute agendas worldwide. And in the past three years, new research has begun to explore a third level of agenda-setting effects. At the third level, we come closer to literally answering the question: "What are the pictures in our heads?" The central purpose of this paper is to introduce this new line of research, this expanded perspective on the agenda-setting role of the news media, both theoretically and in terms of the initial empirical studies.

Exploration of a third level of agenda-setting effects was inspired by revisiting two long-standing assumptions underlying the traditional approach of agenda setting theory and research. First, the traditional approach of agenda setting assumes that a human's mental representation operates primarily in a logical and linear model. For example, the traditional approach assumes that when a person considers a political candidate, he or she articulates a hierarchy of attributes ranked by their importance to describe the candidate. However, moving to a third level of agenda setting, the theory borrows concepts from the associative network model of memory such as the associate network model (Anderson, 1983; Anderson & Bower, 1973) and the cognitive network model (Santanen, Briggs, & de Vreede, 2000), and asserts that individuals' cognitive representation of objects and attributes is presented as a network-like structure where any particular node will be connected to numerous other nodes (Kaplan, 1973). Using the same example noted earlier, this new theoretical approach asserts that to describe a political candidate a person generates a network-shaped picture composed of various attributes which are connected to each other in his/her mind.

In regard to the second assumption, the existing approach implies that the transfer of salience of different agendas occurs discretely. Recall the description of the measurement procedures above in which discrete

elements, objects or attributes, are extracted from news stories and survey respondents' answers in order to compile a rank-ordered list. Our new approach, which we have named the Network Agenda Setting Model, suggests that the news media can actually bundle different objects and attributes and make these bundles of elements salient in the public's mind simultaneously. Drawing from Lang's (2000) theoretical framework, the NAS model hypothesizes that the more likely the news media mention two elements in tandem, the greater chance that the audience will perceive these two elements as interconnected. For example, if the news media always report the Second Iraq War and September-11 attacks together in the same news stories, audiences tend to associate these two events in their minds.

Information-processing

In the field of media psychology, Lang's (2000) Limited Capacity Model provides a valuable framework to examine the ways in which news media interact with a human's cognitive networks. In this model, three sub-processes are described how people process mediated messages: (1) encoding, (2) storage, and (3) retrieval.

In the first step, people receive the message from the news media and into their brains. These messages form a temporary network in the audience's short-term memory, or working memory. The second step – storage – is the process where newly encoded information becomes linked to individuals' associative memory network. As mentioned earlier, each person has an existing associative memory network, or long-term memory. Here, new information is stored based on its relationship with the audience's underlying schemas, or previously coded information (Cortese, 2007). It is important to note that this storage process can be either automatic or controlled. According to Lang (2000), individuals might unconsciously link two random messages; on the other hand, they might also actively elaborate the information, thus purposefully connecting two messages which they think are meaningfully related (Eveland, 2001).

Interestingly, the "applicability effect" proposed in agenda setting and framing research can be used to explain how news media impact this "storage" process. A piece of new information or a construct is regarded as "applicable" if it corresponds with the perceiver's store of knowledge (Higgins, 1996; Price & Tewksbury, 1997). An applicability effect then suggests that, among various external stimuli, news media serve to construct the connections between new and old information in order to facilitate the storage of the new information in an individual's associative memory network. As an essential information-processing step, this connecting

mechanism in the storage process – or applicability effect – should be central to any media effect whether it is framing, priming or agenda setting. Price and Tewksbury (1997), the scholars who distinguished the accessibility from the applicability model, also made it clear that "applicability effects should be properly seen as primary or first-order effects of stimuli" (p. 197) meaning that it actually applies to all media effect models.

Once the connection of any two constructs is stored, whether the connection is held firmly in the audience's long-term memory depends on whether the two constructs can be frequently activated in tandem by either internal or external factors such as the media coverage. Therefore, the more recurrently two constructs are activated jointly, the greater chance these two constructs *as well as* their interrelationships can be retrieved later.

Moving to the last step of this information-processing model, individuals retrieve information by searching their associative memory network for specific information and reactivating it in the working memory (Lang, 2000). Thus, another temporary associative network (working memory) is formed. As Lang argued, the most readily retrievable information usually has the most associative links to other pieces of information in the memory network. Take the example of political communication again. When an individual retrieves an "experience" attribute to describe a certain political candidate, "experience" might be the attribute that has the most connections to other attributes. That is to say, "experience" becomes easily retrieved in this case not necessarily because of its importance in the attribute hierarchy in that individual's mind, but probably also because of its centrality in his/her associative memory network. Therefore, the Network Agenda Setting Model hypothesizes that news media have the capability to construct the connections among agendas, thereby constructing the centrality of certain agenda elements in the public's mind. In other words, salience or retrieveability can be defined as the centrality of an object or attribute on the public agenda.

To sum up, the Network Agenda Setting model suggests that the news media, among other environmental factors, serve to connect new information to old information in the audience's existing associative network memory and are able to strengthen the connections by frequently activating pairs of constructs in tandem. In this way, the news media are able to construct and reconstruct the audience's associative memory network by creating new nodes to the network or altering the strength of the existing connections among different constructs. In line with the theorizations above, the central

hypothesis for the Network Agenda Setting Model is that the salience of the interrelationships among constructs – or the associative network regarding a certain topic – can be transferred from the media agenda to the public agenda.

Empirical Tests of the NAS Model

To date, three empirical studies have been conducted to test the NAS model. The initial two studies were relatively small-scale studies conducted to test the feasibility of the Network Agenda Setting Model. The third study is based on extensive sets of national data from a three-year period in the United States.

In their initial empirical investigation of the Network Agenda Setting Model, Guo and McCombs (2011a) reanalyzed the data originally collected for Kim and McCombs' (2007) comprehensive analysis of attribute agenda setting effect. The research strategy in this initial test of the model was to reanalyze a dataset which we knew documented strong traditional second-level attribute agenda-setting effects. The results from the initial traditional analysis by Kim and McCombs provide a benchmark for evaluating the effectiveness of networked agenda setting. These data detail the media and public attribute agendas of both Republican and Democrat candidates in the 2002 elections for two different public offices, Texas governor and U.S. Senator from Texas. Specifically, these data examined attributes concerning candidate qualifications and character, which were the more prominent attributes highlighted by the Austin, Texas, newspaper and voters (Kim & McCombs, 2007). Ten attributes were identified to define personal qualifications and character: (1) Leadership; (2) Experience; (3) Competence; (4) Credibility; (5) Morality; (6) Caring about people; (7) Communication Skills; (8) Pride in family/backgrounds, roots, and race/ethnicity; (9) Non-politician; (10) Other comments about the personal qualifications and character of the four candidates.

The *Austin American-Statesman* was used for the content analysis because it is the only local daily newspaper serving Austin, which was the setting for the survey used to determine the public's attribute agenda. To ascertain the public's attribute agenda telephone interviews were conducted with 417 randomly selected adults between September 26 and October 11, 2002. To measure the public's attribute agenda, respondents were asked: "Suppose that one of your friends has been away a long time and knows nothing about the political candidates. What would you tell your friend about (name of a candidate)? This question was repeated for each of the four candidates. Corresponding to the content analyses of the *Austin American-Statesman*, we analyzed the ten attributes concerning "personal

qualification and character" in the responses to these questions.

The goal of the network analysis used to test the NAS model is to map the relationship networks of these candidate attributes both in the news media and in people's minds. An important point to note here is that we did not distinguish among the four different candidates because we wish to examine the narratives regarding the attributes of political candidates in general. However, it is also true that the results for each of the four candidates are highly correlated. For the *Austin American-Statesman*, we measured the relationships between each pair of attributes according to the frequency of their co-occurrence in the same news article.

A matrix of composed of 10 rows × 10 columns was created for the network analysis (Wasserman & Faust, 1994). Each row or column represents a candidate attribute. The entry in each cell is the frequency associated with the relationship between two attributes. We measured the relationship between two attributes by calculating their co-occurrence in the same article or in the same respondent's narrative. The more frequently the two attributes co-occurred across news articles or across respondents' descriptions of the candidates, the stronger their relationship. Thus, the unit of analysis in this network analysis is a dyad: two attributes and their relational ties. For example, if the two attributes "leadership" and "experience" appear together in 5 articles, the entry is 5 in the cell corresponding to the two attributes in the matrix.

Table 1 based on the content analysis data and Table 2 based on the survey data present the matrices for the relationship network of political candidate attributes.

Table 1. Matrix of Candidate Attributes Based on the Content Analysis

	A	B	C	D	E	F	G	H	I	J
A		4	2	3	3	0	1	2	0	3
B	4		9	11	7	5	7	2	4	17
C	2	9		7	6	3	4	1	2	8
D	3	11	7		6	4	3	1	1	12
E	3	7	6	6		1	1	1	1	8
F	0	5	3	4	1		3	0	2	6
G	1	7	4	3	1	3		1	2	5
H	2	2	1	1	1	0	1		0	1
I	0	4	2	1	1	2	2	0		2
J	3	17	8	12	8	6	5	1	2	

Note: A= Leadership; B= Experience; C= Competence; D= Credibility; E= Morality; F= Caring about people; G= Communication Skills; H= Pride in family/backgrounds, roots, and race/ethnicity; I= Non-politician; J= "Other" comments about the candidates' personal qualification and character.

Table 2. Matrix of Candidate Attributes Based on the Voter Survey

	A	B	C	D	E	F	G	H	I	J
A		6	8	2	2	2	0	1	2	10
B	6		50	26	24	6	5	2	11	64
C	8	50		19	19	5	11	3	7	43
D	2	26	19		12	5	4	2	7	22
E	2	24	19	12		6	1	1	7	19
F	2	6	5	5	6		0	1	2	11
G	0	5	11	4	1	0		0	0	2
H	1	2	3	2	1	1	0		0	3
I	2	11	7	7	7	2	0	0		13
J	10	64	43	22	19	11	2	3	13	

Note: A= Leadership; B= Experience; C= Competence; D= Credibility; E= Morality; F= Caring about people; G= Communication Skills; H= Pride in family/backgrounds, roots, and race/ethnicity; I= Non-politician; J= "Other" comments about the candidates' personal qualification and character.)

Results of the network analysis demonstrated that the media and public agenda networks are significantly correlated, thus, supporting the NAS model. Notably, the results for the network agenda-setting effects of the new study are consistent with what was found in the original study on attribute agenda-setting effects by Kim and McCombs' (2007). Specifically, the rank-order correlation coefficient (Spearman's *rho* = +0.65) between the media and public attribute agendas reported by Kim and McCombs corresponded closely with the QAP correlation (Pearson's r = +0 .67) between the media and public network agendas. In other words, network agenda setting as the third level of media effects is solidly grounded in terms of attribute agenda-setting effects.

Although the two analyses – one based on the use of discrete attributes and the new analysis based on networked attributes – are statistically similar, Figures 1 and 2, which present the networked results graphically, demonstrate the qualitative richness of the third level of agenda setting effects. Here we can see not only which attributes are most prominent in the media and among the public, but we also see the relationships among these attributes in great detail. In terms of Lippmann's phrase, "the pictures in our heads," at the third level of agenda setting we come very close to seeing the actual pictures.

Figure 1: Media Attribute Agenda Network

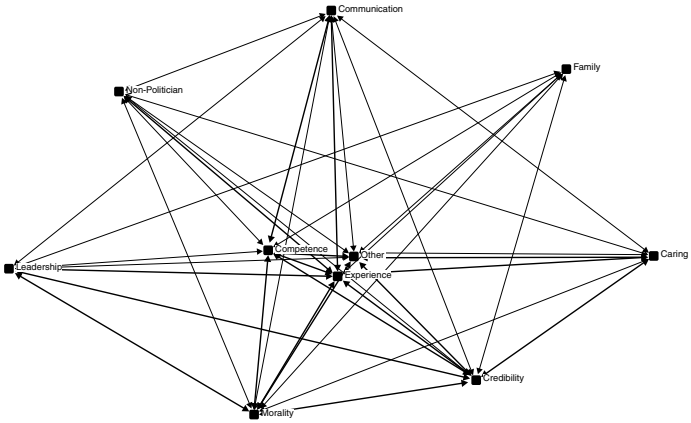
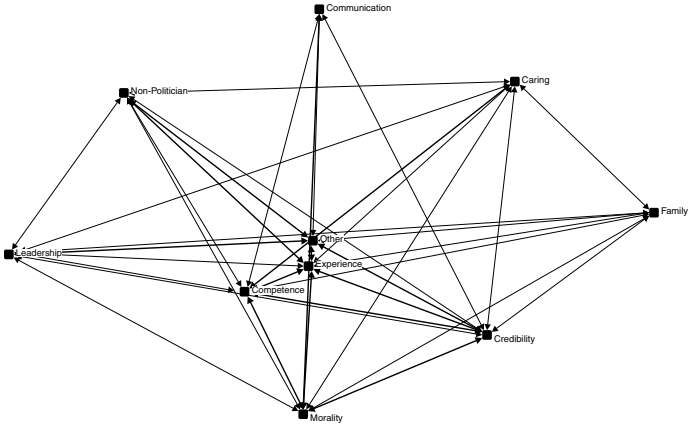


Figure 2. Public Attribute Agenda Network



Using a new set of data specifically collected to test the Network Agenda Setting Model, Guo & McCombs (2011b) compared the media and public agenda networks regarding the two major political party candidates' qualifications and character in the 2010 Texas gubernatorial election. The setting of this second study also was Austin, Texas.

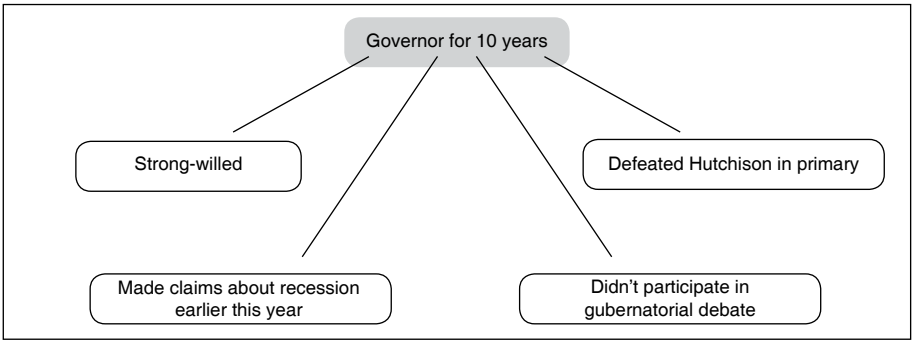
The content analysis procedures for this new study were identical to those used for the network analysis of the

Kim and McCombs data. However, a new data collection technique was developed for measuring the public's attribute agenda at the third level.

In order to retrieve the audience's cognitive maps about the political candidates, a traditional public survey is helpful but not sufficient. In the previous study, the public network agenda was measured by analyzing the respondents' replies to the survey question "What would you tell your friends about (name of a political candidates)?" The relationship between a pair of attributes was indirectly measured by their co-occurrence in a respondents' answer. However, this does not provide researchers with direct information about the interrelationships between attribute agendas in the respondents' minds. Therefore, the second study used a survey method particularly useful for testing the Network Agenda Setting Model by incorporating a mind-mapping approach.

Specifically, mind-mapping refers to a radiant thinking approach, associative thought processes that proceed from or connect to a central point. This approach has already been broadly used in the advertising industry for brainstorming (Buzan & Buzan, 2006). Focusing on a certain topic, individuals are usually asked to write down the things that first come up in their minds and then expand outward into branches and sub-branches as fast as they can (McCutchin, 2008). Borrowing this mind-mapping concept, the current study designed a survey sheet which requires respondents to fill in at most five assertions respectively describing each of the two political candidates' qualifications and character. They were also instructed to draw connections among each pair of attributes if they thought there were any connections. Figure 3 provides an example of a respondent's answer on the map-mapping survey sheet.

Figure 3. Mind-Mapping Survey Sheet Example



A "map" for **Rick Perry**

The public agenda data obtained through this mind-mapping technique was compared with the network data from the content analysis of the local newspaper, the *Austin American-Statesman*. The findings again supported the Network Agenda Setting Model, documenting a substantial and significant correlation between the media's network attribute agenda and the public's network attribute agenda (QAP Pearson's $r = +0.71, p < .001$).

It is important to note that both this new study using the mind-mapping technique and the initial study that reanalyzed the Kim and McCombs data focused on the relationships between media network of attributes and the public network of attributes. However, the Network Agenda Setting Model theoretically can be applied to networks that consist of attributes, objects, or combinations of objects and attributes. In addition, given the fact that both exploratory studies were conducted in a local setting (i.e., the state of Texas in the southwest United States), whether the model applies to the national level remained unstudied. Both of these two gaps are addressed in the third study, which tests the model in terms of object-based networks on a nationwide scale.

A Large-scale Test of the NAS Model

Our initial large-scale test of the NAS Model using national data from the United States focused on issue salience, which has been the center of attention in agenda setting research since the seminal Chapel Hill study. The research strategy for this initial large-scale test of the NAS Model followed the logic of the very first NAS study, comparing the results of a network analysis of the data with the results from a traditional analysis of discrete agenda elements. Beginning with this replication of first-level agenda setting effects established a preface for testing the network agenda-setting effects in terms of the third-level of agenda setting.

For this new study we conducted an extensive secondary data analysis on the content analysis data initially collected by the Pew Project for Excellence in Journalism (PEJ) and public survey data initially collected by Gallup and other major national polls. The relationships between the media agenda measured in the content analysis and the public agenda measured by the polls were examined for the three respective years: 2009, 2010, and 2011. Conducting research during these three non-presidential-election years enables us to understand the traditional and network agenda-setting effects in a more general pattern. Recall that the initial two studies of the Network Agenda Setting Model were election studies.

A total of six sub-datasets was used in this study: (1a) 2009 content analysis data; (1b) 2009 public opinion data; (2a) 2010 content analysis data; (2b)

2010 public opinion data; (3a) 2011 content analysis data; and (3b) 2011 public opinion data.

The Pew Project for Excellence in Journalism (PEJ) monitors weekly news media content, detailing the most covered topics in four dozen news outlets including newspapers, online news sites, network televisions, cable televisions, and radios (Pew Project For Excellence in Journalism, 2006). Many mass communication studies have used the PEJ news index for analyzing media coverage (e.g., Lee, 2009; Maier, 2010). For this study, weekly reports were retrieved for the years 2009, 2010, and 2011. The unit of analysis was a PEJ weekly report of the news coverage.

Specifically, each PEJ weekly report listed the top 10 topics ranked by their percentage of news coverage during the particular week. The topics in each of these weekly reports across the three years were coded for this study into 10 major issue categories: (1) Economy, (2) Health, (3) Wars, (4) Politics, (5) National Security, (6) Social disorder, (7) Education, (8) Environment, (9) Immigration, and (10) Others[2]. The decision to use these 10 issue categories was also based on the preliminary coding of the polls and previous agenda setting studies (Craft & Wanta, 2004; Kiousis, 2004).

Our analysis focused on the top five issue categories in each PEJ weekly report. If more than one topic listed in the weekly reports fell into the same issue category, the percentage of news coverage for each topic was summed to decide whether the issue category should be included in the analysis. For example, in one PEJ weekly report, "terrorism" received 15% of the news coverage, and "North Korea's nuclear test" received 10%. Both of these two topics were coded into the category "National Security." Adding up the percentage of news coverage for both topics made the category "National Security" one of the top five issue categories of that week.

The public survey data we used in this study was based primarily on the Gallup Poll results. Since 1939, Gallup began to survey the general public by asking the MIP questions,

2 "Economy" includes any economic or financial issues such as inflation, economic crisis.
"Health" includes such issues as healthcare debate or general discussions on health.
"Wars" consists of media coverage on the Iraq and Afghanistan wars.
"Politics" houses the coverage on the government and congress or any issues about how they perform.
"National Security" comprises of issues on terrorism, national security, and international conflicts.
"Social Disorder" includes issues related to crimes, moral degradation, or social problems.
"Education" only refers to education or its related issues.
"Environment" houses the coverage about general environmental issues or natural disasters.
"Immigration" only includes issues related immigration to the U.S.

"What do you think is the most important problems facing the country today?"(Larson, Yeager, Krosnick, & Tompson, 2010; Smith, 1980).

Numerous agenda-setting studies have examined the public's opinions by analyzing results from Gallup polls (Lopez-Escobar, Llamas, & McCombs, 1998; McCombs, 1997; Wanta & Hu, 1993). During the year of 2009, 2010 and 2011, the Gallup poll asked the general public the MIP questions once a month. However, three months, December 2009, March and April, 2010, were missing. For those months, we then used the results from other surveys, which asked exactly the same questions. Specifically, for December 2009 and March 2010, results of polls by Bloomberg (Polling Report, 2010) were included. For April 2010, the poll conducted by CBS News/New York Times (Polling Report, 2010) was incorporated. As such, the public agenda data consisted of answers from a total of 36 surveys for three years, with one survey for each month. The unit of analysis for the public survey data was a monthly survey.

To examine the network agenda setting effects, we first created a matrix composed of nine rows × nine columns for each of six subsets of data (Wasserman & Faust, 1994). (The 10th coding category, Other, was not used in the network analysis.) This is the same procedure described above for the reanalysis of the Kim and McCombs data. Each row or column represents an issue category. The entry in each cell is the frequency associated with the relationship between two issue categories. For the national study, we measured the relationship between two issue categories by calculating their co-occurrence in the same PEJ weekly report or in the same monthly survey. The more frequently the two issue categories co-occurred across the PEJ's weekly reports or across the polls, the stronger their relationship. Thus, the unit of analysis in this network analysis was a dyad: two issue categories and their relational ties.

We then calculated QAP correlations for the three pairs of matrices: (1a-b) 2009 content analysis and survey; (2a-b) 2010 content analysis and survey; (3a-b) 2011 content analysis and survey. The QAP correlation test computes the correlation between entries of two square matrices.

For our initial analysis of these data, testing for first-level of agenda setting effects to establish a benchmark for evaluating the network analysis of these data, the results showed that the rank-order of the media object agendas significantly correlated with the public object agendas in the year 2009 and 2010 (Spearman's $rho = +0.87, p < .01$, and $+0.68, p < .05$. However, in the year 2011, a significant relationship was not found between the media and the public object agenda (Spearman's $rho = +0.63, p = .07$).

Moving to the investigation of the network agenda-setting effects between the media and the public agendas, the results demonstrated significant relationships between the public network agendas and the media network agendas in all three years. Specifically, the QAP correlation was the highest in the year 2009 (Pearson's $r = +0.85, p < .01$). The year 2010 also saw a significant correlation between the two network agendas (Pearson's $r = +0.66, p < .05$) A relatively low, but still significant correlation between the media and public networks was found in 2011 (Pearson's $r = +0.54, p < .05$). All three sets of evidence indicated that the salience of network relationships among objects in the news media can be transferred to the public's mind. And, interestingly, the networked relationships were significant for all three years while the traditional correlations were significant for only two of the years.

Conclusion

These three studies completed to date establish the validity of the Network Agenda Setting Model for analyzing the elements that define the media agenda and the public agenda. The initial two studies found significant – and highly similar – network relationships between the media attribute agenda and the public attribute agenda. The third study found significant network relationships between the media object agenda and the public object agenda in the traditional domain of public issues.

The evidence from these three studies conducted to date on an expanded view of agenda setting effects supports this new approach, which we have named the Network Agenda Setting Model. This theoretical model asserts that the news media can bundle different sets of objects or attributes and make these bundles of elements salient in the public's mind simultaneously. Drawing from Lang's (2000) theoretical framework on information processing, the NAS model hypothesizes that the more likely the news media mention two elements in tandem, the greater chance that the audience will perceive these two elements as interconnected.

These initial empirical tests of the NAS Model are the opening gambit to a new and rich area of agenda setting research. In the words of the famous fictional detective Sherlock Holmes, "Come, Watson, come. The game is afoot!"

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