

CAN PUBLIC RELATIONS PROFESSIONALS HELP SPAN THE BOUNDARIES BETWEEN  
SCIENTISTS AND JOURNALISTS, AND DOES THIS FUNCTION HELP INCREASE ACCURACY OF  
NEWS ARTICLES ABOUT PUBLIC HEALTH?

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Master of Arts

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The undersigned appointed by the Dean of the Graduate School, have examined the thesis entitled,

CAN PUBLIC RELATIONS PROFESSIONALS HELP SPAN THE BOUNDARIES BETWEEN  
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NEWS ARTICLES ABOUT PUBLIC HEALTH?

presented by Emily Gresham Wherle,

a candidate for the degree of Master of Arts in Journalism,

and hereby, certify that, in their opinion, it is worthy of acceptance.

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## DEDICATION

This thesis represents more than a year of research, writing and analysis, and the culmination of three years of pursuit of a Master's degree. It would not have been possible without the support of the following people:

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**ABSTRACT**

A function of public relations professionals working for public health agencies is to perform a boundary-spanning role, facilitating communication between public health professionals and the news media. The purpose of this research was to examine the role of PR professionals in the communication process, and to determine whether the involvement of a PR professional leads to improved news article accuracy.

This study asked news sources to analyze 167 news articles about state and local health departments to determine, from the news source's perspective, the accuracy of public health news articles, as well as the role of public relations professionals working in state and local health departments. An online survey of sources quoted in articles in major metropolitan newspapers was conducted to examine these issues.

Public relations professionals were involved in 51.5% of the articles included in the survey, with arranging the logistics of the media interview being the most common media relations function. Of those working with a PR professional, 64% indicated that the PR professional had arranged the logistics of the interview. The number of errors in news articles decreased with the involvement of a PR professional, from a mean of 1.11 objective errors per story and 1.35 subjective errors per story to a mean of 0.83 objective errors per story and 1.23 subjective errors per story. Errors were found in 63.5% of news

articles, and common reasons for errors included deadline pressure (35.6%), complex information (56.1%) and confusing events (26%), which is consistent with previous studies on news accuracy. In this study, phone interviews were the most common method for gathering information for the article, with 77.1% indicating that a phone interview was used.



## INTRODUCTION

Before mid-October 2007, the average American probably had never heard of a pesky infection called MRSA, or Methicillin/oxacillin resistant staphylococcus aureus. Two weeks later, most Americans had heard of the drug-resistant staph infection; schools were closing to clean desks and facilities to prevent infection; and families across the country wondered if they would be infected next. The Project for Excellence in Journalism's weekly news interest survey for the week of October 14-19, 2007, found that 18 percent of respondents indicated that they followed coverage of MRSA most closely—more closely than they followed news about the war in Iraq or the 2008 presidential campaign (Pew Research Center, 2007). The reason for the attention of the public? Heavy media coverage of MRSA ensued after the *Journal of the American Medical Association* published an article, and a child in Virginia died from MRSA. News releases issued by JAMA and the Centers for Disease Control and Prevention, revealing the higher than expected numbers of MRSA infections, contributed to the media coverage (October 16, 2007; CDC Estimates).

Health news is a frequent topic for media coverage. According to an April 2006 poll conducted by the Pew Research Center for People and the Press, 71% of respondents indicated that they followed coverage of health news in the newspaper, on television and on the radio, either very closely or somewhat closely (Pew Research, 2006, April). In addition, because most people are not involved in health research or study health on a regular basis, the news media are their source of information. Dorothy Nelkin (1995) writes, "For most people the reality of science is what they read in the press. They

understand science less through direct experience or past education than through the filter of journalistic language and imagery” (p. 2). Readers also tend to trust the health information that they receive from the media. Campion (2004) indicates that this trust is due to the source of the health news, typically scientific research conducted by medical experts.

Readers of health news stories tend to act on the information they obtain, (Nelkin, 1995; Schuchman and Wilkes, 1997; Winsten, 1985). Jay Winsten (1985) found three effects of medical news coverage: It increased or decreased the willingness for individuals to seek medical care; it raised expectations (sometimes falsely); and it provoked alarm. Schuchman and Wilkes (1997) argued that the stakes in health reporting are higher than other areas of media coverage: “Low quality journalism about politics or business can tarnish a reputation, but in medicine, inaccurate reporting can generate false hopes and unwarranted fears” (p. 976). Nelkin (1995) claimed that good health and science reporting can empower consumers to make well-informed decisions, but poor reporting on health and science can mislead and ultimately disempower individuals.

Clearly, health news is important to readers—both professionals and consumers. Health news stories must still compete with other types of news, including politics and business, however. Vladimir deSemir (1996) asserted that because health news is placed in the larger umbrella of society/lifestyle news, it can be under covered because the health reporters must compete with journalists who specialize in law, consumer affairs, education, and other issues. Stryker (2002) determined that health news that is topical, unusual, controversial (in subject matter or results), or affects a large number of people, is more likely to receive media coverage.

News about public health issues makes up a considerable portion of health news stories. As the public deals with changing threats such as pandemic influenza, food-borne illness outbreaks, and other potential calamities, public health agencies will continue to be the subject of media stories. However, Kurt Wise (2001) found that the work of public health agencies, particularly prior to September 11, 2001, took place “in relative obscurity” (p.475). In later research, Wise (2002) noted that three factors make public health issues even more salient: The success of public health agencies has a direct effect on the health of the population; the public health system is facing new challenges related to bioterrorism; and effectiveness is vital for any organization that is responsible for spending taxpayer dollars. With this important role, Springston and Lariscy (2005) concluded that public health agencies needed to employ public relations practitioners in order to accomplish their mission. They recommended that public health agencies issue news releases and fact sheets, and sponsor media training workshops to improve media coverage.

Public health leaders recognize the importance of the media. In a survey of state and territorial health officials, Liang, Renard, Robinson, and Richards (1993) found that state health directors ranked “effectively communicating health information to the public through the media” as a necessary skill for the job (p.119).

As shown, health coverage is important to news consumers, with the majority indicating that they follow health news. Stories that are sensational, timely, or controversial will receive more coverage. Because of the technical nature of science and health communication, Corbett and Mori (1999) argued that media are dependent on the health community for information and cues about the importance of that information.

Because reporters rely on health professionals to decide which stories to translate for and release to the media, health professionals are the media's primary source for health news.

In order to be effective in preventing disease and promoting health, public health agencies must successfully communicate with the public via the news media. Stories such as the MRSA staph infection scare in October 2007 show that public health concerns can quickly become major news stories.

Public relations professionals often facilitate the communication between public health agencies and the media. The purpose of this research was to examine the role of PR professionals in the communication process, and to determine whether the involvement of a PR professional leads to improved news article accuracy.

Research into the ability of PR professionals to help translate complex information, by acting in a boundary-spanning role between journalists and expert sources, can be used to develop best practices for PR professionals.

## LITERATURE REVIEW

### **Relationships among scientists, journalists and public relations professionals**

The ability of scientists, journalists and public health professionals to communicate is crucial to the accurate transfer of public health information. But, to put it simply, scientists and journalists are not speaking the same language (Reed, 2001). Because medical and public health professionals operate from the perspective of science, it is important to examine the relationships between scientists and journalists.<sup>1</sup> In a study that used cultural difference theory to examine the relationships between scientists and journalists, Peters (1995) identified three difficulties that occur when communicators were from different professional cultures, as are scientists and journalists: First, difficulties in transmitting meaning increased as cultural difference increased. Second, group stereotypes from the respective cultures caused prejudices. Third, different conventions, norms, role definitions, and definitions of situations were confronted during the intercultural communication, and may have caused a mismatch of expectations between the two parties. Traditionally, relationships between scientists and journalists have not been good, and “on the few occasions that they do come together, the encounters are tense ones” (Dunwoody & Scott, 1982, p.52). Peter Conrad (1999) compared this to a symbiotic relationship. He wrote,

Sources require journalists to get their views or ideas into the news, while journalists require sources for direction, clarifications, context and perspective, and commentary. In reality, because reporting news is their job, journalists rely more on sources than vice versa (p. 286).

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<sup>1</sup> Note: While some media organizations may separate coverage of science/technology and health/medicine, for the purpose of this research, health news coverage will be examined in the overall umbrella of science news.

But, in order for coverage to take place, scientists and journalists are forced to come together as reporters and news sources.

### *Source selection*

Journalists need scientists to provide expertise on the topic of news stories. The opinions and research cited by the scientists can increase the credibility of the article. Conrad (1999) found that expert quotes in news stories provided context, legitimization, explications, balance, and implications.

Selection of sources has a significant impact on the final article written. In a review of science coverage, Dunwoody (1986) identified three factors that led a journalist to choose a particular source: mainstream status, administrative credentials, and previous contact with the media.

The actions of the source can also affect the likelihood of being interviewed. Conrad (1999) found that reporters preferred sources who were accessible, were able to put information in context, were quotable, and were an expert or experienced in a particular field. Reporters tended to rely on these types of sources. “The reporter who finds a selfless scientist who is willing to talk, who will return his phone calls and explain it all one more time has found a treasure beyond price” (Crisp, 1986, p.77). Valenti (1999) asserted that scientists who are able to take information down to the “101-level” are more likely to be successful in their interactions with the media. This ability to work with reporters can give a source power, Nelkin argued: “...those sources who are best organized to provide technical information to journalists in an efficiently packaged form have a great deal of control over what ultimately appears as news” (Nelkin, 1991, p. 296). Thus, the relationship between the expert source and the journalist can be a challenge

because journalists look for the best sources for their stories, and scientists seek to provide helpful information to reporters. While the reporter may have one set of expectations about a media interview (quick response time, ability to translate complex information), the scientist may have other reasons for participating in a news article.

### *Scientists: Motivation and Background*

The majority of scientists are not required to do media interviews. Dunwoody and Ryan (1985) noted that, “Being a ‘good’ scientist in the eyes of one’s colleagues does not require that attention be paid to such concerns as public understanding of science” (p. 39). Yet, previous research by Dunwoody and Ryan (1983) found that 97% of scientists surveyed agreed that it is important to be able to communicate their research to non-scientists. Being interviewed for media articles is one way for scientists to communicate their research.

Numerous studies have looked at the motivation of scientists to do media interviews. At least from the scientists’ perspective, research has shown that the disadvantages of media coverage tend to outnumber the benefits. Prior research on the reasons that scientists did not want to participate in media coverage included: articles were inaccurate; articles were sensationalized; articles were biased; articles encouraged fear; media interviews took too much time and effort; doing interviews made it look like the scientist was seeking publicity; publicity about research may have caused others to question the scientist’s intentions; scientists who are accustomed to being in control found they lost control over information in interviews; fear of violation of medical journal policies; and restrictions or lack of support from the scientist’s employer (Ankeny

& Curtain, 2002; Dunwoody & Ryan, 1985; Gascoigne & Metcalfe, 1997; Nelkin, 1995; Wilkes & Kravitz, 1992).

Scientists realized that there also were benefits to participating in media articles. Five advantages have been cited in research on this issue, including: information given was helpful to or educational for the public; recognition in the media may have helped advance the scientist's career; personnel fulfillment; to build public support for projects; and to obtain funding for research (Ankeny & Curtain 2002; DiBella, Ferri & Padderud, 1991; Dunwoody & Ryan, 1985; Gascoigne & Metcalfe, 1997; Gunter, Kinderlerer & Beyleveld, 1999; Nelkin, 1995; Peters, 1995; Wilkes & Kravitz, 1992). These benefits may provide the motivation for scientists to make themselves available as media sources on a regular basis.

#### *Frequency of interviews*

Researchers have found that the more scientists participate in media interviews, the more positively they perceive the experience. In a random sample of scientists listed in a reference guide, DiBella, Ferri, and Padderud (1991) found that 77.2% of scientists had participated in at least one interview and that newspapers were the most common medium for the stories. Most of the 287 physical and social scientists surveyed by Dunwoody and Ryan (1985) had had contact with at least one or two reporters in the past year. A total of 67.6% of the scientists at Ohio universities interviewed by Dunwoody and Scott (1982) had participated in at least one media interview. Those who had been interviewed had participated in an average of 4.6 over the course of their career. Authors of papers in the *New England Journal of Medicine* and the *Journal of the American Medical Association* had given an average of 15 radio or TV interviews; 14 newspaper



interviews; and four national magazine interviews during their careers (Wilkes & Kravitz, 1992).

The comfort level of scientists in the interview process varied. Of the 287 scientists surveyed by Dunwoody and Ryan (1983), 93% said that their scientific training did not adequately teach them how to interact with the media. Yet, the majority of those same scientists indicated that they would be willing to initiate contact with a reporter, but only 12% had actually done so within the past year.

One reason for the lack of comfort among scientists with media interviews is a lack of familiarity with the news-making process.

#### *Barriers to coverage*

The pace of the scientists' and journalists' craft is different. Journalists are driven by tight, daily deadlines, with their focus changing from day-to-day; scientists' work is typically slow and builds on previous research bit-by-bit. Several studies have determined this difference in pace is a barrier to the relationships between the two groups.

...it is difficult to communicate to the public the actual tentative, probing, frequently intuitive nature of much science. Instead, the public image of science tends to be one of methodical force, ruthless and unstoppable in its logical and rational assault on the problems that face mankind (Trachtman, 1981, p. 14).

Logistics also come into play when scientists and journalists interact. The lack of time that journalists are given to report on stories can make it difficult for them to work with scientists who are involved in complex research (Larsson, Oxman, Carling & Herrin, 2003; Reed, 2001; Winsten, 1985). Journalists often come into science article assignments with little background knowledge of the subject. This can lead to barriers to

communication with the scientists. Nelkin found that journalists often miss important scientific stories because they are unable to recognize what is important (Nelkin, 1995).

Journalists' comfort level with the material is also a problem. Tankard and Ryan (1982) found that because journalists have trouble understanding complex numbers, they instead focus on written conclusions of the research and ignore specific data and scientific methods. If journalists did not have time to conduct research before the interview, they may have had trouble getting the scientists to translate complex information during the interview (Gunter, Kinderlerer & Beyleveld, 1999).

A lack of newspaper space for articles is also an issue. Journalists often have only a few inches to explain the details of the scientist's research. Therefore, journalists are forced to pick and choose what information to report and what to leave out (Winsten, 1985). Furthermore, Goodfield (1981) argued that the inverted pyramid structure causes problems with science stories because stories are often edited from the bottom, which means that the details of the research methods—important to explaining the science—are often left out. Competition for article placement, particularly on page one of a newspaper, can lead to tension between scientists and journalists because the journalists will tend to play up more sensational aspects of the research to get better placement for their news article (Winsten, 1985).

The cultures of journalism and science are different, causing many barriers to communication, including lack of specific knowledge, complex information and the limitations of both sets of professionals. There is often a need for someone to bridge the gap between the two groups—a function that can be filled by public relations professionals.

### *The role of public relations*

When people from two different cultures come together, a translator is often brought in to facilitate communication. When scientists and journalists come together, that translator could be a public relations professional. PR professionals are “marriage brokers, bringing together scientists and science writers, teaching each group how to appreciate the other,” (Nelkin, 1995, p. 141). Nelkin noted that professional societies, academic institutions, and research organizations have realized the value of PR and have increased their activities in PR since the 1960s (Nelkin, 1995).

### *Relationships among Scientists, Journalists and Public Relations Professionals Working in Public Health Agencies*

Public health officials interact with journalists on a regular basis, and because they are from different cultures, the interactions can be difficult at times. Arkin (1990) clearly laid out the difference in objectives for the media and public health professionals. The media are looking for stories that are entertaining, short-term events and tend to address personal concerns. The media ultimately want to make a profit. Public health officials focus on long-term campaigns, and want to create understanding of complex issues, and ultimately, change society (Arkin, 1990).

In a survey of state and local health officials, Gellert, Higgins, Lowery and Maxwell (1994) found that 96% of state health officials interacted with the media at least weekly, and 58% of local health officials had contact with reporters weekly. Print media outlets were the most frequent type of media to contact public health officials, with 63% of officials having worked with a print reporter. Television was next with 19%, followed by radio with 17% and other with 1%.

Gellert et al. (1994) also looked at the role of PR in public health agencies. They determined that 85% of state health departments and 49% of local health departments had a public information officer or designated media contact on staff. Written policies for dealing with the media were in place at the majority of state health departments (81%), while less than half (31%) of local health departments had written guidelines for dealing with media requests. Of the state health officers responding to the survey, 58% indicated that they had been media trained, while 41% of officials with large local health departments and 19% of officials with small local health departments had had media training. The benefits of such training were clear—100% of state health officials said that their staff would benefit from media training and 85% of local health officials agreed. The health officials surveyed said that a majority of the time, media relations was positive.

As shown, the ability of journalists and scientists to communicate with one another is important to the accurate transfer of health information from the science community to the public through the media. PR professionals can help to foster the transfer of information.

### **Accuracy of news articles**

Accuracy is one of the most important elements of journalism. According to Kovach and Rosenthal (2001), accuracy is “the foundation upon which everything else builds: context, interpretation, debate and all of public communication” (p. 43). But what does it mean for an article to be accurate? In his 1970 survey of newspaper accuracy, William Blankenburg defined news accuracy as “truthful reproduction of an event or activity of public interest” (p.376). Philip Meyer, who has conducted several large-scale

studies of newspaper accuracy, noted that without accuracy, other aspects of quality journalism, like courage, industry, watchfulness and investigation, are negated if the facts cannot be communicated accurately (Meyer, 1988).

Journalists realize that accuracy is important. In a 2006 survey by the Pew Research Center for People and the Press, 41% of journalists said that quality of coverage was the top problem facing journalism (Pew Research Center, 2006). Tillinghast (1982) learned that “even reporters will admit that the average reader will be reading mistakes in 2 out of every 10 stories in the newspaper” (p. 21).

Several polls have asked consumers about accuracy. A 1998 Gallup/CNN/*USA Today* poll found that 65% of respondents felt that they could trust the accuracy of news and information from local newspapers; and 49% of respondents felt that they could trust the accuracy of news and information from national newspapers, such as the *New York Times* and *USA Today* (Gallup/CNN/*USA Today*, 1998, July). Kocher and Shaw (1981) asserted that perceptions of inaccuracy by readers or viewers overrode whether or not the news article actually had an error. Urban (1999) examined the reasons for consumers’ distrust of the media and found that it is because most media users saw errors in the media on a regular basis. She found that 35% of newspaper readers saw spelling or grammar mistakes in their newspaper at least once a week and 21% saw them almost daily.

Journalists are trained to report the facts correctly. Ankney, Heilman, and Kolff (1996), after examining the number of errors in reports about a complex coronary bypass procedure, wondered how reporters could get away with so many errors. They noted that college journalism students receive lower grades or fail assignments when a mistake is

found. They believed that errors for professional journalists should be no less acceptable. Accuracy is ingrained in journalism ethics as well. Part of the Society of Professional Journalists' code of ethics says that journalists should, "Test the accuracy of information from all sources and exercise care to avoid inadvertent error. Deliberate distortion is never permissible" (as cited in Meyer, 2004, p. 84).

Because of their role in the process of newsgathering, sources are in a position when they can evaluate the accuracy of the news media. If reporters lose the trust of their sources due to inaccuracies, this will hamper the ability of journalists to do their jobs (Maier, 2005a). Surveys of news sources confirm this. A 1984 study conducted by the American Society of Newspaper Editors found that sources were among the most distrustful of the news media (as cited in Maier, 2005a). However, Berry (1967) noted that source perceptions may not be entirely accurate. Even a short time after the news article appears, a source may not have recalled exactly what was said to the reporter, and, therefore, may have claimed inaccuracies that had not occurred. In addition, Berry (1967) argued that if a source was portrayed negatively in a news article, he or she was more likely to question its accuracy.

While sources and consumers are skeptical about the accuracy of news articles, they do make allowances for the nature of newsgathering—that it can be fast, with information coming in at a rapid pace. News articles that are 100% accurate would probably take days to produce, instead of the hours or minutes allocated to the reporter on deadline. In *The Vanishing Newspaper*, Meyer (2004) wrote, "The public...does not expect newspapers to be perfect. Neither do most of the sources quoted in the paper. The problem is finding the right balance between speed and accuracy, between being

comprehensive and being merely interesting” (p. 89). Clearly, a balance between speed of reporting and accuracy must be sought in health news articles, when incorrect information can cause harm.

Several factors are involved in determining the accuracy of a news article, including overall accuracy rates, types of errors, causes of errors, categories of errors, severity of the errors, news gathering methods, and future source participation. The literature on all of these factors will be examined, along with recommendations to improve news accuracy.

#### *News accuracy rates*

Journalism scholars have examined newspaper accuracy since 1936 when Mitchell Charnley conducted the first survey of news sources. Charnley’s premise, which has been replicated numerous times, was relatively simple: To send news sources a copy of the news article and ask them to rate the overall accuracy of the article. Since Charnley’s original study, researchers have looked more closely at the types of errors—errors in fact versus subjective errors (Berry, 1967); accuracy of types of articles, including health and science (Tankard & Ryan, 1974); accuracy of articles in large and small media markets (Bergen, Lafky & Weaver, 2000); and accuracy of wire service articles (Cote, 1970).

A total of 16 research studies looked specifically at accuracy of newspaper articles and surveyed sources in those news articles. Table 1 summarizes the news accuracy studies further.

When the data from all 16 studies of newspaper accuracy are combined, an average of 47.9% of news articles were accurate. General accuracy findings in studies

ranged from a low of 8.8% of stories being accurate (Tankard & Ryan, 1974), to a high of 74% (Lawrence & Grey, 1969). However, the methods of each study may have had an impact on the overall accuracy rates. For example, in the Tankard and Ryan study (1974) sources were given a 42-item list of possible mistakes to choose from when evaluating a science news article, making them more likely to find an error in the article in which they were mentioned. Because one article can have multiple errors, many research studies also calculated the accuracy rate in terms of errors per article. For those seven studies using this statistic, the average rate was 2.58 errors per news article. Again the Tankard and Ryan (1974) study was on the high end, with an average of 6.2 errors per article, and Tillinghast (1983) found the lowest rate of errors per article at 0.91.

#### *Types of errors*

Fifteen of the 16 studies examined the types of errors found in news articles. When looking at all of the data combined, sources surveyed cited three errors as most prevalent: omission of relevant information (most common in 10 research studies)<sup>2</sup>; misquotation (most common in seven research studies); and inaccurate headlines (most common in six research studies). Other errors included errors in name, wrong titles, factual errors, ambiguity, sensationalism, overemphasis, under-emphasis, complex information not explained thoroughly, incorrect figures, and quotes taken out of context.

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<sup>2</sup>Omission of information may not necessarily be an error in a news article, but news sources perceive it as a problem with news reporting in general. Bergen, Lafkey, and Weaver (2000) found that omission of information most negatively impacted source's perception of news reporting quality. Further, they noted that average readers may not realize that a news article is missing relevant information, but sources are in a place to know how additional details could impact the validity of the assertions made in the news article. Thus, for the sake of this study, a source's perception of omission of relevant information was considered as a subjective error.



### *Causes of errors*

Ten of the 16 research studies analyzed looked at the possible causes of the mistakes. Three possible causes—lack of time, complexity of information presented, and length of article—were found in four of the studies when causes were examined. Other possible causes of error included mistakes by the source, insufficient background information, errors by the editor, sensationalism, interview situation (i.e. phone or in person), differing goals for the journalist and the source, lack of preparation by the journalist, and misunderstandings between the source and reporter.

### *Categories of errors*

Many news accuracy researchers have attempted to classify the types of errors reported by sources into broad categories. The most popular way of viewing errors was developed by Berry (1967). He devised two categories of error—objective errors, such as errors in name, title, address, figures, time, location, dates and misspelled words; and subjective errors, such as inaccurate headlines, overemphasis, under-emphasis, and omissions. In more recent research by Maier (2005a), subjective errors, which were defined as the information being technically correct but misleading, were found in 47% of news stories. In a smaller study, Maier found that 25% of subjective errors occurred when the source considered essential information missing (Maier, 2002).

### *Severity of errors*

Several studies have examined whether sources were more forgiving of some types of errors versus others. Sources in science news stories surveyed by Pulford (1976) ranked errors in the whole article as the most serious category of error, followed by omissions and misplaced emphasis. Sources in the articles analyzed by Maier (2005a)

said that incorrect addresses were the most severe error, followed by all of the subjective errors.

### *News gathering method*

Berry (1967), Lawrence and Grey (1969), Tichenor, Olien, Harrison, and Donohue (1970), Blankenburg (1970), and Marshall (1977) examined whether the method of news gathering affected the overall accuracy of the articles according to the sources. Berry (1967) found that the most accurate source of news stories was a press release, followed by a personal interview, and then an existing relationship between the reporter and source. Lawrence and Grey (1969) determined that contact with the reporter seemed to lessen the seriousness of the errors perceived by the source. Tichenor, Olien, Harrison, and Donohue (1970) discovered that articles in which the reporter and the source had face-to-face contact tended to be more accurate. Blankenburg (1970) found that sources who indicated that they knew the reporter personally reported one-third fewer errors, and the sources viewed those errors as less serious. Lastly, Marshall looked at the accuracy of news gathering rates compared to how often the method was used. He found that a press release was the most accurate source of news, but was used fourth most commonly. Reporters attending an event was the second most accurate method of gathering information, but was used third most often. Phone interviews were the most common newsgathering method, but were ranked fifth in accuracy (Marshall, 1977).

After analyzing source perceptions of error for news articles in 12 U.S. markets, Maier (2005a) suggests that public relations (PR) professionals could help increase news accuracy by working with journalists to help avoid errors in stories about the PR

practitioners' client or organization. The literature on this function, which is known as boundary spanning, will be examined next.

### **Boundary spanning**

When a public relations professional facilitates communication between an expert source and a journalist, he or she is performing in a boundary-spanning role. To understand the role of public relations professionals as boundary spanners, first it is necessary to define boundary spanning. A boundary is, "the demarcation line or region between one system and another, that protects the members of the system from extra systematic influences and that regulates the flow of information, material and people into or out of the system," (Leifer & Delbecq, 1978, p. 41). Thus, a boundary spanner is "a person who serves two functions within the organization: he or she conveys influence between constituents and their opponents, and he or she represents the perceptions, expectations and ideas of each side to the other" (Friedman & Podolny, 1992, p. 29). In other words, boundary spanners filter and organize information, relaying it to others in the organization as needed (Aldrich & Herker, 1977). Common boundary spanning roles in organizations include purchasing clerks, salespeople, and public relations professionals.

For a boundary spanner to be effective, he or she must understand the environments on both sides of the boundary, so that relevant information can be found and disseminated to the proper parties (Tushman & Scanlon, 1981). Aldrich and Herker (1977) identified two functions performed by boundary roles: First, information processing, in which information from external sources came into an organization through the boundary roles. Second, external representation was the role of the boundary

spanner when he or she was acting on behalf of the organization in an external capacity. Several factors influenced how boundary spanners could perform their jobs, including: what they were told to do by a supervisor; their own wants, needs and personality; past experience; the context in which the information would be analyzed; and whether or not the information was redundant (Leifer & Delbecq, 1978).

The need for boundary spanners may be anticipated or unanticipated, and the process of boundary spanning is affected by the level of uncertainty within an environment (Leifer & Delbecq, 1978). Several factors affected whether boundary-spanning activities became routine. Boundary spanning was non-routine when the environment was unpredictable, the sources of information were diverse and changing, the people with whom the boundary spanners were interacting were changing, and sources were non-cooperative (Leifer & Delbecq, 1978).

Boundary-spanning roles can be formal or informal. The more critical an outside group was to the success of an organization, the more likely the boundary-spanning role to deal with that group was formalized (Aldrich & Herker, 1977). For example, the boundary-spanning role to move between a large grocery chain and its labor union would be more formal because the actions of the union are imperative to the success of the store.

Acting as a boundary spanner has advantages and disadvantages for the person in that role. Expectations from opposing groups, including standards on how to act, values to express and interests to represent, can lead to conflict for the boundary spanner (Friedman & Podolny, 1992). In a study of boundary spanning in the electronics and wood products industries, Schwab, Ungson and Brown (1985) found that if the interaction with an unpredictable group suddenly became critical to the organization, then

the organization would become overly dependent on the boundary spanner who interacts with the uncertain group. This can lead to stress for the person in the boundary-spanning role.

The main advantage for persons acting in boundary-spanning roles is the ability to gain power within the organizational structure. Several researchers have confirmed this. “To the extent that information access is a power resource, boundary spanners are in an excellent structural position to convert this resource into actual power” (Aldrich & Herker, 1977, p. 227). Further, with gatekeeping powers, boundary spanners will become even more powerful if they make the correct inferences based on the information presented to them, particularly if the information analyzed is vital for organizational survival (Aldrich & Herker, 1977). White and Dozier (1992) noted that to be useful, the information gathered by boundary spanners must be organized in a way that fits within the organization’s decision-making structure and process. In an examination of the communication habits of boundary spanners, Tushman and Scanlon (1981) determined that employees who were effective communicators with both internal and external audiences—boundary spanners—were seen by their peers as valuable sources of information. Jemison (1984) observed employees at food processors, financial institutions, and hospitals to study the influence of boundary spanners on strategic decisions and discovered that 60% of the variance in influence of a particular department was associated with boundary-spanning activities. In other words, departments with boundary-spanning roles were seen as more influential than those departments without boundary-spanning responsibilities. Jemison concluded that, “Boundary spanning units are important in strategic decision making because of their ability to recognize and deal

with trends or changes in the environment” (Jemison, 1984, p. 131). Boundary spanners did not have to have high positions within the organizational hierarchy to achieve power (Schwab, Ungson, & Brown, 1985). A reason for this is that most decision makers in organizations have an interest in boundary-spanning activities and may be responsible for boundary spanning as well. White and Dozier (1992) noted that, “Much of the behavior of the dominant coalition, the management group giving direction to the organization, is directed toward managing boundary conditions of an organization” (p. 101).

While the majority of the boundary-spanning research has focused on boundary-spanning roles throughout the organization, communicating with the media is an important boundary-spanning role. This role typically falls to public relations professionals.

#### *Boundary spanning in health and science news stories*

Several public relations researchers believe that it is the role of PR professionals to bridge the gap between experts and journalists through boundary spanning (Ankney & Curtain, 2002; Wyatt, Smith, & Andsager, 1996; Wise, 2001). Ankney and Curtain (2002) defined boundary spanners in this context as people who had contact with internal and external groups and who clarified perceptions, thoughts, and needs. Further, they noted that boundary spanners reduced conflict and brought disparate groups together through collaboration, communication, and decision making. Springston and Leichty (1996) defined the PR practitioner’s boundary-spanning role as representing management’s perspective to relative publics and then informing management of the perspectives of those publics. L.A. Grunig (1992) defined the role in a more mysterious

way: "...boundary spanners in essence lead a double life (by representing the organization to the outside and vice-versa)" (p. 490).

When a source does a media interview, he or she serves as a boundary spanner between the organization and its publics, including the media (Cameron, Sallot & Curtin, 1997). Common boundary-spanning activities by public relations professionals and news sources included gatekeeping of information that the organization had, and seeking information from relevant publics (Wyatt, Smith & Andsager, 1996).

When a public relations professional is working for a health care organization, he or she has a significant boundary-spanning role. Ankney and Curtin (2002) identified multiple boundary-spanning functions for medical public relations professionals, including bringing groups together, creating trust, exchanging information, and making sure highly technical information was accurately transmitted.

At publicly funded agencies, including public health departments, boundary spanning has an even greater significance. Aldrich and Herker (1977) found that organizations that serve large numbers of people were more likely to have more people operating in boundary-spanning roles. Boundary-spanning activities can help bring attention to public health functions and help those who allocate funding understand the value of public health (Wise, 2001). It is vitally important for public health: "Boundary spanners could, and should, assist public health bodies in mobilizing community partnerships to identify and solve health problems and in developing policies and plans to support individual and community health efforts" (Wise, 2001, p. 477).

As the research has shown, boundary spanning can help individuals accumulate power within organizations. This holds true for public relations as well. In a survey of

137 PR professionals about boundary spanning and PR roles, Springston and Leichty (1994) found that public relations professionals gained influence by representing the management philosophy to external publics and then relaying the concerns of those publics directly to the organization's management team.



## **RESEARCH DESIGN**

### **Research questions**

The purpose of this research was to examine the role of PR professionals in the communication process, and to determine whether the involvement of a PR professional leads to improved news article accuracy.

Based on a review of the literature, the following seven research questions were addressed:

**RQ<sub>1</sub>:** How often are public relations professionals with state and local health departments involved in facilitating the development of public health news articles?

**RQ<sub>2a</sub>:** Which methods are used most often by public relations professionals to facilitate communication between journalists and public health officials?

**RQ<sub>2b</sub>:** Is there a difference between the type of facilitation a public relations professional provides and the number of errors (objective/subjective) that occur in news articles?

**RQ<sub>3A</sub>:** Does the involvement of a public relations professional in a public health news article impact the number of objective errors identified by the public health news source?

**RQ<sub>3B</sub>:** Does the involvement of a public relations professional in a public health news article impact the perceived severity of the objective errors identified by the public health news source?

**RQ<sub>4A</sub>:** Does the involvement of a public relations professional in a public health news article impact the number of subjective errors identified by the public health news source?

**RQ<sub>4B</sub>:** Does the involvement of a public relations professional in a public health news article impact the perceived severity of the subjective errors identified by the public health news source?

**RQ<sub>5</sub>:** What do public health news sources consider to be the primary cause of errors in public health news articles?

**RQ<sub>6</sub>:** Does the method of gathering information for a public health news article (i.e. news release or telephone interview) affect the number of errors identified in the news article?

**RQ<sub>7</sub>:** Is a news source's prior media experience associated with the accuracy of the public health news article?

## **Methodology**

To research news accuracy in newspaper stories about public health agencies, and the boundary-spanning role of public relations professionals, a self-administered online survey of state and local health department officials who had recently served as news sources was conducted.

Cook, Heath, and Thompson (2000) found that Web-based surveys could reach a large audience without much expense and in a short period of time. Dillman (2000) noted that government employees were one population that was most likely to have access to the Internet; therefore making it possible to use online surveys to get an accurate sample of this group (as quoted in Cook, Heath, & Thompson, 2000). Because all of the public health news officials surveyed were employed by a state or local health department, they fit into the classification of government employees. Furthermore, Cook, Heath, and Thompson (2000) noted that there were three advantages of Web-based surveys: they could be completed at the pace the subject desires/determines; it was harder to misplace a copy of a survey that was electronic versus paper; and the researcher's ability to manipulate survey questions in an online survey.

Maier (2005b) examined the use of online surveys for newspaper accuracy studies. He used both online and mailed surveys to reach half of the sources in the sample, and the other half of the sources only received mailed copies. The Web-based respondents returned more completed questionnaires, and the accuracy rates of those sources responding online versus by paper did not differ significantly (Maier, 2005b).

Although response rates seem to be adequate for online surveys, there are disadvantages to doing them. Wimmer and Dominick (2006) noted that with online

surveys it is difficult to verify whether the person recruited actually completed the survey.

The questions in the survey section on newspaper accuracy followed those shown in Meyer (2004, p. 105-108) to allow the data on the accuracy of the news articles to be compared to existing data. Meyer's survey, which was conducted with Maier, first looked at the type of error, and then looked at the causes of the error, first for objective errors (name misspelled, wrong title, etc.) and then for subjective errors (misquotation, sensationalism, etc.). Next, the survey asked sources to assess the severity of the errors in the article, and then to provide demographic information. The final section of Meyer and Maier's survey looked at factors that influence newspaper credibility. These questions were replaced with questions about the involvement of a PR professional.

The predictor variables in this study were the involvement of a PR professional, functioning in a boundary-spanning role to facilitate communication between the public health official and the journalist, and the type of involvement of that person. The criterion variables were the overall accuracy of the newspaper article, according to the public health official, and the official's perception of the severity of the errors made in the news article.

The SurveyMonkey software was used to design the online survey. In order to have a longer survey and analyze the data more readily, the professional version of SurveyMonkey was used.

When an e-mail address was available for the source, he or she received an e-mail invitation from the researcher explaining the purpose of the survey, along with a copy of the article in which he or she was quoted. The e-mail then linked to the online survey,

giving the source the option of completing the survey immediately. A first follow-up e-mail was sent after one week to those sources who did not respond to the original e-mail. A second follow-up e-mail was sent to the sources who had not responded two weeks after the first follow-up.

If an e-mail address for a news source could not be found, the researcher contacted the Webmaster or PR professional for the source's organization, gave an overview of the purpose of the research, and asked if an e-mail address could be provided. Only sources who were e-mailed the survey directly were counted in the sample. See Appendix B for all four e-mails.

### **Sample**

Articles included in the sample were chosen using a purposive sampling frame. An article with a public health official identified by name as having an affiliation with a state or local health department was considered. To ensure that the public health official was more involved in the production of the news article than providing a quick quote, only articles in which a public health official was quoted directly or indirectly at least two times were considered.

News articles were gathered from the top 100 circulation newspapers in the U.S., according to the Audit Bureau of Circulations 2006 figures, based on the assumption that newspapers with higher circulation would make use of sources from urban local health departments or state health departments—agencies more likely to have a public relations professional on staff. Of those papers, 69 were indexed in the Lexis-Nexis research software, thus those were the ones included in this sample. One newspaper—*La Opinion*—met the criteria for circulation and was indexed by Lexis-Nexis; however, it

was eliminated from the sample because its articles are in Spanish. A list of newspapers included in the sample can be found in Appendix C.

Once the sampling frame was set, articles were selected using a census during the sampling time period, with each article meeting the criteria being included. The survey was conducted for articles appearing in the 69 major metropolitan newspapers between April 28, and July 6, 2008. The eleven-week sampling period was used to allow for sufficient sampling of article topics and news sources; however it was found that in later weeks, many sources had to be excluded from the sample as they had already been surveyed.

The selection criteria for articles to be included in the sample were that the article (1) was longer than 300 words, allowing for explanation of somewhat complex health issues, and public health officials to have the opportunity to be quoted multiple times; (2) included the keywords “public health,” “health department” or “health officials”, and (3) quoted a public health official directly or indirectly at least two times.

In articles with more than one source, preference was given to the public health official quoted first. However, if the first public health official quoted in the article could not be contacted by e-mail, the second public health official was used. If a source was quoted in more than one article, he or she was only surveyed on the article that appeared first.

Individual sources were not sampled more than once so that each individual’s response would have equal weight in the statistical analysis. A spreadsheet of articles, sources, survey delivery, and survey completion was used to ensure that participants were not sampled more than once and to track survey completion.

## **Variables**

### *Accuracy*

One of the best ways to determine the accuracy of a news article is to have a source examine the article and review the errors made in the article (Maier, 2005a). In this study, accuracy was measured by five survey questions. In those questions, sources were asked whether any of 22 types of errors (12 that were considered objective and 10 subjective) were made in the article in which they were quoted. Objective errors were errors of a factual nature, such as the misspelling of a name; while subjective errors were errors that involved interpretation, such as quote that was paraphrased incorrectly (See Appendix A for a complete list). This classification follows the system first developed by Berry (1967) and used by Meyer (2004).

Sources were also asked to rank the severity of those errors and decide whether the article as a whole contained numerous errors. It follows then that a news article with fewer errors was more accurate than one with more errors. To be completely accurate, a news article had no errors, or at least no errors perceived by the source.

### *Public relations professional*

In this study, a PR professional was defined as anyone with the job title of public information manager, public relations specialist, communications specialist, or who worked with the media and other stakeholders to share information about the organization. Using this definition, public health news sources were asked whether they had worked with a PR professional in the article included in the sample on question 11 of the survey (See Appendix A).

### *Boundary spanning*

One survey question looked at activities that can demonstrate the boundary-spanning role of public relations professionals in those instances in which a public health news source indicated that he/she had worked with a PR professional. These activities included: arranging the logistics of the interview—putting the source in touch with the journalist, either by phone, e-mail or in person; listening in on the interview (phone interview) or attending an in-person interview; providing the public health official serving as the source with background information prior to the interview with the journalist, including talking points or message maps; and providing the journalist with background information ahead of time, including writing a news release.



## RESULTS

### Statistical assumptions

For the data that were analyzed using frequencies, the values are simply reported. When data were analyzed to compare the means, the following statistical assumptions were used: A  $p$ -value of 0.05 was used to determine the statistical significance of the  $t$ -test results. Additionally, a one-tailed test was used to compute the  $p$ -values, since the research questions indicated a direction. For each  $t$ -test, Levene's test was used to determine equal variance, and in all instances, equal variance was shown. The values for the  $t$ -tests are summarized in Tables 3 and 8<sup>3</sup>. Lastly, effect size, expressed as  $\eta^2$  was calculated for each  $t$ -test result to estimate the degree of association.

A response of "other" was an option on seven survey questions. Responses of other were coded as one value in the statistical analysis. In the four survey questions where respondents had the opportunity to type in a response next to the other selection, those responses were analyzed for the written analysis, but were not separated statistically.

### Sample

Of the sources contacted directly for this study, 55.6% responded ( $N=167$ ). Of the newspapers included in the sample, an average of 2.5 responses were obtained from each newspaper. No responses were obtained from 15 newspapers. The papers with the highest number of responses included the *Baltimore Sun* (12), *Deseret News* (10), and *Columbus*

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<sup>3</sup> Because the number of errors per story was not normally distributed, Mann Whitney U values were also calculated for data comparing the means; however the Mann Whitney U results were similar to the  $t$ -test results, thus only  $t$ -values are reported here.

*Dispatch* (8), which is consistent with the fact that those three publications had the highest number of articles included in the sample.

Of the 167 respondents, 55.7% ( $n=93$ ) were female and 44.3% ( $n=74$ ) were male. Of the 86 respondents who worked with a PR professional, 50% ( $n=43$ ) were female and 50% ( $n=43$ ) were male. A majority of respondents were between the ages of 36 and 55 (64%,  $n=107$ ), with 25.7% falling between age 36 and 45 ( $n=43$ ), and 38.3% falling between the ages of 46 and 55 ( $n=64$ ). Only 12.6% of respondents indicated that they were under age 35 ( $n=21$ ); and 23.4% indicated that they were over the age of 56 ( $n=39$ ). The distribution in ages of the 86 respondents who worked with a PR professional are similar—69.8% of respondents working with a PR professional were between the ages of 36 and 45 ( $n=60$ ), 10.5% were under age 35 ( $n=9$ ) and 19.7% were over age 56 ( $n=17$ ).

Survey respondents were more likely to work for a local health department than for a state health department. Of the 167 respondents, 60.5% indicated that they worked for a local health department ( $n=101$ ), while 38.3% indicated that they were employees of a state health department ( $n=64$ ). The remaining two respondents indicated that they worked for another type of agency. The distribution between state and local health departments was more even for those 86 respondents who indicated that they had worked with a PR professional. Of those, 52.3% indicated that they worked for a local health department ( $n=45$ ) and 47.7% indicated that they worked for a state health department ( $n=41$ ).

Many public health departments assign the role of media spokesperson to the agency's top official, and that was consistent with the results of this survey, with 34.1% of respondents indicating that their position within the agency was one of director or

commissioner ( $n=57$ ). A number of stories in the sample about communicable diseases most likely led to a large number of responses from epidemiologists or communicable disease specialists, with 17.4% ( $n=29$ ). An equal number of respondents, 15.6% ( $n=26$ ) indicated that they worked in public relations or choose the category of other to describe their position. The most common job title of those respondents choosing the other response was program manager or coordinator (10.7%,  $n=18$ ). Environmentalists (9.6%,  $n=16$ ) and health educators (7.8%,  $n=13$ ) completed the list of positions. Again, these results were consistent when the responses of the 86 respondents who worked with a PR professional are considered. In that group, 38.4% indicated that they were the director or commissioner ( $n=33$ ); 25.6% a epidemiologist or communicable disease specialist ( $n=25.6\%$ ); 17.4% another title ( $n=15$ ); 10.5% an environmentalist ( $n=9$ ) and 8.1% a health educator ( $n=7$ ).

The sample was a well-educated one, with 64.1% indicating that they had obtained a graduate degree ( $n=107$ ), and another 12% indicating that they had completed some graduate study ( $n=20$ ). College graduates were second highest with 22.2% ( $n=37$ ), followed by some college (0.6%,  $n=1$ ) and high school diploma (1.2%,  $n=2$ ).

Respondents working with a PR professional followed the same breakout, with 74.4% of the 86 respondents who worked with a PR professional indicating that they had obtained a graduate degree ( $n=64$ ), and another 5.8% indicating that they had completed some graduate study ( $n=5$ ); college graduates accounted for 18.6% of the group working with PR professionals ( $n=16$ ) and high school diploma for 1.2% of that group ( $n=1$ ).

An overwhelming majority of the sample—76%—indicated that they were well versed in the media interview process, having participated in 10 or more previous media

interviews ( $n=127$ ). Another 12.6% said that they had participated in four-to-nine interviews ( $n=21$ ). Additionally, 7.8% indicated that they had participated in one-to-three previous interviews ( $n=13$ ), and 3.6% indicated that they had never participated in a previous media interview ( $n=6$ ). When looking at the 86 respondents who indicated that they had worked with a PR professional, the numbers are similar: 70.9%—indicated that they were well versed in the media interview process, having participated in 10 or more previous media interviews ( $n=61$ ); 17.4% said that they had participated in four-to-nine interviews ( $n=15$ ); 8.1% indicated that they had participated in one-to-three previous interviews ( $n=7$ ); and 3.5% indicated that they had never participated in a previous media interview ( $n=3$ ).

## **Results**

RQ1 examined how often public relations professionals with state and local health departments are involved in facilitating the development of public health news articles. The sample was relatively evenly split, with 51.5% indicating that they had worked with a PR professional ( $n=86$ ) and 48.5% indicating that they had not worked with a PR professional ( $n=81$ ).

RQ2 looked at the varied boundary-spanning functions that PR professionals perform when conducting media relations. RQ2<sub>a</sub> examined just how PR professionals were involved in the production of news articles on public health. News sources were provided with four media relations functions of PR professionals—arranging logistics, participating in an interview, providing background information to the public health news source, and providing background information to the journalist. The functions identified in the survey responses are consistent with one of the three roles of public information officers—that of a facilitator/mediator—identified by Rogers (1986, p. 48). Of the 167

respondents, 49% indicated that a PR professional did not perform any of the media relations functions outlined above ( $n=82$ ). Another 20.9% indicated that a PR professional performed only one media relations function ( $n=35$ ); and 12.6% indicated that a PR professional performed two media relations functions ( $n=21$ ). Lastly, 6.5% indicated that a PR professional performed three or four media relations functions ( $n=11$ ).

The data for this analysis of the types of media relations functions were filtered to include only responses from those 86 survey participants who indicated that they had worked with a PR professional, since a PR professional had to be involved to begin with in order to perform a media relations function. Arranging the logistics of the interview was the most common media relations function, with 64% of respondents indicating that the PR professional had arranged the logistics of the interview ( $n=55$ ). A fair number of PR professionals also provided information to journalists, giving that information 41.9% of the time ( $n=36$ ). PR professionals attending or listening in on the interview (24%,  $n=21$ ) and providing information to the source (23.3%,  $n=20$ ) occurred about a quarter of the time.

Table 2: Media Relations Functions ( $n=86$ )

		No/NA	Yes
PR: Logistics	Count	31	55
	%	36.0%	64.0%
PR: Info to journalist	Count	50	36
	%	58.1%	41.9%
PR: Attended or Listened in	Count	65	21
	%	75.6%	24.4%
PR: Info to source	Count	66	20
	%	76.7%	23.3%
PR: Other	Count	85	1
	%	98.8%	1.2%

To analyze RQ2<sub>b</sub>, looking at the impact of a PR professional on the number of errors, an independent samples *t*-test was computed for each media relations function utilized compared to the total number of objective errors reported and the total number of subjective errors reported. The data for this analysis were filtered to include only responses from those 86 survey participants who indicated that they had worked with a PR professional, since a PR professional had to be involved to begin with in order to perform a media relations function. The results are summarized in Table 3.

The mean number of objective errors in articles when PR professionals arranged the logistics of the interview ( $M=0.96, n=55, SD=1.35$ ) was higher than when PR professionals were not involved ( $M=0.58, n=31, SD=1.03$ ); however the difference was not statistically significant ( $t=-1.37, p=0.174, df= 84, \eta^2=0.02$ ).

The mean number of subjective errors in stories when a PR professional arranged the logistics ( $M=1.42, n=55, SD=1.58$ ) was higher than when a PR professional was not involved ( $M=0.90, n=31, SD=1.33$ ); however the difference was not statistically significant ( $t=-1.53, p=0.12, df=84, \eta^2=0.03$ ).

The mean number of objective errors in articles with PR professionals attending or listening in on the interview was higher ( $M=1.05, n=21, SD=1.02$ ), than when a PR professional did not attend or listen in ( $M=0.75, n=65, SD=1.31$ ); however the difference was not statistically significant ( $t=-0.94, p=0.34, df=84, \eta^2=0.01$ ).

The mean number of subjective errors in articles when PR professionals attended or listened in on the interview was also higher ( $M=1.81, n=21, SD=1.66$ ), than when PR professionals did not attend or listen in ( $M=1.05, n=65, SD=1.42$ ), and the *p*-value is statistically significant ( $t=-2.05, p=0.04, df=84, \eta^2=0.05$ )

The mean number of objective errors in articles when PR professionals provided information to the source was lower ( $M=0.60$ ,  $n=20$ ,  $SD=0.83$ ) than when PR professionals did not provide info to the source ( $M=0.89$ ,  $n=66$ ,  $SD=1.34$ ); however the difference was not statistically significant ( $t=0.92$ ,  $p=0.36$ ,  $df=84$ ,  $\eta^2=0.01$ ).

The mean number of subjective errors in articles when PR professionals provided info to the source was lower ( $M=1.00$ ,  $n=20$ ,  $SD=1.45$ ) than when PR professionals did not provide info to the source ( $M=1.30$ ,  $n=66$ ,  $SD=1.53$ ); however the difference was not statistically significant ( $t=0.79$ ,  $p=0.44$ ,  $df=84$ ,  $\eta^2=0.01$ ).

The mean number of objective errors in articles when PR professionals provided info to the journalist was lower ( $M=0.61$ ,  $n=36$ ,  $SD=0.99$ ) than when PR professionals did not provide info to the journalist ( $M=0.98$ ,  $n=50$ ,  $SD=1.39$ ), however, the difference was not statistically significant ( $t=1.36$ ,  $p=0.18$ ,  $df=84$ ,  $\eta^2=0.02$ ).

The mean number of subjective errors in articles when PR professionals provided info to the journalist was higher ( $M=1.50$ ,  $n=36$ ,  $SD=1.78$ ) than when PR professionals did not provide info to the journalist ( $M=1.04$ ,  $n=50$ ,  $SD=1.26$ ); however, the difference was not statistically significant ( $t=-1.40$ ,  $p=0.16$ ,  $df=84$ ,  $\eta^2=0.02$ ).

For public relations professionals performing other media relations functions, there was only one respondent who indicated that PR professional performed another function; therefore, the  $t$ -test value cannot be calculated.

RQ3 looked more closely at the objective errors indicated by the sources to see if the involvement of a public relations professional had an impact on the number or severity of errors. Part of this analysis included an examination of the number and types of objective errors. Survey respondents reported a minimum of 0 (53%,  $n=88$ ) and a

maximum of 10 objective errors ( $n=1$ ). With the zero responses included,  $M=0.96$ ; however, when the zero responses are excluded, to only look at those articles containing errors,  $M=2.0$ .

The frequency of 12 types of objective errors were analyzed, and a response of other objective error was found to be the most frequent, with 25.1% indicating that they felt the article contained an objective error not listed in the responses given ( $n=42$ ). Sources indicated that they felt that they were quoted incorrectly, with 21% marking it as an objective error ( $n=35$ ). Inaccurate headlines were a considerable problem, with 18.6% indicating that the headline was inaccurate ( $n=31$ ). A complete list of objective errors is summarized in Table 4.

The responses in this study were, for the most part, consistent with the 16 previous studies on news accuracy, as summarized in Table 1. In those studies, incorrect quotes and inaccurate headlines were found to be common objective errors.

To analyze the influence of a PR professional on the total number of objective errors, as stated in RQ3<sub>a</sub>, an independent samples  $t$ -test was used. For this comparison, the mean number of objective errors when a PR person was involved in the article was lower ( $M=0.83$ ,  $n=86$ ,  $SD=1.25$ ) than when a PR person was not involved ( $M=1.11$ ,  $n=81$ ,  $SD=1.68$ ); however the difference was not statistically significant ( $t=1.25$ ,  $p=0.22$ ,  $df=165$ ,  $\eta^2=0.01$ ).

To determine whether the involvement of a PR professional in the development of the public health news article was related to the perceived severity of the errors identified in the news article, as stated in RQ3<sub>b</sub>, the perception of the severity of objective errors was compared to the involvement of a PR



Table 4: Objective Errors

		No/NA	Yes
Other objective error	Count	125	42
	%	74.9%	25.1%
Quotes wrong	Count	132	35
	%	79.0%	21.0%
Headline inaccurate	Count	136	31
	%	81.4%	18.6%
Numbers wrong	Count	152	15
	%	91.0%	9.0%
Job title wrong	Count	154	13
	%	92.2%	7.8%
Other spell/typo error	Count	156	10
	%	94.0%	6.0%
Name was misspelled	Count	161	6
	%	96.4%	3.6%
Address wrong	Count	164	3
	%	98.2%	1.8%
Date wrong	Count	164	3
	%	98.2%	1.8%
Time wrong	Count	165	2
	%	98.8%	1.2%
Location wrong	Count	166	1
	%	99.4%	.6%
Age wrong	Count	167	
	%	100.0%	

professional using an independent samples *t*-test. Public health news sources were asked to rank the severity of the objective errors using a Likert scale, with 1 being minor and 7 being major. In articles in which a PR professional was involved, the sources felt that severity of the errors was higher ( $M=3.91$ ,  $n=32$ ,  $SD=1.80$ ) than articles in which a PR professional was not involved ( $M=3.44$ ,  $n=34$ ,  $SD=2.05$ ); however the difference was not statistically significant ( $t=-0.98$ ,  $p=0.34$ ,  $df=64$ ,  $\eta^2=0.01$ ).

The fourth research question looked more closely at the subjective errors indicated by the sources and if the involvement of a public relations professional had an impact on the number or severity of errors. Part of this analysis included an examination of the number and types of subjective errors. Survey respondents reported a minimum of zero subjective errors ( $n=78$ ) and a maximum of seven ( $n=1$ ). With the zero responses included,  $M=1.29$ . However, when the zero responses were excluded, to only look at those articles containing errors,  $M=2.41$ .

The frequency of eight types of subjective errors was analyzed, with a response of information omitted as being the most common subjective error reported, with 28.7% indicating that they felt information was omitted from the article in which they participated ( $n=48$ ). Another common subjective error was quotes distorted, with 26.3% reporting this ( $n=44$ ). A complete list of subjective errors is summarized in Table 5.

The responses in this study were, for the most part, consistent with the 16 previous studies on news accuracy, as summarized in Table 1. In those studies, information omitted and quotes distorted were found to be common subjective errors. To analyze the influence of a public relations professional on the total number of subjective errors, as stated in RQ4<sub>a</sub>, these numbers were compared using an independent samples  $t$ -test. The mean number of subjective errors when a PR professional was involved in the article was lower ( $M=1.23$ ,  $n=86$ ,  $SD=1.51$ ) than when a PR professional was not involved in the article ( $M=1.35$ ,  $n=81$ ,  $SD=1.73$ ); however the difference was not statistically significant ( $t=0.45$ ,  $p=0.66$ ;  $df=165$ ,  $\eta^2=0.00$ ).

Table 5: Subjective Errors

		No/NA	Yes
Info omitted	Count	119	48
	%	71.3%	28.7%
Quotes distorted	Count	123	44
	%	73.7%	26.3%
Article sensationalized	Count	141	26
	%	84.4%	15.6%
Other subjective error	Count	148	19
	%	88.6%	11.4%
Numbers misleading	Count	149	18
	%	89.2%	10.8%
Quotes out of context	Count	150	17
	%	89.8%	10.2%
Article exaggerated	Count	150	17
	%	89.8%	10.2%
Not identified correctly	Count	153	14
	%	91.6%	8.4%
Article understated	Count	155	12
	%	92.8%	7.2%
References to race	Count	167	
	%	100.0%	

The involvement of a PR professional and perceived severity of subjective errors reported by the public health news source, as stated in RQ4<sub>b</sub>, were compared using an independent samples *t*-test. The mean severity of subjective errors when a PR professional was involved in the article was lower ( $M=3.47, n=43, SD=1.58$ ) than when a PR professional was not involved ( $M=3.63, n=41, SD=1.77$ ); however, the difference was not statistically significant ( $t=0.46, p=0.64, df=82, \eta^2=0.00$ ).

RQ5 examined what public health news sources consider to be the cause of errors in articles. Sources were given a list of 10 common reasons for errors in news stories, and asked to indicate whether they felt this reason was the cause of the errors reported. Of the

167 respondents, 56.3% indicated that there were no errors in the article in which they were quoted ( $n=94$ ), thus only the remaining 43.7% ( $n=73$ ) were able to speculate about the cause of the errors, and could choose more than one cause of errors. Within that group, 26.3% reported other reasons as a cause of the error ( $n=44$ ). When asked to list their other reasons, 15.9% felt that sensationalism led to errors ( $n=7$ ); while another 15.9% felt that space constraints led to errors ( $n=7$ ). An additional 11.4% noted that the reporter's failure to transcribe a direct quote as a cause of errors ( $n=5$ ).

Of the remaining causes of errors listed as options in the survey, public health news sources felt that a lack of understanding by the reporter was a frequent cause of errors, with 56.1% reporting this as the cause of the errors in their news article ( $n=41$ ). Deadline pressure (35.6%,  $n=26$ ) and events confusing (26%,  $n=19$ ) were also common reasons given for errors. A complete list is summarized in Table 6.

Table 6: Reasons for Errors

	No/NA		Yes	
	Count	%	Count	%
Reason: No errors	94	56.3%	73	43.7%
Reason: Other	123	73.7%	44	26.3%
Reason: Reporter didn't understand	126	75.4%	41	24.6%
Reason: Deadline pressure	141	84.4%	26	15.6%
Reason: Events confusing	148	88.6%	19	11.4%
Reason: Lack of research	149	89.2%	18	10.8%
Reason: Didn't ask enough questions	152	91.0%	15	9.0%
Reason: Laziness	153	91.6%	14	8.4%
Reason: Didn't ask right questions	155	92.8%	12	7.2%
Reason: Pressure to get 1st	161	96.4%	6	3.6%
Reason: Wrong info	167	100.0%		

RQ6 analyzed the effect of the method of gathering information on accuracy. First, the frequency of each news gathering method was calculated. A phone interview was the most common method, with 77.1% ( $n=128$ ) of the 167 respondents indicating that the information was gathered by phone. Gathering information by news release 25.1% ( $n=42$ ) and by in-person interview 24.0% ( $n=40$ ) were also common. Of the five respondents who indicated that the information for the article had been gathered by another method, three of those noted that information had been gathered by analyzing existing data. These results are summarized in Table 7.

Table 7: Method of Gathering Information

		No/NA	Yes
Gather: Phone interview	Count	38	128
	%	22.9%	77.1%
Gather: News release	Count	125	42
	%	74.9%	25.1%
Gather: In person interview	Count	127	40
	%	76.0%	24.0%
Gather: E-mail interview	Count	151	16
	%	90.4%	9.6%
Gather: Other	Count	164	3
	%	98.2%	1.8%

In addition, the responses about the news gathering method were compared with the total number of errors reported by the news source using an independent samples  $t$ -test. The results of this analysis are summarized in Table 8.

For the news gathering method of a news release, the mean number of errors was higher when a news release was used ( $M=2.48$ ,  $n=42$ ,  $SD=2.90$ ) than when one was not used ( $M=2.18$ ,  $n=125$ ,  $SD=2.68$ ); however, the difference was not statistically significant ( $t=-0.61$ ,  $p=0.54$ ;  $df$  167,  $\eta^2=0.00$ ).

For the news gathering method of a phone interview, the mean number of errors when a phone interview was used was lower ( $M=2.13$ ,  $n=128$ ,  $SD=2.60$ ) than when a phone interview was not used ( $M=2.71$ ,  $n=38$ ,  $SD=3.19$ ); however, the difference was not statistically significant ( $t=1.15$ ,  $p=0.24$ ,  $df=164$ ,  $\eta^2=0.01$ ).

For the news gathering method of an in-person interview, the mean number of errors when an in-person interview was used was higher ( $M=3.20$ ,  $n=40$ ,  $SD=3.26$ ) than when an in-person interview was not used ( $M=1.95$ ,  $n=127$ ,  $SD=2.49$ ). In this case, the  $p$ -value indicated a significant difference ( $t=-2.55$ ,  $p=0.02$ ,  $df=165$ ,  $\eta^2=0.04$ ).

For the news gathering method of an e-mail interview, the mean number of errors was higher when an e-mail interview was used ( $M=3.19$ ,  $n=16$ ,  $SD=3.31$ ) than when an e-mail interview was not used ( $M=2.15$ ,  $n=151$ ,  $SD=2.66$ ); however, the difference was not statistically significant ( $t=-1.44$ ,  $p=0.16$ ,  $df=165$ ,  $\eta^2=0.01$ ).

Finally, respondents were given a chance to indicate if the method of gathering the information for the article was different than those mentioned. Of the three who indicated other gathering methods, two indicated that the information was gathered by analyzing data and one indicated that he was not contacted for the story. Thus, for the news gathering method category of other, the mean number of errors when another method was used was higher ( $M=3.33$ ,  $n=3$ ,  $SD=4.93$ ) than when another method was not used ( $M=2.23$ ,  $n=164$ ,  $SD=2.70$ ); however the difference was not statistically significant ( $t= -0.69$ ,  $p= 0.48$ ,  $df=165$ ,  $\eta^2=0.03$ )

RQ7 looked at whether previous media experience had an association with accuracy. To answer this question, a correlation coefficient was calculated.  $R_s=0.04$ , indicating that as the number of previous interviews increased, so did the number of errors identified by

the source; however the difference was not statistically significant ( $p=0.60$ ), thus the data revealed no association between a source's previous media experience and accuracy.

## **DISCUSSION**

Since the role of public relations professionals in news accuracy has not been examined in previous research the method of analyzing the effect of PR involvement—an online survey on news accuracy and PR involvement—was a first attempt to measure the impact of PR professionals on public health news stories. While the majority of the results from this survey are not statistically significant, this area is worthy of further research, perhaps using alternate research methods.

It is clear that PR professionals are involved in news articles on public health with PR professionals having a role slightly more than half of the time. Given that the sample for this survey included only articles in major metropolitan newspapers, it seems that the public health news sources would have been more likely to have a PR professional on staff in a health department located in a major urban area or state, and that those PR professionals would have been involved in the facilitation of the news article. The rate of PR involvement for articles on topics other than public health is also an area for further study.

It is important to note that the overall accuracy rate for this study seems consistent with those found in the 16 previous newspaper accuracy studies outlined in Table 1. In this survey, a total of 36.5% of the news articles analyzed were considered accurate (no errors reported) by the sources. This is slightly lower than the average accuracy rate in the literature of 47.9%. The average number of errors per article found in this study, 2.25, is slightly lower than the average number of errors per article found, 2.58, in the comparable literature that calculated the rate of errors per article. The ability to double-



check factual information on the Internet may be responsible for the slight drop in errors per article in this study.

The reasons for the lack of accuracy in this study also match those found in the literature on newspaper accuracy. While the answer of “other” in this study was high (26.3% of respondents indicated that something not listed on the survey was the cause of the errors), the list provided in the survey (taken from Meyer, 2004) was not as comprehensive as it could have been. Reasons given by sources when prompted for other responses, such as sensationalism and space constraints are consistent with previous research (Pulford, 1976; Marshall, 1977). The fact that a lack of understanding of the subject was the most commonly cited reason for errors is also consistent with the fact that public health articles can involve complicated concepts that may be unfamiliar to the journalist—which would seem to necessitate the involvement of a PR professional in a boundary-spanning role.

It is interesting to note that none of the public health news sources reported that they were the cause of the error in the news article. Research by Berry (1967) and Marshall (1977) found that sources did admit that their incorrect information led to errors. In this survey, it could be that the high amount of previous media experience by the sources led them to feel that they had not directly contributed to the errors.

The results from this research about the media relations functions of PR professionals and their effect on accuracy are unclear as to whether or not PR professionals have an effect on news accuracy, since only one of the findings was statistically significant. The finding that was statistically significant—that the number of subjective errors increased when a PR professional attended or listened in on the news

interview—is concerning, since it is contrary to what one would expect. The concept of boundary spanning as outlined in the literature would indicate that PR professionals functioning in a boundary-spanning role would help translate the complicated information between the public health news source and the journalist. It would also logically follow that attending or listening in on a media interview would be the perfect opportunity for PR professionals to assert their boundary-spanning skills and correct any inaccuracies in the news article before they occurred in print. One issue of concern with the relationship between these variables could be the small group in which the conditions were present, as only 12.6% of sources indicated that PR professionals attended or listened in on a news interview. A larger sample size could address this issue more adequately, as could research in which the PR professional and journalist had the opportunity to comment on the level of facilitation and accuracy of the news article.

PR professionals arranging the logistics of the media interview was the most common media relations function used to facilitate communications between public health news sources and journalists. Although not significant, the number of errors in the news article appeared to increase when a PR professional arranged the logistics of the interview. Additional analysis of this trend, either with a survey of a larger sample size or an alternate research method, is needed to determine if the apparent increase in errors is truly related to the involvement of a PR professional.

While the remaining findings were not statistically significant, some media relations functions of PR professionals appeared to reduce the number of errors reported in this study. Future research may find a connection between the PR functions of providing information to the source and providing information to the journalist and the

impact of those two functions on accuracy. One area to measure is whether interview guidance from a PR professional, such as the preparation of talking points, makes the source practice for the interview ahead of time, and be better prepared when speaking to the reporter, thus reducing the number of errors. The data trend suggests there may be a slight difference in the number of subjective errors and objective errors found when PR professionals provide information to journalists, which merits further investigation as well. PR professionals often give factual information to reporters prior to the interview, such as the source's name and spelling, along with his/her title to the reporter. Yet, common subjective errors reported in this study—sensationalism the context of the quotes and the information chosen to be included in the article—are all elements of the article that may not be addressed by the PR professional.

Activity by a PR professional may have some impact on the number of errors in the news article, though the difference in this study was not statistically significant. Again, a larger sample or an alternate research method could better account for the relationship between these variables. Public health news sources also seem to understand that the PR professional can make an article more accurate, as suggested by survey results indicating a feeling that the involvement of a PR professional does make the story more accurate led to a lower mean number of errors.

When the frequency of the objective errors are analyzed, it is notable that “Other objective error” was the most common response, with 21.5% of respondents indicating another error ( $n=42$ ). This question were taken from a survey done by Meyer (2004), and could possibly have been expanded to include more categories of objective errors. Additionally, sources were not given the opportunity to list what they considered to be

other objective errors. This list may have indicated that sources were considering errors that were actually subjective (a list not read by the source at that point during the survey) as being objective. This theory seems to be supported by the fact that the number of sources indicating another subjective error was half as high (11.4%,  $n=19$ ).

The most common type of subjective error reported—information omitted—is consistent with previous literature on news accuracy, with 10 of the 16 studies listed in Table 1 reporting omission as a common error. Reports by sources in this study of quotes being distorted and the article being sensationalized are also consistent with the literature on news accuracy outlined in Table 1. Responses for “other subjective error” were higher than anticipated (11.4%,  $n=19$ ). As in the case of responses of “other subjective error,” reasons for responses of “other subjective error” could be sources getting the two categories confused and the lack of opportunity to write in what the source felt the other error was.

The impact of a PR professional on the source’s perceived severity of the errors in the news article is unclear based on the results from this study. It seems that a PR professional made the objective errors less severe in nature, but actually increased the severity of the subjective errors, yet the difference was not statistically significant. More questioning of the source and contact with the PR professional involved in the news article are possible ways to address this issue further.

When the news gathering methods were examined, a contradiction was noted when examining the method of gathering information face-to-face. Tichenor, Olien, Harrison, and Donahue (1970) found face-to-face to be the most accurate news gathering method, but this study showed that gathering information in person actually increased the

number of errors, and the difference was statistically significant. A reason for this could be that sources noting that the reporter attended an event or news conference were coded as face-to-face contact. In some instances, the reporter may have only participated in the event/news conference as a spectator, and did not directly question the source.

Phone interviews were found to be the most common method news gathering method. The fact that phone interviews are used frequently to gather information may indicate that it is easy for reporters to get a hold of public health news sources by phone. Prior research on news gathering methods, including Marshall (1977) showed that sources are accessible by phone. This is probably even more true now, with most public health agencies being accessible to the media via cell phone 24 hours a day, seven days a week. Gathering information by phone also seemed to decrease the number of errors, although the difference was not statistically significant. This could be because phone interviews allow the reporter and source to speak one-on-one, and the reporter can ask follow-up questions if needed. The ability to use follow-up questions in a phone interview could be a reason why e-mail lags behind in use for news gathering, despite growing more common for other media relations functions, such as issuing news releases.

The use of a news release in transferring information seems to have remained strong from the previous research on news accuracy by Berry (1967) and Marshall (1977) to this study on public health news accuracy. In both cases, news releases were found to be a more accurate method of sharing information between the source agency and the journalist. Yet, in this study, the mean number of errors appeared to increase when a news release was indicated as being a method used to gather information for the article, but the difference was not statistically significant.

Although speculative, the apparent increase in the number of errors reported for the other news gathering method seems consistent with the responses that sources gave when prompted as to what the other gathering methods were. Analysis of data and no contact with the reporter are almost opposite of the one-on-one interaction provided by phone interview. This lack of engagement could be a reason for additional errors.

The lack of association between the prior experience of the public health news source and the accuracy of the article is an area for further research. One possible reason for this is that inexperienced sources may be more careful and focused in media interviews; while experienced sources have past mistakes to learn from—both could increase accuracy. To investigate these relationships a bit further, additional analysis was conducted to look at the use of PR professionals by public health news sources. Cross tabulations for the involvement of a PR professional and the position of the public health news source (categorized in only two categories--Director/commissioner and other job title), did not show any association between the two variables ( $\chi^2=3.39$ ,  $df=4$ ,  $N=139$ ,  $p = 0.50$ ). While the survey allowed respondents to choose from six categories of positions, only two were used in this analysis, because seniority of position could only clearly be distinguished between the Director/commissioner category and the other remaining categories. An additional cross tabulation for the involvement of a PR professional and the number of previous interviews done by the public health news source also did not show any association between the two variables ( $\chi^2=4.00$ ,  $df=3$ ,  $N=165$ ,  $p = 0.26$ ). A variable that would be worth examining in future research is the level of experience of the PR professional, and how that is associated with accuracy rates.

## **Recommendations for future research**

The interaction between scientists and journalists, a subject of much of the literature on health and science journalism, is clearly one that is frequent in public health today at the state and local level. The fact that 75% of news sources responding to this survey had participated in 10 or more previous interviews shows that journalists often turn to public health officials for information. From this statistic, then, it would follow that the other observations reported by this study are worthy of further research and sharing of information.

Additional research on the impact of PR professionals on accuracy is necessary. The method used in this study, a survey on accuracy with additional questions about PR involvement, does not appear to be the best measure of the relationships between PR professionals, public health officials and reporters. The closed-ended questions on the survey do not appear to provide enough information to fully analyze the nuances of the interactions between PR professional, source and journalist.

Adding qualitative research to the original survey may provide more data for analysis. Previous research on news accuracy (Meyer, 1988; Reed, 2001; and Tillinghast, 1982) also utilized interviews with news sources and journalists to determine causes of inaccuracies and discrepancies in accuracy rates. This research method could be translated to public relations, by conducting surveys and/or interviews with both the news source and PR professional. Question in this research could probe the exact actions of the PR professional. For example, what types of information do PR professionals provide to journalists, and how is it gathered? Do news sources have the chance to review the news releases prior to distribution to ensure accuracy?

The duties and experience of the PR professional is also an area for future research. Questions, either by survey or interview, on the level of experience of the PR professional who worked on the article could provide insight into the effect of PR professionals on accuracy. The job duties of the PR professional could also explain PR's impact on accuracy. Does the PR professional provide media training to the news source, educating him on how to prevent errors in news stories? What percentage of the PR professional's time is allocated to media relations? The number of programs a PR professional is responsible for could also impact accuracy, as the PR professional could provide inaccurate information in a hurry or on a program with which she is not familiar. If 71% of the public follows coverage of health news in the newspaper, on television and on the radio, either very closely or somewhat closely (Pew Research, 2006), then an effort must be made to better understand the complex aspects of the process of transferring information from public health official to journalist to reader or viewer.



## REFERENCES

- Aldrich, H. & Herker, D. (1977). Boundary spanning roles and organizational structure. *Academy of Management Review*, 2(2), 217-230.
- Ankney, R.N. & Curtin, P.B. (2002). Delineating and delimiting the boundary spanning role of the medical public information officer. *Public Relations Review*, 28, 229-241.
- Ankney, R.N., Heilman, P. & Kolff, J. (1996). Newspaper coverage of the coronary bypass grafting report. *Science Communication*, 18(2), 153-164.
- Arkin, E.B. (1990). Opportunities for improving the nation's health through collaboration with the mass media. *Public Health Reports*, 105(3), 219-223.
- Bergen, L., Lafky, S., & Weaver, D. (2000). Local source opinions of their newspapers. *Newspaper Research Journal*, 21(3), 14-26.
- Berry, F. (1967). A study of accuracy in local news stories of three dailies. *Journalism Quarterly*, 44, 482-490.
- Blankenburg, W.B. (1970). News accuracy: Some findings on the meaning of errors. *The Journal of Communications*, 20, 375-388.
- Brown, C.H. (1965). Majority of readers give papers an A for accuracy. *Editor and Publisher*, 98(7), 13.
- Cameron, G.T., Sallot, L.M. & Curtin, P.T. (1997). Public relations and the production of news. *Communication Yearbook*, 20, 111-155.
- Campion, E.W. (2004). Medical research and the news media. *New England Journal of Medicine*, 351(23), 2436-2437.
- CDC estimates 94,000 invasive drug-resistant staph infections occurred in the U.S. in 2005. Centers for Disease Control and Prevention Press Release. <http://www.cdc.gov/od/oc/media/pressrel/2007/r071016.htm>. Accessed: January 10, 2008.
- Charnley, M.V. (1936). Preliminary notes on a study of newspaper accuracy. *Journalism Quarterly*, 13, 394-401.
- Conrad, P. (1999). Uses of expertise: Sources, quotes, and voice in the reporting of genetics in the news. *Public Understanding of Science*, 8, 285-302.
- Cook, C., Heath, F. & Thompson, R.L. (2000). A meta-analysis of response rates in Web or Internet-based surveys. *Educational and Psychological Measurement*, 60, 821-836.

- Corbett, J.B. & Mori, M. (1999). Medicine, media and celebrities: News coverage of breast cancer, 1960-1995. *Journalism and Mass Communication Quarterly*, 76(2), 229-249.
- Cote, J.R. (1970). A study of accuracy of two wire services. *Journalism Quarterly*, 47, 661-666.
- Crisp, D.W. (1986). Scientists and the local press. In S.M. Friedman, S. Dunwoody, & C.L. Rogers (Eds.), *Scientists and Journalists* (pp. 73-80). New York: The Free Press.
- Cutlip, S.M., Center, A.H., & Broom, G.M. (2006). *Effective public relations*. Upper Saddle River New Jersey: Pearson, Prentice Hall.
- deSemir, V. (1996), Medicine and the media: What is newsworthy? *The Lancet*, 347, 1163-1166.
- DiBella, S.M., Ferri, A.J. & Padderud, A.B. (1991). Scientists' reasons for consenting to mass media interviews: A national survey. *Journalism Quarterly*, 68(4), 740-749.
- Dunwoody, S. & Ryan, M. (1983). Public information persons as mediators between scientists and journalists. *Journalism Quarterly*, 60(4), 647-656.
- Dunwoody, S. & Ryan, M. (1985). Scientific barriers to the popularization of science in the mass media. *Journal of Communication*, 35, 26-42.
- Dunwoody, S. & Scott, B.T. (1982). Scientists as mass media sources. *Journalism Quarterly*, 60(1), 52-59.
- Dunwoody, S. (1986). The scientists as source. In S.M. Friedman, S. Dunwoody, & C.L. Rogers (Eds.), *Scientists and Journalists* (pp. 3-16). New York: The Free Press.
- Friedman, R.A., & Podolny, J. (1992). Differentiation of boundary spanning roles: Labor negotiations and implications for role conflict. *Administrative Science Quarterly*, 37(1), 28-48.
- Gallup/CNN/USA Today (1998, July). Public opinion poll. USGALLUP.98JL13.RO4AX. Retrieved October 7, 2007 from iPoll.
- Gascoigne, T & Metcalfe, J. (1997). Incentives and impediments to scientists communicating through the media. *Science Communication*, 18, 265-282.
- Gellert, G.A., Higgins, K.V., Lowery, R.M. & Maxwell, R.M. (1994). A national survey of public health officers' interactions with the media. *JAMA*, 271(6), 1285-1289.
- Goodfield, J. (1981). *Reflections on science and the media*. Washington, DC: American Association for the Advancement of Science.

- Grunig, L.A. (1992). Power in the public relations department. In J.E. Grunig & D.M. Dozier (Ed.), *Excellence in Public Relations and Communications Management* (pp. 483-501). Hillsdale, NJ: Erlbaum Associates.
- Gunter, B., Kinderlerrer, J. & Beyleveld, D. (1999). The media and public understanding of biotechnology: A survey of scientists and journalists. *Science Communication*, 20, 373-394.
- Jemison, D.B. (1984). The importance of boundary spanning roles in strategic decision making. *Journal of Management Studies*, 21(2), 131-152.
- Kocher, D.J., & Shaw, E.F. (1981). Newspaper inaccuracies and reader perception of bias. *Journalism Quarterly*, 58(3), 471-516.
- Kovach, B. & Rosenthal, T. (2001). *The elements of journalism*. New York: Crown Publishers.
- Larsson, A., Oxman, A.D., Carling, C. & Herrin, J. (2003). Medical messages in the media—barriers and solutions to improving medical journalism. *Health Expectations*, 6, 323-331.
- Lawrence, G. & Grey, D. (1969). Subjective inaccuracies in local news reporting. *Journalism Quarterly*, 44, 753-757.
- Leifer, R. & Delbecq, A. (1978). Organizational/environmental interchange: A model of boundary spanning activity. *Academy of Management Journal*, 3(1), 40-50.
- Liang, A.P., Renard, P.G., Robinson, C. & Richards, T.B. (1993). Survey of leadership skills needed for state and territorial health officers, United States, 1988. *Public Health Reports*, 106(1), 120.
- Maier, S. (2002). Getting it right? Not in 59 percent of stories. *Newspaper Research Journal*, 23(1), 10-24.
- Maier, S. (2005a). Accuracy matters: A cross-market assessment of newspaper error and credibility. *Journalism and Mass Communication Quarterly*, 82(3), 533-551.
- Maier, S. (2005b). Comparing internet vs. paper in newspaper source surveys. *Newspaper Research Journal*, 26(2&3), 57-71.
- Marshall, H. (1977). Newspaper accuracy in Tucson. *Newspaper Research Journal*, 26(2/3), 57-71.
- Meyer, P. (1988). A workable measure of auditing accuracy in newspapers. *Newspaper Research Journal*, 10(1), 39-51.
- Meyer, P. (2004). *The vanishing newspaper*. Columbia, Mo.: University of Missouri Press.

- Nelkin, D. (1991). AIDS and the news media. *The Millbank Quarterly*, 69(2), 293-307.
- Nelkin, D. (1995), *Selling science: How the press covers science and technology*. New York: W.H. Freeman and Company.
- October 16, 2007, This Week's Content. JAMA and Archives for the Media (2007). <http://pubs.ama-assn.org/media/2007j/1016.dtl#1>. Accessed: January 10, 2008.
- Peters, H.P. (1995). The interaction of journalists and scientific experts: Co-operation and conflict between two professional cultures. *Media, Culture and Society*, 17, 31-48.
- Pew Research Center for People and the Press (2006, April). Biennial media consumption survey. USPSRA.073006.R55KF1. Retrieved October 7, 2007 from iPoll.
- Pew Research Center for People and the Press (2006). The State of the News Media 2006.. <http://www.stateofthemedias.org/2006>. Accessed: October 16, 2007.
- Pew Research Center for People and the Press (2007). Public Tunes Out Ellen DeGeneres Controversy. <http://people-press.org/reports/display.php3?ReportID=365>. Accessed: January 10, 2008.
- Pulford, P.L. (1976). Follow-up study of science news accuracy. *Journalism Quarterly*, 53, 119-121.
- Reed, R. (2001), (Un)professional discourse? Journalists and scientists' stories about science in the media. *Journalism*, 2(3), 279-298.
- Rogers, C.L. (1986). The Practitioner in the middle. In Friedman, S.M, Dunwoody, S. & Rogers, C.L. (Ed.). *Scientists and Journalists* (pp. 42-54). New York: The Free Press.
- Ryan, M. & Owen, D. (1977), An accuracy survey of metropolitan newspaper coverage of social issues. *Journalism Quarterly*, 54, 27-32.
- Schuchman, M. & Wilkes, M.S. (1997). Medical scientists and health news reporting: A case of miscommunication. *Annals of Internal Medicine*, 126(2), 976-982.
- Schwab, R.C., Ungson, G.R., & Brown, W.B. (1985). Refining the boundary-spanning relationship. *Journal of Management*, 11(1), 75-86.
- Springston, J.K. & Lariscy, R.A.W. (2005). Public relations effectiveness in public health institutions. *Journal of Health and Human Services Administration*, 28(1/2), 218-245.
- Springston, J.K. & Leichty, G. (1994). Boundary spanning activities in public relations. *Journalism Quarterly*, 71(3), 697-708.
- Stryker, J.E. (2002). Reporting medical information: Effects of press releases and newsworthiness on medical journal articles' visibility in the news media. *Preventive Medicine*, 35, 519-530.

- Tankard, J. & Ryan, M. (1974). News source perceptions of accuracy in science coverage. *Journalism Quarterly*, 51, 219-225.
- Tankard, J.W. & Ryan, M. (1982). Untangling the numbers: Journalists *can* cope with complex research, *Newspaper Research Journal*, 3, 61-69.
- Tichenor, P.J., Olien, C.N., Harrison, A. & Donohue, G. (1970). Mass communication systems and communication accuracy in science news reporting. *Journalism Quarterly*, 47, 673-683.
- Tillinghast, W.A. (1982). Newspaper errors: Reporters dispute most claims. *Newspaper Research Journal*, 3(4), 15-23.
- Tillinghast, W.A. (1983). Source control and evaluation of newspaper inaccuracies. *Newspaper Research Journal*, 5(1), 13-24.
- Top 100 Newspapers in the United States. (March 31, 2006). Retrieved December 4, 2007, from <http://www.infoplease.com/ipea/A0004420.html>
- Trachtman, L.E. (1981). The public understanding of science effort: A critique. *Science, Technology and Human Values*, 6 (36), 10-15.
- Tushman, M.L. & Scanlon, T.J. (1981). Boundary spanning individuals: Their role in information transfer and their antecedents. *The Academy of Management Journal*, 24(2), 289-305.
- Urban, C. (1999). Examining Our Credibility: Perspectives of the Public and the Press. <http://www.asne.org/index.cfm?id=2632>. Accessed: November 28, 2007.
- Valenti, J.M. (1999). Commentary: How well do scientists communicate to the media? *Science Communication*, 21(2), 172-178.
- White, J. & Dozier, D.M. (1992). Public relations and management decision making. In J.E. Grunig (Ed.), *Excellence in Public Relations and Communications Management* (pp. 91-108). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Wilkes, M.S. & Kravitz, R.L. (1992). Medical researchers and the media: Attitudes towards public dissemination of research. *JAMA*, 268, 999-1003.
- Wimmer, R.D. & Dominick, J.R. (2006). *Mass media research: An introduction*. Belmont, Cal., Thomson Wadsworth.
- Winsten, J.A. (1985). Science and the media: The boundaries of truth. *Health Affairs*, 4(1), 5-23.
- Wise, K. (2001). Opportunities for public relations research in public health. *Public Relations Review*, 27, 475-487.

Wise, K. (2002). Linking public relations process and organizational effectiveness at a state health department. *Journal of Health and Human Services Administration*, 25(3/4), 497-525.

Wyatt, R.O., Smith, S.S. & Andsager, J.L. (1996). Spanning the boundaries: Support for media rights among public relations practitioners, journalists and the public. *Journal of Public Relations Research*, 8(2), 123-135.

## **Appendix A: Survey**

You are invited to be in a research study regarding accuracy in newspaper articles about state and local health departments. You were selected as a possible participant because you were quoted as a source in a recent newspaper article. Please read the following statements carefully before agreeing to be in the study.

This study is being conducted by: *Emily Gresham*, a student at the University of Missouri.

### **Background Information:**

The purpose of this study is to examine accuracy in newspaper articles.

### **Procedures:**

If you agree to be in this study, we would ask you to do the following:

1. Complete this survey

### **Risks and Benefits of Being in the Study:**

The risk to participating in this study is that you will be filling out a paper survey or participating in an online survey, are susceptible to the same risks involved in computer use or periods of writing lasting between 20 and 30 minutes.

The benefit is the opportunity to take part in an academic interaction regarding the accuracy of newspaper articles.

### **Confidentiality:**

The records of this study will be kept private. In any report we might publish, we will not include any information that will make it possible to identify an individual or a specific newspaper. Research records will be kept on a secure computer and only researchers will have access to the records.

### **Voluntary Nature of the Study:**

Your decision whether or not to participate will not affect your current or future relations with the University of Missouri or the School of Journalism. If you decide to participate, you are free to withdraw at any time without affecting those relationships.

### **Contacts and Questions:**

The principal researcher conducting this study is *Emily Gresham*. Emily is available to answer any further questions. You may contact her at (513) 305-1776.

If you have any questions or concerns regarding the study and would like to talk to someone other than the researcher(s), contact MU Campus Institutional Review Board located in 483 McReynolds Hall, phone number (573) 882-9585.

**Statement of Consent:**

I understand the above information. I have asked questions and have received answers. By typing my name and the date below, I am stating that I am at least 18 years of age, and that I consent to participate in the study.

---

Name

---

Date



## Newspaper Accuracy Survey

1. Sometimes news stories contain information that is wrong, such as names, addresses, and titles. The following is a list of different types of factual errors that can occur in a news article. For each item on the list, please circle No if the error did not occur. If it did occur, circle Yes.

***Type of Error***

The headline was inaccurate	No	Yes
Numbers wrong	No	Yes
My name was misspelled	No	Yes
Other spelling/typographical error	No	Yes
Job title wrong	No	Yes
Address wrong	No	Yes
Age wrong	No	Yes
Location of the event wrong	No	Yes
Time of the event wrong	No	Yes
Date of the event wrong	No	Yes
Quotes wrong	No	Yes
Other factual error	No	Yes

2. If you answered No to all of the items in question 1, please skip to question 3. If you answered Yes to one or more items in question 1, please circle the number that corresponds to the severity of the error—with 1 standing for a minor error and 7 for a major error—for all of the errors that you circled Yes for in question 1.

***Severity of error***

***Minor***

1            2            3            4            5            6            ***Major*** 7

3. Sometimes news stories contain information that is technically correct but misleading, or give the wrong impression. Following is a list of different ways that a news article can mislead. For each item, please circle no if the problem did not occur. If it did occur, circle yes.

***Type of Error***

Essential information omitted	No	Yes
My quotes distorted or out of context	No	Yes
Interviews with others out of context	No	Yes
I was not identified the way I want to be identified	No	Yes
Numbers in the article were misleading/misinterpreted	No	Yes
There were gratuitous references to my race or appearance	No	Yes
The article was exaggerated	No	Yes
The article was sensationalized	No	Yes
The article was understated	No	Yes
Other	No	Yes

4. If you answered No to all of the items in question 3, please skip to question 5. If you answered Yes to one or more items in question 3, please circle the number that corresponds to the severity of the error—with 1 standing for a minor error and 7 for a major error—for all of the errors that you circled Yes for in question 2.

***Severity of error***

***Minor***

1            2            3            4            5            6

***Major***

7

5. Please respond to the following statement: “Overall, I think the news article provided had quite a number of errors.”

Agree

Disagree

6. If errors were made, why do you think they happened? From the list below, *please place a check mark* beside every reason for errors that you think may apply to the article we identified.
- No errors
  - Laziness on the part of the news staff
  - Pressure to get the article done on time
  - Reporter didn't fully understand the article
  - Events surrounding the article were confusing
  - Pressure to get the article before other media got it
  - Not enough research
  - Reporter didn't ask the right questions
  - Reporter didn't ask enough questions
  - I gave the reporter wrong information
  - Other (please specify) \_\_\_\_\_
7. How was the information for your/your organization's part of the article gathered by the reporter? Please check all that apply.
- News release
  - Telephone interview
  - In-person interview
  - E-mail interview
  - Other (please specify) \_\_\_\_\_
8. Have you been interviewed for a news article before?
- No             1-3 times             4-9 times             10 or more times
9. In the context of this news article, which category best describes your organization:
- Local health department
  - State health department
  - Other
10. In the context of this news article, which category **best** describes your position within your organization? *Please select only one category.*
- Director/Commissioner
  - Epidemiologist/Communicable disease specialist
  - Health educator
  - Environmentalist
  - Public relations professional/spokesperson (please skip to question 16)
  - Other: \_\_\_\_\_



17. How much formal education do you have?

- Some high school or less
- High school diploma
- Some college
- College degree
- Some graduate study
- Graduate degree

## **Appendix B: Contact with Sources**

E-mail to source:

Subject: Research study on news accuracy

I am conducting an online survey as part of my graduate studies at the University of Missouri. The survey will look at the accuracy of newspaper articles about state and local health departments. The survey will take about 20 to 25 minutes. You will be asked to answer questions regarding the recent news article in which you were quoted, which I have included below.

I would very much appreciate your participation in this survey. All answers will be confidential, and your responses will not be identified by name.

Your participation in the survey is voluntary, and you may stop at any time.

To access the survey, please click on the following link:

(LINK TO GO HERE, WITH ARTICLE BELOW )

E-mail to Webmaster:

Subject: Research study on news accuracy

I am conducting an online survey on behalf of the University of Missouri's School of Journalism. The survey will look at the accuracy of newspaper articles about state and local health departments.

NAME from your organization was recently quoted in a news article, and I would like to contact HIM/HER about the accuracy of the article in which HE/SHE participated.

Would you be able to provide me with an e-mail address for NAME?

Follow-up e-mail #1:

Subject: Research study on news accuracy

On DATE, I sent you information, in the e-mail below, about an online survey to look at the accuracy of newspaper articles about state and local health departments. My records show that you have not yet completed the survey.

I would very much appreciate your participation in this survey. You will be asked to answer questions regarding the recent news article in which you were quoted, and it should take less than 20 minutes to complete.

To access the survey, please click on the following link:

(LINK TO GO HERE, WITH ORIGINAL E-MAIL AND ARTICLE BELOW)

Follow-up e-mail #2:

Subject: MASTER’S THESIS HELP—Request for Participation in News Accuracy Study

The reporter’s byline was on the story, but it was your name to which the public health information was attributed. Did the reporter get it right? Let me know and help me complete my master’s thesis.

I am asking news sources like yourself to share your experience as a news source by completing an online survey about the accuracy of news stories about state and local health departments.

My records show that you have not yet completed the survey, and I would sure appreciate your participation. The survey will take about 10 minutes to complete, and will focus on the news story in which you were recently quoted.

Any information you provide will be confidential, and your responses will not be identified by name in the final written thesis. Your participation in the survey is voluntary, and you may stop at any time.

To access the survey, please click on the following link:

(LINK TO SURVEY HERE)

Thank you in advance for your time.

(ORIGINAL E-MAIL AND ARTICLE BELOW)

## Appendix C: Newspapers Sampled

<i>Albuquerque Journal</i>
<i>Arkansas Democrat-Gazette</i>
<i>Atlanta Journal-Constitution</i>
<i>Austin American Statesman</i>
<i>Baltimore Sun</i>
<i>Birmingham News</i>
<i>Boston Globe</i>
<i>Boston Herald</i>
<i>Buffalo News</i>
<i>Columbus Dispatch</i>
<i>Contra Costa Times</i>
<i>Daily News (Los Angeles)</i>
<i>Daily News (New York)</i>
<i>Dayton Daily News</i>
<i>Denver Post</i>
<i>Deseret News</i>
<i>Florida Times-Union</i>
<i>Fort Wayne News-Sentinel</i>
<i>Fresno Bee</i>
<i>Grand Rapids Press</i>
<i>Hartford Courant</i>
<i>Houston Chronicle</i>
<i>Investors Business Daily</i>
<i>LA Times</i>
<i>Milwaukee Journal Sentinel</i>
<i>Morning Call (Allentown)</i>
<i>New York Post</i>
<i>New York Times</i>
<i>News &amp; Observer (Raleigh)</i>
<i>News Tribune (Tacoma)</i>
<i>Newsday</i>
<i>Omaha World-Herald</i>
<i>Orange County Publications</i>
<i>Oregonian</i>

<i>Palm Beach Post</i>
<i>Patriot-News (Harrisburg)</i>
<i>Philadelphia Daily News</i>
<i>Philadelphia Inquirer</i>
<i>Pittsburgh Post-Gazette</i>
<i>Pittsburgh Tribune-Review</i>
<i>Plain Dealer</i>
<i>Post-Standard (Syracuse)</i>
<i>Press-Enterprise (Riverside)</i>
<i>Providence Journal</i>
<i>Record (Bergen County)</i>
<i>Richmond Times-Dispatch</i>
<i>Sacramento Bee</i>
<i>Salt Lake Tribune</i>
<i>San Antonio Express-News</i>
<i>San Diego Union-Tribune</i>
<i>San Francisco Chronicle</i>
<i>Las Vegas Review-Journal</i>
<i>San Jose Mercury News</i>
<i>Sarasota Herald-Tribune</i>
<i>Seattle Post-Intelligencer</i>
<i>Seattle Times</i>
<i>Spokesman-Review (Spokane, Wash.)</i>
<i>Springfield Republican</i>
<i>St. Louis Post-Dispatch</i>
<i>St. Paul Pioneer Press</i>
<i>St. Petersburg Times</i>
<i>Star Tribune (Minneapolis)</i>
<i>Star-Ledger (Newark, N.J.)</i>
<i>Tampa Tribune</i>
<i>Times Union (Albany)</i>
<i>USA Today</i>
<i>Virginian-Pilot</i>
<i>Washington Post</i>
<i>Wisconsin State Journal</i>