Testing the Effect of Framing and Sourcing in Health News Stories

3 authors:

Renita Coleman
University of Texas at Austin
64 PUBLICATIONS **1,411** CITATIONS

SEE PROFILE

Esther Thorson
Michigan State University
171 PUBLICATIONS **5,852** CITATIONS

SEE PROFILE

Lee Wilkins
Wayne State University
58 PUBLICATIONS **1,029** CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:

Project Political communications View project

Project Designing Experiments for the Social Sciences View project

Testing the Effect of Framing and Sourcing in Health News Stories

RENITA COLEMAN, ESTHER THORSON, AND LEE WILKINS

QUERY SHEET

This page lists questions we have about your paper. The numbers displayed at left can be found in the text of the paper for reference. In addition, please review your paper as a whole for correctness.

Q1: Au: Please provide a complete reference entry for "Sherman, Mann, & Updegraff, 2006" or remove its in-text citation.
Q2: Au: Please note that anonymous reviewers should not be acknowledged, so the second footnote was deleted.
Q3: Au: Please cite "Campos-Outcalt, D. (2004)" in the text or remove its reference entry.
Q4: Au: Please spell out "AEJMC."
Q5: Au: Please cite "Rest, J. R. (1993)" in the text or remove its reference entry.
Q6: Au: Please cite "Signorielli, N. (1993)" in the text or remove its reference entry.

TABLE OF CONTENTS LISTING

The table of contents for the journal will list your paper exactly as it appears below:

Testing the Effect of Framing and Sourcing in Health News Stories

RENITA COLEMAN

School of Journalism, University of Texas–Austin, Austin, Texas, USA

ESTHER THORSON AND LEE WILKINS   5

School of Journalism, University of Missouri–Columbia, Columbia, Missouri, USA

This study examines whether changing the way news stories report on health can induce shifts in readers' perceptions of problems of obesity, diabetes, immigrant health, and smoking. The authors manipulated two variables in a controlled experi- 10 *ment: the quality of sourcing—the number of sources and their expertise—and the framing—changing from an episodic, traditional frame to a thematic frame that incorporated information on context, risk factors, prevention strategies, and social attributions of responsibility. The authors found that a thematic frame made readers more supportive of public policy changes and encouraged them to improve their own* 15 *health behaviors. However, it did not alter their attributions of responsibility for health problems from one of blaming individuals to seeing the larger social factors. Adding richer sourcing to the thematic frame did not increase these effects, nor did readers find the thematic stories to be more interesting, relevant, believable, impor-* *tant, and informative. In addition, there were differential results because of story* 20 *topics that represent uncontrolled effects. The implications for improving health reporting to encourage positive change in society are discussed.*

For most people, the news media are their most important and consistent health information source (Schwitzer et al., 2005). When it comes to increasing awareness 25 and knowledge of health issues, news media are possibly even more important than interpersonal communication (Fishman, 2006).

Public health experts are not always satisfied with the way the media report health news. The focus on individuals and anecdotes at the expense of context and societal contributions to disease gives people a distorted view of the problem, they 30 say. Campaigns to change the way the media report health stories to reflect a "public health model of reporting"[1] are under way (Dorfman, Wallack, & Woodruff, 2005; Higgins, Naylor, Berry, O'Connor, & McLean, 2006; McManus & Dorfman, 2005),

---

[1]We use the term *public health model of reporting* in accordance with the definition of this approach used by its framers, Lori Dorfman and Jane Stevens. This may not be the most pre-cise term for a public health audience, but it is the terminology recognized by journalists as referring to inclusion of societally focused factors in health reporting.

and is being taught by schools and fellowships such as the University of Southern California Health Journalism Fellowships Program. However, no research has been done to determine whether these new reporting methods affect audiences the way public health experts hope. No empirical evidence exists to support the desired effects of this model of reporting health stories. The purpose of this research is to determine whether rich sourcing and thematic framing—two hallmarks of the public health model of reporting—affect audiences' perceptions of health issues in the way that public health experts intend.

Literature Review

The *public health model* is defined as an approach that sees the causes of death and injury as preventable rather than inevitable. By studying the interaction among the victims, the agent, and the environment, this approach seeks to define risk factors, then develop and evaluate methods to prevent problems that threaten public health. The goal of the model is to alter the basic conditions in society that give rise to and sustain such problems (Mercy, Rosenberg, Powell, Broone, & Roper, 1993). Although developed for use with stories of crime and violence, the public health model of reporting also has been adopted for use with stories of traditional health problems such as cancer and obesity (Hatley-Major, 2009), heart disease (Kim, Kumanyika, Shive, Igweatu, & Kim, 2010), and diabetes (Gollust & Lantz, 2009).

Framing Theory

One prominent theoretical basis for the public health model of reporting is framing theory. Events are "framed" or given a field of meaning within which they can be understood (Severin & Tankard, 1992). This theory implies that cues learned from the media also can be used to make sense of our experiences and social situation (Baran & Davis, 1995). The frames that the media use in stories help define problems and call attention to some things while obscuring others (Entman, 1993). According to Entman, frames have at least four functions: to define problems, diagnose causes, make moral judgments, and suggest remedies. The public health model of reporting seeks to alter the frame of a health story by focusing on causes of disease, risk factors, and prevention strategies. Using Entman's four functions, public health-framed stories would define problems as caused by social factors in addition to individual ones; change moral judgments to focus on society and individuals, and offer additional remedies such as changes to public policies in addition to actions by individuals.

Thematic vs. Episodic Framing

The framing work of Iyengar (1991) bears the most resemblance to the framing goals of the public health model of reporting in that both focus on shifting attention to who is responsible for causing and treating health problems. Iyengar studied how framing news influenced whom people blamed for problems and found that television news stories on crime framed a certain way that he termed "episodic" led people to attribute responsibility to individuals, but that crime stories framed differently, which he called "thematic" led people to attribute responsibility more to societal causes. His definition of thematic coverage has many commonalities with

the type of reporting advocated by the public health model. Thematic coverage is associated with increased societal attributions while episodic coverage—the kind employed by most news stories—is related to increased attributions of individualistic causal responsibility as well as punitive treatment. Iyengar's work has been repli- 80 cated with newspaper health stories, with thematically framed stories leading to more societal attributions and episodically frames stories leading to individual attributions (Hatley-Major, 2009). Whether health coverage is thematic or episodic matters because if people attribute some blame for health problems to society, they are more likely to support changes in public policies, laws, regulations, prices, product 85 standards and institutional practices (Chapman, 2001), which is necessary to fully address a health problem. However intuitive this sounds, no research has been done to determine whether this shift in responsibility actually occurs in audiences who read health stories written in this style. Nor has research been done to determine whether thematic or episodic message framing affects people's intentions to change 90 their own health behaviors. This has been studied in the context of message framing, but under the rubric of gain/loss framing rather than Iyengar's episodic/thematic framing (Sherman, Mann, & Updegraff, 2006). This study explores whether beha-

Q1 vioral intentions also are affected by this type of message framing.

An example of health reporting that includes contextual, thematic information 95 would be stories on obesity and obesity-related diseases that include information on research that shows less affluent neighborhoods where obesity rates are higher have fewer options for healthy foods. Using the public health model of reporting, a journalist would explain that grocery stores in these areas are less likely to sell fresh fruits and vegetables compared to stores in more affluent neighborhoods (California 100 Center for Public Health Advocacy, 2008). It would also explain that poorer neighborhoods are more likely to have fast food restaurants as opposed to wealthier areas (California Center for Public Health Advocacy). In addition, the story might explain that poorer neighborhoods have fewer places to exercise and that safety is a concern for those who seek outdoor exercise for themselves and their children. Explained this 105 way, it is clear that the problem involves the underlying conditions of limited access to exercise, availability of healthier foods, and socioeconomics rather than simply individual responsibility and choice. Incorporating this contextual information would help readers see that obesity also has underlying social causes and that individuals struggling with obesity are not just lazy or unwilling to eat less or 110 exercise more.

Evidence shows that public health issues are rarely described thematically in news stories (Chavez & Dorfman, 1996; Dorfman & Schiraldi, 2001; Dorfman & Wallack, 1998; Dorfman et al., 2005; Lawrence, 2004; McManus & Dorfman, 2005; Woodruff, Dorfman, Berends, & Agron, 2003), although some change has 115 begun to appear on the topic of obesity (Kim & Willis, 2007). Primarily, the episodic and individual-centered reporting on health issues that currently exist influence people to think about health problems as something that only individuals are responsible for and capable of changing; they do not emphasize the social factors that contribute to disease, or the policy changes that could help lower the incidence of 120 disease.

There is evidence that people's perceptions of risk are subject to large and systematic biases. These misconceptions undoubtedly influence the way that people think about and respond to hazards in their personal lives.

Such biases may misdirect the actions of public interest groups and   125
government agencies, resulting in less than optimal control of risk.
(Combs & Slovic, 1978, pp. 837–838).

Thus it is important to learn whether changing the way the media report on
health issues to a public health model can actually change people's perceptions. If
it is the case that a public health approach to news stories can bring about positive   130
attitude change, then the media may play an important role in altering the conditions
in society that give rise to disease. If it is not, then efforts should be focused
elsewhere.

On the basis of the foregoing, this study makes three predictions regarding
stories framed according to the public health model: 135

Hypothesis 1: Because the public health model of reporting gives readers
more societal information, readers who see public health
stories will attribute more responsibility for health pro-   140
blems to society than readers of traditional stories.
Hypothesis 2: Because the public health model of reporting gives readers
more societal information, readers who see public health
stories will endorse public policy changes more than read-   145
ers of traditional stories.
Hypothesis 3: Because the public health stories frame health problems as
being preventable and offer suggestions for prevention,
readers of public health stories will report greater inten- 150
tions to change their own health behaviors than readers
of traditional stories.

We also ask one research question regarding how much readers like the public
health stories: 155

Research Question 1: Will readers find public health stories more
interesting, relevant, believable, important, and
informative than traditional stories?   160

Sourcing Research

Examination of sourcing patterns goes hand-in-hand with framing analysis (Kim &
Weaver, 2003). It has long been acknowledged that those who provide information
are a major influence on how people view issues (Cohen, 1963). Journalists rely on   165
sources for interpretation, and many argue that journalists frame their coverage via
the sources they use (Kim & Weaver). Research on sourcing patterns has mostly
focused on elite versus ordinary people as sources. However, some work in science
reporting has shown that a greater quantity of sources and experts such as scientists,
research reports, and health professionals (Ramsey, 1999) lend greater credibility to   170
news stories than do fewer sources and sources that included celebrities or non–
health-related sources (Hatley-Major & Coleman, 2006). There is also evidence that
competent or expert sources without a vested interest in the information are more
credible (Salwen, 1992). Outside of experts as sources, there is some evidence that

people who have personal experience with the disease also make credible sources that can lead people to change their own health behaviors (Frisby, 2006). Furthermore, "ordinary people" are frequently sourced in traditional health stories as are medical personnel and other authorities (Brannstrom & Lindblad, 1994; Mercado-Martinez, Robles-Silva, Moreno-Leal, & Franco-Almazan, 2001). This research uses the term *rich sourcing* to describe stories with more sources and higher quality sources, and *poor sourcing* to describe the opposite.

These ideas are encouraging for public health advocates who wish to change the way journalists routinely report on health issues. However, most research has shown that the media have not routinely included greater numbers of expert sources in their reports (Dorfman, Woodruff, Chavez, & Wallack, 1997; Stevens, 1998), and almost none has looked at whether these changes have the kinds of effects on audiences that the researchers and experts hope for.

Main effects of sourcing were predicted for all dependent variables and were tested along with main effects of framing in Hypotheses 1 through 3. In addition, this research predicts an interaction effect between the public health/rich sourcing combination of stories, controlling for demographics and other variables:

Hypothesis 4: The combination of public health framing and rich sourcing will be more significant than the other combinations on societal attribution of responsibility, public policy endorsement, and behavioral intentions.

Method

A between-subjects experiment using a 2×2 factorial design was used to test whether public health framing and rich sourcing had a causal effect on peoples' attitudes toward health problems. The first factor was framing (public health/traditional); the second factor was sourcing (rich/poor). The repetition factor was four health topics (obesity, diabetes, immigrant health, smoking). Participants received all four stories in one condition (public health/rich, public health/poor, traditional/rich, traditional/poor).

Manipulation Check

We first performed a manipulation check to establish that readers could in fact distinguish between the rich and poor sourcing stories and between the traditional and public health framed stories. The sourcing questions asked readers to use a 5-point Likert-type scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*) to determine whether there were more than three sources in the stories, and if the sources were experts, credible, believable, and trustworthy. The mean scores of 15 participants who saw the rich source versions were higher for all questions than the mean scores of 15 participants who saw the poor source versions. The total number of 30 was too small to assess statistical significance, but the means were all higher for the rich source versions, signaling that readers did indeed agree that there were more and better sources in those stories. Those 30 manipulation check participants also answered questions on the same 5-point Likert-type scale about whether the stories emphasized social causes, provided statistics and factual information, included context, risk

factors and consequences, and offered prevention strategies. One question was
reverse coded that asked whether the stories highlighted individual responsibility
more than social factors. Mean scores were all in the direction predicted, indicating
that readers did indeed detect more public health information in the public health
framed stories.   225

Participants

A total of 136 participants were randomly assigned to the treatment or control
group. Approximately 60% of the participants were students from a large
Southwestern university and the other 40% were adults drawn from the community
by contacting various social groups and organizations whose meetings were   230
announced online and in newspapers. The average age was 24 years. Sixty-eight
percent were female. Individual group sizes ranged from 31 to 37. Each group
was exposed to one of four versions of a mock news story containing stories about
four health issues.

Stimulus Materials   235

Four health news stories on the topics of diabetes, smoking, obesity, and immigrant
health were selected from the LexisNexis database. Using real news stories contrib-
uted to the validity and credibility of the stimulus. The stories were re-written and
edited by a former newspaper journalist.

Four versions of each story were constructed; the versions that represented tra- 240
ditional reporting of newspaper health stories were written with episodic framing,
and emphasis on individuals. These stories were changed only slightly, mainly to
conform to length requirements, from the versions of actual health news stories
obtained from the LexisNexis database. The public health versions incorporated the-
matic framing and societal context. For example, the obesity story included infor- 245
mation about social factors such as "More hours at work means more eating
outside the home where larger portions are the norm," and "increased television
viewing also leads to a fatter America." Base-rate information about the percentage
of Americans with the particular health problem and the rate of increase in that
health issue also were included. Prevention strategies were also offered; for example, 250
the smoking story included a statement that "States with strong tobacco control laws
reap strong benefits from the bans. They have markedly lower smoking rates and
fewer people dying or suffering from lung cancer. For example, in the first 18 months
after the town of Pueblo, Colorado, enacted a smoking ban in 2003, hospital admis-
sions for heart attacks dropped 27%. Admissions in neighboring towns without   255
smoking bans showed no change." The poor sourcing versions were operationalized
with two, low-quality sources—one was a person affected by the health problem, the
other was either a friend or family member of that person, a celebrity spokesperson,
or priest or religious official. The rich sourcing versions used five sources that were
better quality expert sources—again, a person affected by the health problem, but in 260
addition four sources who were health professionals such as doctors, nurses, county
health office workers, and nutritionists and also researchers or sources from expert
organizations such as the Centers for Disease Control and Prevention or the
National Institutes of Health. This resulted in sixteen stories, one for each of the four
health issues that represented traditional/poor sourcing, traditional/rich sourcing, 265

public health/poor sourcing, public health/rich sourcing (contact authors for exact stories). The design allowed the researchers to determine whether there was an effect for framing alone, for sourcing alone, and for the combination of the different frames and sources.

The stories were written in the typical length for print news stories, 15 to 20 inches each. The stimulus stories were all approximately the same length and contained the same information except for the public health material; in the traditional or control condition, additional, unrelated information about the individuals, their family, and quotations or comments from family, friends, or officials were included to make the stories the same length. This information was designed to have minimal or no effect on readers' perceptions of story liking, public policy, attributions of responsibility, and behavioral intentions—the dependent variables of interest in this study. Except for the immigrant health story, all references to ethnicity were eliminated including ethnic-sounding names.

Procedure

Immediately after reading each story, participants answered a questionnaire measuring the four dependent variables. All were measured on 7-point scales from 1 (*strongly agree*) to 7 (*strongly disagree*). Participants completed the same questionnaire with slight wording changes appropriate to the story immediately after reading each story until they read all four stories. The order in which participants received the stories was rotated so that each story topic appeared first, second, third, and fourth an equal number of times. The dependent variables were operationalized as follows:

We measured story liking with an index of five questions that asked how interesting the story was, how relevant to their lives, how believable, important, and informative it was, and how much they liked it (Cronbach's $\alpha = .78$).

We measured attribution of responsibility (Cronbach's $\alpha = .75$) with an index of 11 questions including "Diabetes is a societal problem," "Diabetics have only themselves to blame" (reverse coded), "If people work hard they can almost always manage their diabetes," "Fatty food and 'super-sized' portions in restaurants are partly to blame for diabetes," "Communities can help prevent diabetes by offering safe, free places to exercise," and "People with diabetes are innocent victims." Question wording for all dependent variables was varied slightly to be appropriate to the health issue of the story. For example, one immigrant health care question was reworded to say "If people work hard they can almost always find a way to obtain health care" (reverse coded). (Contact authors for exact question wording and stories.)

The public policy endorsement index (Cronbach's $\alpha = .77$) asked to what extend participants favored or opposed five policy changes including requiring health care companies to pay for immigrants' health care treatment and prevention, giving discounts on health insurance premiums to immigrants, and providing tax breaks to employers who provide health services to immigrants.

The intention to change behavior index (Cronbach's $\alpha = .724$) included four questions about the participants' likelihood of doing things in the next 30 days, such as these for the obesity story: "buy more fruits, vegetables, and salads," "park farther away and walk more," "take the stairs instead of the elevator," and "go to the gym or exercise at home more often."

After completing all four stories, another questionnaire asked about participants' media use, political party identification, liberal-to-conservative ideology, and the usual demographics.   315

Results

Data Analysis

We used analysis of covariance to determine whether significant differences exist between the different types of stories, which will determine whether the public health framing, rich sourcing, or a combination had a causal effect on participants liking   320
for the stories, attribution of societal responsibility, public policy endorsement, and intentions to change their behavior. The covariates statistically controlled for included age, race, education, gender, having an interest in health issues, and paying attention to health news. Because this is a controlled experiment, we were able to determine whether the story framing and sourcing had a direct causal effect on par-   325
ticipants' attitudes regardless of individual differences.

Hypothesis 1 predicted that because the public health model of reporting gives readers more societal information, readers of public health/rich sources stories will attribute more responsibility for health problems to society than readers of traditional stories. This hypothesis was not supported. Neither public health framing   330
($F = .915$, $p = .340$) nor rich sourcing ($F = .145$, $p = .740$) caused readers to attribute responsibility to society more than traditionally framed and sourced stories. The covariates of gender ($F = 4.14$, $p < .05$) and education ($F = 4.2$, $p < .05$) were significant, however (see Table 1). Women ($M = 4.5$, $SD = 0.57$) were more likely than men ($M = 4.23$, $SD = 0.82$) to blame society, as were those with higher education levels   335
(some graduate school: $M = 4.8$, $SD = 0.77$; high school: $M = 4.3$, $SD = 0.67$).

Hypothesis 2 predicted that readers who saw public health stories would endorse public policy changes more than readers of traditional stories because the public health model of reporting gives readers more societal information. This hypothesis was supported. Public health framing was significantly more likely to cause people   340
to support public policy changes than traditional framing ($F = 5.6$, $p < .05$) after controlling for demographics. Significant covariates included gender ($F = 9.89$, $p < .01$), age ($F = 5.79$, $p < .05$), and education ($F = 7.13$, $p < .01$). Again, women ($M = 5.0$, $SD = 0.82$) were more likely to support policy changes than men ($M = 4.44$, $SD = 0.89$); as were those with more education (some graduate school: 345
$M = 5.7$, $SD = 0.88$; high school: $M = 4.6$, $SD = 1.08$). There was no significant main effect for sourcing (see Table 1).

Hypothesis 3 predicted that because public health stories frame health problems as being preventable and offer suggestions for prevention, readers of public health stories will report greater intentions to change their own health behaviors than read-   350
ers of traditional stories. This hypothesis was supported. Public health framing ($M = 4.0$, $SD = 1.1$) was significantly more likely to cause people to say they intended to change their own behavior than traditionally ($M = 3.6$, $SD = 0.94$) framed stories ($F = 4.5$, $p < .05$) after controlling for demographic covariates. Significant covariates included gender ($F = 20.4$, $p < .001$) and race ($F = 8.58$, $p < .05$). Women ($M = 4.1$,   355
$SD = 0.86$; men $M = 3.2$, $SD = 1.10$) and Hispanics ($M = 4.5$, $SD = 1.2$) the most likely to change their behavioral intentions. Again, there was no main effect of sourcing (see Table 1).

Table 1. *F* value, eta squared, means, and standard deviations of framing, sourcing, the interaction of framing and sourcing, and covariates on societal attribution, policy support, behavior change, and liking of stories

	Societal attribution	Policy support	Behavior change	Liked stories
Framing	$F=.915$, $ή=.007$	$F=5.6^*$, $ή=.042$	$F=4.5^*$, $ή=.034$	$F=2.24$, $ή=.017$
Public health	$M=4.45$ (0.65)	$M=4.9$ (0.84)	$M=4.0$ (1.1)	$M=4.6$ (0.97)
Traditional	$M=4.40$ (0.69)	$M=4.7$ (0.89)	$M=3.6$ (.94)	$M=4.3$ (0.82)
Sourcing	$F=.145$, $ή=.001$	$F=3.32$, $ή=.026$	$F=.696$, $ή=.005$	$F=2.43$, $ή=.019$
Rich	$M=4.45$ (0.73)	$M=4.96$ (0.94)	$M=3.9$ (1.09)	$M=4.6$ (0.91)
Poor	$M=4.38$ (0.60)	$M=4.6$ (0.78)	$M=3.76$ (0.97)	$M=4.3$ (0.87)
Framing × Sourcing	$F=.007$, $ή=.001$	$F=1.31$, $ή=.01$	$F=1.5$, $ή=.012$	$F=.03$, $ή=.001$
Covariates				
Age	$F=2.68$, $ή=.021$	$F=5.79^*$, $ή=.044$	$F=.056$, $ή=.001$	$F=.058$, $ή=.001$
Education	$F=4.2^*$, $ή=.032$	$F=7.13^{**}$, $ή=.053$	$F=.009$, $ή=.001$	$F=1.09$, $ή=.009$
Gender	$F=4.14^*$, $ή=.032$	$F=9.89^{**}$, $ή=.072$	$F=20.4^{***}$, $ή=.138$	$F=1.13$, $ή=.009$
Race	$F=1.26$, $ή=.01$	$F=9.89^{**}$, $ή=.072$	$F=6.5^*$, $ή=.049$	$F=1.37$, $ή=.001$

$^*p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$

9

   Research Question 1 asked whether readers would find public health stories
more interesting, relevant, believable, important, and informative than traditional   360
stories; we found no differences. The public health stories did not cause readers to
find them significantly more likable than the traditionally written stories ($F = 2.24$,
$p = .137$) (see Table 1).
   Hypothesis 4 predicted that the combination of public health framing and rich
sourcing would be more significant than the other combinations on the dependent   365
variables of societal attribution of responsibility, public policy endorsement, and
behavioral intentions. This was not supported as there were no significant interac-
tions of framing and sourcing on any of the dependent variables (see Table 1).

The Effects of Individual Stories

This study involved replications across four story topics—immigrant health, smok-   370
ing, obesity, and diabetes. It was expected that the pattern of results would be the
same for each of these stories, given the careful controlling for length, presentation
style, and so forth. It is interesting to note that some results that were not hypothe-
sized varied according to these story topics. For example, rich sourcing in the dia-
betes story had a significant effect on policy support, and a nearly significant   375
effect in the obesity story; people who read the rich sourcing versions of those two
stories were more likely to support policy changes, but not readers of the rich-
sourced smoking or immigrant health stories. The immigrant health story did show
a significant effect of rich sourcing on people's intention to change their own health
behaviors, and also a significant interaction effect of sourcing and framing on beha-   380
vioral change. The smoking story had no significant effects of either sourcing or
framing on any of the dependent measures. Furthermore, the smoking story per-
formed differently from the other three stories on the attribution of responsibility
index. The Cronbach's alpha measure of internal consistency was too low for the
smoking story to support creating an index of questions that measured how much   385
people blamed society or individuals for smoking-related problems; that was not
the case in the other three stories. These inconsistent findings support the idea that
health story topics matter as much or more than sourcing and framing and represent
''uncontrolled'' effects.

Discussion   390

The results of this study were a mixed bag. The most central hypothesis was that
richer sourcing and public health framing would cause readers to attribute health
problems to societal problems, rather than blaming the individuals who were fea-
tured in the stories. However, neither sourcing nor framing affected attribution to
society. This may be because a single story—or even four—cannot have a great effect   395
on people who are so accustomed to blaming individuals for their health problems
and are not used to thinking, as public health professionals do, that the greatest
effect on health comes from people's environments. Although framing effects have
been found with one or only a few stories for other topics, it was not the case for
these health news stories. It is possible that these few stories could not adequately   400
replicate the real world where audiences experience repeated exposure to health
news. The change in the context of political discourse about responsibility generally
may be another explanation; the political discourse about responsibility has changed

so dramatically since the early 1990s when Iyengar conducted his research that it now takes more stimuli to move the responsibility needle.

More encouraging was the fact that public health framing did cause people to support public policy changes more than traditional framing. This suggests that the more reporters come to understand public health framing and use it, the more people will understand and support the environmental changes that can positively influence people's health and be willing to support policies that would change those environments.

There were no effects of the better and more authoritative sourcing on support for public policy changes. Because ordinary people who have experience with the health issue, medical personnel and other authorities are most often the sources of traditional health stories (Brannstrom & Lindblad, 1994; Mercado-Martinez et al., 2001), it is possible that our manipulation was not strong enough. News conventions usually call for a minimum of three sources per story; our traditional stories had two and our public health stories had five – even though readers could detect the difference in manipulation checks, it may not have been a big enough difference to affect attitudes and behavior. Further, people with health problems are traditional sources of health stories, and have been found to be highly credible, so it would have been unrealistic for us not to include these credible, real people in our traditional stories. It appears that the traditional way journalists source stories is already quite good, and that adding more expert sources would not reap enough rewards to be worth the extra effort. Again, women and those with more education were more likely to support public policy changes, regardless of sourcing or the presence of a public health frame, and this was also somewhat expected from previous research (Brannstrom & Lindblad, 1994).

Public health framing also caused people to be more likely to intend to change their own health-related behaviors. There was no effect of the quality of sourcing on willingness to change self behaviors. It is interesting to note that women and Hispanics were more likely to be willing to change their own health-related behaviors, regardless of condition.

Last, we expected that the very "best" stories, those with a combination of rich sourcing and a public health frame, would show enhanced effects over either of the variables by themselves. This did not occur.

Perhaps the most problematic aspect of the results was that there were not consistent effects across the four story topics. In some of the stories, the missing effect of rich sourcing did actually appear. For example, rich sourcing in the diabetes story had a significant effect on policy support, and a nearly significant effect in the obesity story; people who read the rich sourcing versions of those two stories were more likely to support policy changes, but not readers of the rich-sourced smoking or immigrant health stories. Again, why rich sourcing would have an effect in some stories and not others suggests sources of uncontrolled variation in story topics. We note that even Iyengar's (1991) results on attributions of responsibility for crime showed strong interactions with the subject matter.

While we continue to be puzzled about this result, it is possible that, at this point in history, smoking represents a special case. Even though smoking is a powerful addiction, public health messages through the media, through many other interpersonal channels, and through public policies such as the establishment of nonsmoking sections in restaurants have been consistent for decades about the potentially deadly effects of smoking (Dorfman & Wallack, 2007). The fact of the matter is that people

still smoke despite all this negative information. It is perhaps unreasonable to suggest, in this environment with multiple messages from multiple sources, that a single news story—no matter how it is crafted—would have an effect on a belief and behavior system that has developed over many years of messages about this particular health habit regardless of whether people themselves smoke.

The results regarding the immigrant health stories obviously do not fit this explanation. We note that we tested this on participants who reside in a Southwestern state where immigrants represent significant portions of the population, assuming that background knowledge of the issue in our participants would make it more likely for us to find effects of our manipulations. Although we did not test for this, it is possible that our subjects may be cognitively overwhelmed by the politics of the illegal immigration political debate. While there is some empirical evidence (plus a lengthy history) to suggest plausible alternative explanations on the results of the smoking portion of the experiment, all we can say at this point is that communication about public health questions as they are applied to immigrants is certainly deserving of additional research.

Because so much of health reporting training focuses on improving the level and quality of sourcing, in order to understand its effect on people, it is important to identify what it is about that sourcing that creates the desired effect on readers or whether having journalists concentrate on obtaining more hard-to-reach sources is even worthwhile.

The strength of this study is that it succeeds in showing just how important public health framing is, while ruling out some of the approaches that cost journalists time and effort but may not produce desired results. Although public health framing does not affect attribution of health problems to society rather than to individuals, it leads to more endorsement of changing public policy in ways that encourage better health. It stimulates people to think about changing their own health behaviors. It therefore provides important support for the basic concept underlying training reporters to use a public health frame.

References

Baran, S. J., & Davis, D. K. (1995). *Mass communication theory: Foundations, ferment and future*. Belmont, CA: Wadsworth.

Brannstrom, I., & Lindblad, I.-B. (1994). Mass communication and health promotion: The power of the media and public opinion. *Health Communication*, *6*(1), 21–36.

California Center for Public Health Advocacy. (2008). *Designed for disease: The link between local food environments and obesity and diabetes*. Retrieved November 1, 2008, from http://www.publichealthadvocacy.org/designedfordisease.html

Campos-Outcalt, D. (2004). HIV prevention enters a new era. *The Journal of Family Practice*, *53*, 563–565.

Chapman, S. (2001). Advocacy in public health: Roles and challenges. *International Journal of Epidemiology*, *30*, 1226–1232.

Chavez, V., & Dorfman, L. (1996). Youth and violence on local Spanish language television news. *International Quarterly of Community Health Education*, *7*, 121–138.

Cohen, B. (1963). *The press and foreign policy*. Princeton, NJ: Princeton University Press.

Combs, B., & Slovic, P. (1979). Newspaper coverage of causes of death. *Journalism Quarterly*, *56*, 837–843, 849.

Dorfman, L., & Schiraldi, V. (2001). Off balance: Media coverage of youth crime. *Guild Practitioner*, *58*, 75–78.

Dorfman, L., & Wallack, L. (1998). Alcohol in the news: The role for researchers. *Contemporary Drug Problems*, *25*(1), 65–84.

Dorfman, L., & Wallack, L. (2007). Moving nutrition upstream: The case for reframing obesity. *Journal of Nutrition Education and Behavior*, *39*, S45–S50.

Dorfman, L., Wallack, L., & Woodruff, K. (2005). More than a message: Framing public health advocacy to change corporate practices. *Health Education & Behavior*, *32*, 320–336.

Dorfman, L., Woodruff, K., Chavez, V., & Wallack, L. (1997). Youth and violence on local television news in California. *American Journal of Public Health*, *87*, 1311–1316.

Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, *43*(4), 51–58.

Fishman, J. M. (2006). Mass media and medicine: When the most trusted media mislead. *Mayo Clinic Proceedings*, *81*, 291–293.

Frisby, C. (2006). A matter of life and death: Effects of emotional message strategies on African American women's attitudes about preventative breast cancer screenings. *Journal of Black Studies*, *37*(1), 103–126.

Gollust, S. E., & Lantz, P. M. (2009). Communicating population health: Print news media coverage of type 2 diabetes. *Social Science & Medicine*, *69*, 1091–1098.

Hatley-Major, L. (2009). Break it to me harshly: The effects of intersecting news frames in lung cancer and obesity coverage. *Journal of Health Communication*, *14*, 174–188.

Hatley-Major, L., & Coleman, R. (2006, August). *From the doctor's office to the pulpit: Creating more effective HIV/AIDS messages for African Americans by examining source credibility and evidence format.* Paper presented to the Minorities & Communication Division of AEJMC.

Higgins, J. W., Naylor, P. J., Berry, T., O'Connor, B., & McLean, D. (2006). The health buck stops where? Thematic framing of health discourse to understand the context for CVD prevention. *Journal of Health Communication*, *11*, 343–358.

Iyengar, S. (1991). *Is anyone responsible? How television frames political issues*. Chicago: University of Chicago Press.

Kim, A. E., Kumanika, S., Shive, D., Igweatu, U., & Kim, S.-H. (2010). Coverage and framing of racial and ethnic health disparities in U.S. newspapers, 1996–2005. *American Journal of Public Health*, *100*, S224–S231.

Kim, S.-H., & Willis, L. A. (2007). Talking about obesity: News framing of who is responsible for causing and fixing the problem. *Journal of Health Communication*, *12*, 359–376.

Kim, S. T., & Weaver, D. H. (1993). Reporting on globalization: A comparative analysis of sourcing patterns in five countries' newspapers. *Gazette: The International Journal for Communication Studies*, *65*, 121–144.

Lawrence, R. G. (2004). Framing obesity: The evolution of news discourse on a public health issue. *Press and Politics*, *9*(3), 56–75.

McManus, J., & Dorfman, L. (2005). Functional truth or sexist distortion? Assessing a feminist critique of intimate violence reporting. *Journalism*, *6*, 43–65.

Mercado-Martinez, F. J., Robles-Silva, L., Moreno-Leal, N., & Franco-Almazan, C. (2001). Inconsistent journalism: The coverage of chronic diseases in the Mexican Press. *Journal of Health Communication*, *6*, 235–247.

Mercy, J. A., Rosenberg, M. L., Powell, K. E., Broone, C. V., & Roper, W. L. (1993). Public health policy for preventing violence. *Health Affairs*, *12*, 7–26.

Ramsey, S. (1999). A benchmark study of elaboration and sourcing in science stories for eight American newspapers. *Journalism & Mass Communication Quarterly*, *76*(1), 87–98.

Rest, J. R. (1993). Research on moral judgment in college students. In A. Garrod (Ed.), *Approaches to moral development: New research and emerging themes*. New York: Teacher's College Press.

Salwen, M. (1992). The influence of source intent: Credibility of a news media health story. *World Communication*, *21*, 63–68.

Schwitzer, G., Mudur, G., Henry, D., Wilson, A., Goozner, M., Simbra, M., et al. (2005, July). What are the roles and responsibilities of the media in disseminating health information? *The PLoS Medicine Debate*, *2*, 215–222.   555

Severin, W. J., & Tankard, J. W. (1992). *Communication theories: Origins, methods, and uses in the mass media*. New York: Longman.

Signorielli, N. (1993). *Mass media images and impact on health*. Westport, CT: Greenwood Press.   560

Stevens, J. E. (1998). Integrating the public health perspective into reporting on violence. *Nieman Reports, Winter*, 38–40.

Woodruff, K., Dorfman, L., Berends, V., & Agron, P. (2003). Coverage of childhood nutrition policies in California newspapers. *Journal of Public Health Policy*, *24*, 150–158.

Q6