

# THE INTERACTION OF NEWS AND ADVOCATE FRAMES: MANIPULATING AUDIENCE PERCEPTIONS OF A LOCAL PUBLIC POLICY ISSUE

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*This article presents the results of a two-wave experiment designed to examine how journalistic news frames can facilitate the communication of advocacy frames designed to influence audience perceptions of a political issue. We constructed five versions of a newspaper article about large-scale hog farms. The versions differed in the weight they gave to frames promoted by organizations interested in this issue. The relative emphasis given the competing frames was reflected in subjects' interpretations of the issue and in their evaluations of hog farms. A retest three weeks after the initial exposure revealed a significant, though muted, cognitive impact of the frames. The implications of these results for journalism, issue advocacy, and the study of issue framing are discussed.*

## Introduction

There has been a considerable amount of recent scholarly attention to the concept of news "framing." In general, researchers have found that the news media tell stories about political issues using only a narrow range of perspectives.<sup>1</sup> Frames supplied by journalists provide audiences with the means to organize and understand new information. Gamson argues that the story frames journalists use provide citizens with a basic tool kit of ideas they apply to thinking and talking about politics.<sup>2</sup> Indeed, scholars have long suggested that journalists' characterization of an issue can shape its reality for an audience.<sup>3</sup> The concern among observers is that these story frames serve to limit and direct the things audiences consider when they think about issues.

If news frames influence individuals' explanations of issues, they will likely also have an impact on policy decisions regarding those issues.<sup>4</sup> Frames can imply policy options or implicit answers to questions of what should be done about issues.<sup>5</sup> Entman argues, "To frame is to select some aspects of a perceived reality and make them more salient in

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a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described."<sup>6</sup> News frames, therefore, may shape individuals' opinions and policy preferences by stressing certain elements or features of a broad controversy.

Exploring the boundaries of framing in a local context is the primary focus of the present study. A number of studies have documented the frequent, almost ritualistic use of certain media frames.<sup>7</sup> Other research has demonstrated the substantial impact advocate and media frames can have on the beliefs and opinions of audiences.<sup>8</sup> We look at how different news story perspectives can serve as vehicles for the advocacy activities of policy actors. Some news frames are particularly likely to carry advocacy frames, and this study will examine how different combinations of advocacy frames may affect audience interpretations and opinions. The present study also looks at the effects of advocacy frames over time and explores the role of potential conditional variables in the framing process.

*News and Advocacy Frames.* Researchers have pointed out that there is some confusion regarding the meaning and use of the framing concept today.<sup>9</sup> In a recent article, Scheufele suggests making a distinction between media frames and individual frames.<sup>10</sup> The former refer to the way journalists describe a political issue, event, or person. This description sets the territory within which audiences understand, interpret, and react to the political object. An individual frame, on the other hand, is the set of knowledge a person has acquired about an issue, and it is used by him or her to evaluate and understand new information.<sup>11</sup> Individual frames are often thought of as internal structures of the mind (or schemas) that help individuals cope with the large amount of information available to them.<sup>12</sup> The single greatest power of media frames is their ability to provide and/or activate information, thereby shaping individual frames.

While the distinction Scheufele makes is a useful one, it may not go far enough. More needs to be said about different media frames and how they operate. Most approaches to the production of media frames have emphasized the role of journalistic norms and news values in the production of messages.<sup>13</sup> In general, journalists are thought to have central beliefs about what sorts of news audiences want to see. These beliefs shape what topics are included in the news and how stories about those topics are told. Gamson and Modigliani describe journalist frames as "the central organizing idea or story line that provides meaning to an unfolding strip of events and weaves a connection among them."<sup>14</sup>

Journalistic norms, values, and practices aid journalists in producing news quickly and routinely. For example, the principle of objectivity or fairness is an important journalistic value which requires reporters to gather as much information as they can while giving both sides equal time to register their comments and interpretations.<sup>15</sup> Principles of fairness, along with other norms and values about what constitutes a

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## Literature Review



good news story, enter into production decisions and ultimately result in routine journalistic themes and perspectives.<sup>16</sup> However, many critics have raised the concern that journalist frames become problematic when they are highly stereotyped and uniform throughout news discourse.<sup>17</sup> Rather than constructing contrasting interpretive frames that offer diverse insights into complicated issues, journalists tend to construct highly formulated news frames that "reconstruct the world in similar ways."<sup>18</sup>

Some researchers argue that journalists' frames, most often called the story angle, peg, or hook, are determined by the facts that are thought to be most important.<sup>19</sup> However, importance is always a negotiated concept, particularly given the complexities journalists face as they seek to make sense of events.<sup>20</sup> For any contentious political issue there are individuals and groups with a stake in how news audiences understand the situation. These policy advocates actively seek to control how an issue or candidate is described or portrayed in the media.<sup>21</sup> Advocate frames are specific, carefully constructed ways of interpreting an issue. Indeed, they may be thought of as persuasive arguments. Thus, any consideration of media frames should incorporate the effects of advocate activities. Ultimately, it may be useful to add advocate frames as a third type of frame, temporally prior to media and individual frames but, more germane to the present study, often present in them in the end. Taking that approach, the present study attempts to distinguish between the operation of media frames (i.e., news story telling formats) and advocate frames (i.e., explanations and arguments intended to persuade) in news reports. While a number of studies have documented the frequent, almost ritualistic use of certain media frames,<sup>22</sup> there has been little examination of what happens when advocacy groups use journalistic norms as vehicles for their issue frames. The present study demonstrates how issue frames operate within the context of journalistic story-telling norms.

Among the story types commonly used by journalists are the event- and conflict-centered stories.<sup>23</sup> Conflict-oriented news frames emphasize friction among and between individuals, groups, and institutions. Critics complain that conflict frames tend to reduce complex substantive debate to simplistic two-sided competition.<sup>24</sup> However, conflict-centered frames also easily satisfy the fairness norm in journalism.<sup>25</sup> Event-centered frames are a different matter. By their nature, they are focused on one incident, often with only one particular story being told. Researchers have argued for some time that issue advocates and political actors use pseudo-events and other devices to attract media attention.<sup>26</sup> Advocates gear their activity toward harnessing journalists' news values and using them to create stories that communicate issue packages. As a result, event-centered articles are likely to bestow an advantage to the advocacy frame suggested by the sponsor of a media event.<sup>27</sup> In a recent study, Fico and Cote examined presidential election coverage at nine daily newspapers in Michigan.<sup>28</sup> They found that stories initiated by speeches or rallies were the least balanced type of story. Candidates other than those staging events were rarely mentioned in the lead paragraphs of the resulting articles. The present study examines, in

part, the potential differences in impact of these two story-telling forms. Specifically, the study looks at differences in the influence of advocacy frames communicated through conflict versus event-centered news reporting.

Both news frames and advocate frames are most often communicated in the headline and lead paragraphs. Headlines, in particular, have been shown to influence what audiences understand about news stories.<sup>29</sup> Pan and Kosicki argue that the headline is the most powerful framing device of the syntactical structure.<sup>30</sup> It narrows the range of likely interpretations and invokes particular ideas and concepts even before a person has begun to read the story.<sup>31</sup> Headlines set the stage for the manner in which the story is read and establish the frame of reference from which the facts of the story are perceived.<sup>32</sup> Headlines serve as an index by both attracting attention to stories and influencing audience interpretations. They may also suggest the evaluative perspective for reading a news account.<sup>33</sup>

*Individual-level Processing of Frames.* The power of both media and advocate frames to influence audiences' interpretation of the news has been called an "applicability effect."<sup>34</sup> Drawing from research in cognitive social psychology, Price and Tewksbury distinguish framing from other media effects such as priming and agenda setting.<sup>35</sup> A frame establishes an associative pathway between a target issue and a specific set of concepts. By activating or suggesting some ideas at the expense of others, the news can encourage particular trains of thought about political phenomena and lead audience members to arrive at more or less predictable conclusions.<sup>36</sup> However, in any given situation, constructs evoked by a particular news message have to compete for attention with the ideas and feelings that are already accessible to readers and viewers. Framing, or rendering certain thoughts applicable, is most likely to occur when the suggested ideas are relatively accessible prior to exposure.<sup>37</sup>

The advocate framing process may also be thought of in terms of persuasive communication effects.<sup>38</sup> That is, at the point advocate frames are communicated to audiences in news reports, they may be similar to persuasive arguments meant to advance a particular point of view. Naturally, there are many methods by which policy players may attempt to sway public opinion, but the route that most closely parallels current thinking in framing research is the message-learning approach in persuasion. Based on models of learning and skill acquisition, the message learning perspective suggests that attitude change, particularly long-term change, comes from the acceptance and retention of persuasive arguments.<sup>39</sup> Presumably, people base some portion of their opinions on a set of considerations or beliefs that appear relevant to the issue at hand.<sup>40</sup> Among the factors that can influence message recipients' acceptance and retention of arguments are source and message attributes.<sup>41</sup>

The present study builds on this classic model and focuses on the extent to which advocate explanations of issues and events are accepted and retained by audiences. An important distinction between framing research and traditional persuasion studies, however, is the amount of



emphasis being placed on audience learning. For persuasion researchers, the independent variables of interest are persuasive messages and so the ultimate dependent variable in that research is typically a message recipient's attitude or behavior toward some object or idea. In contrast, much of the framing research to date examines how audience cognitions about an object or idea are affected by exposure to a message.<sup>42</sup> Indeed, some media and advocate frames have powerful effects even when recipients' attitudes are not affected.<sup>43</sup> To be sure, changes in beliefs or interpretations of an issue may have consequences for attitudes about that issue,<sup>44</sup> but that need not be the primary effect of a frame.

Another distinction between persuasion studies and contemporary news framing research lies in the relative emphasis on persuasive intent. In the vast majority of prior research on persuasion, audiences have been aware of the overt persuasive intentions of the message source. In the present context, however, audiences presumably consider news accounts to be relatively objective. Within the news frame lurk advocate frames, to be sure. But it is unclear how well audiences can identify the sometimes subtle distinctions among those frame types and whether they attribute persuasive intent to advocates appearing in the news.

Despite these distinctions between the two lines of research, persuasion and framing studies have a number of things in common. An important question for both areas is the persistence of message effects.<sup>45</sup> Persuasion research has examined the long-term effects of messages both directly and through " sleeper " processes.<sup>46</sup> Hovland and colleagues learned relatively early that retention of a message's central conclusion was not necessarily the same as the retention of its supporting arguments.<sup>47</sup> Rather, the message learning approach stipulates that memory for the arguments in a message will degrade more quickly than will memory for the position it advocates.<sup>48</sup>

From the framing perspective, there is reason to believe that framing effects can be relatively long lasting. Because it is an applicability process, the power of a frame is its ability to establish a memory link between an object and some set of information. The frame essentially tells people that when they think about some issue or person, they should also think about a corresponding set of ideas. Thus, framing effects should not be as short-lived as a media prime and should have some staying power. Unfortunately, little prior research has explored the longevity of framing effects (as distinct from persuasive effects). The present study features a two-wave panel design that should provide some insight into the long-term effects of issue frames that make it into the news.

Another element of framing that has not yet received enough attention is the question of how much of a news story must be devoted to an advocate frame for its influence to be consequential. Most studies have examined the mere presence of a frame or looked at a few opposing frames.<sup>49</sup> That is, they compare two or more competing frames and only sometimes include a "middle" control condition.<sup>50</sup> Given that the presence or absence of a frame has been demonstrated to have some effect, it is a logical step to argue that the relative strength of an advocate

frame within a news account will also influence outcomes. Indeed, research in persuasion has demonstrated that, assuming equal argument strength, the "side" with the larger number of arguments will be more persuasive.<sup>51</sup> News stories are probably rarely completely one-sided, of course. Rather, if journalists subscribe to the evenhandedness norm, this should be fairly unusual. But coming out of advocacy activities and certain journalistic practices may be the production of news accounts dominated by advocacy frames. Event-centered news reports, for example, often give greater emphasis to the frame advocate by the sponsor of the event.<sup>52</sup> Even so, the presence of advocate frames is rarely an all-or-nothing condition. Therefore, any research in this area should examine varying levels of issue frame advantage.

Persuasion researchers have also studied the effects of message order, one way in which the prominence of advocate frames within news reports varies, with mixed results.<sup>53</sup> In some situations, arguments appearing early in a message seem to carry the most weight (a primacy effect) but in others later arguments appear to be more persuasive (a recency effect). One explanation for this pattern lies with audiences' levels of elaboration. When audiences are motivated to engage in higher levels of message elaboration, they are more likely to be influenced by early arguments. When audiences process messages less carefully, they are more susceptible to recent arguments.<sup>54</sup>

McLeod and Detenber's recent study of social protest news is one of the only framing studies to have examined varying levels of frame advantage.<sup>55</sup> Looking at differences in the balance of status quo and protest group support in television news, they found a negative linear relationship between emphasis on the social status quo and a number of indicators of audience support for protestors. In their study, however, McLeod and Detenber assessed only part of the potential competition between competing frames. Conceptually, one can think of the contest between advocacy frames as existing on a continuum. At both ends of the dimension are news reports giving substantial weight to one frame and little or none to the other. At the middle is a neutral story that features neither side or contains some balanced account of the two. The news reports McLeod and Detenber used essentially represented only one side of that continuum. The news account that represented "low support" of the status quo included little information promoting the message of the protestors. Thus, their operationalization varied the amount of weight given to one side of the situation, but it did not include a full manipulation of the amount of support for the other side.

It may be that the impact of advocate frames on one side of this continuum may not mirror those on the other. It may be that some frames are more likely than others to resonate with audiences. Perhaps there is a critical level of pre-eminence for some advocacy frames. Such a level would have to be reached in a news account before audiences would adjust their beliefs and opinions toward the frame's direction. Unfortunately, prior framing research has not been able to explore this possibility. The present study seeks to rectify that gap in the literature and hopefully moves towards an answer of how preeminent an advocate frame must be for it to influence beliefs and judgments.



Finally, it seems likely that issue frames contained in news accounts do not reach all people equally. Moderating variables such as audience members' reading and message processing styles may condition the influence of issue frames. One theoretical model that, in part, accounts for how carefully people process persuasive messages is the elaboration likelihood model (ELM).<sup>56</sup> The model is based on the idea that people process information to varying degrees. The extent to which receivers participate in issue relevant thinking forms a continuum, with extremely high elaboration and little or no elaboration anchoring the scale endpoints.<sup>57</sup> The ELM approach suggests that receivers' personal need for careful thought (i.e., their "need for cognition") may be one factor that can influence depth of elaboration.<sup>58</sup> People who have a strong need for cognition are more sensitive to variations in message quality than are other people.<sup>59</sup> It may also be that these people are more likely to consider two sides of an issue discussed in the news. They may be less willing to accept the first frame they encounter in a report and more willing to attempt to untangle the mixed set of advocate frames one often encounters in political news. Thus, variations in advocacy frame emphasis may have a smaller effect on people high in a need for cognition than on those low in this need.

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## *Hypotheses*

Based on the considerations just described, a number of hypotheses seemed sensible. First, frames should influence how people think about an issue.

H1: The more an advocate frame dominates a news account, the more likely are audiences to interpret the issue in terms of that frame.

Next, because advocate frames include explicit and implicit normative elements, they should influence how people render political judgments.

H2: The more an advocate frame dominates a news account, the more likely are audiences to make general evaluations of the situation that are consonant with that frame.

H3: The more an advocate frame dominates a news account, the more likely are audiences to accept policy recommendations suggested by that frame.

Framing effects should persist across time.

H4: The effects of relative dominance of advocate issue frames within a news account will persist over time.

Finally, people should differ in their susceptibility to framing effects.

H5: Audience members' processing style conditions the effects of differences in frame weight in a news account, such that audience members with a higher need for cognition exhibit fewer effects of differences in advocacy frame dominance.

## Method

Data were collected in a two-wave, five (frame) by two (need for cognition) between-subjects experiment. Each subject was randomly assigned to one of five exposure conditions. Participants in the study read a story that purported to describe the issues surrounding proposed state regulation of large-scale hog farms. The content of the article was manipulated to create conflict- and event-centered stories. Within the event-oriented articles, further manipulations created different levels of advocate frame emphasis. After reading the article, subjects reported their impression of the farms and the general concept of hog farm regulation. They also described their interpretation of the issues surrounding the farms. Three weeks later, the subjects completed an identical battery of dependent measures.

*Sample.* Subjects were undergraduate students enrolled in an introductory public speaking course at the University of Illinois at Urbana-Champaign. Five hundred and ten subjects completed the first wave of the study. Just over half of them were female (55%) and close to two-thirds (64%) were first-year students. Each of the five experimental groups contained between 100 and 103 subjects. Almost three-quarters of the original subjects (366) participated in the second wave of the study.<sup>60</sup> Their gender and class profile matched those observed in the first wave. Each of the five groups in the second wave contained between 69 and 78 subjects. Although it was not planned, an additional 51 students completed the second wave but not the first.<sup>61</sup> Thus, a total of 561 subjects participated in at least one wave of the study.

*Stimulus.* Early in the questionnaire, subjects were asked to read what were described as two articles that had appeared in a recent issue of the *State Journal-Register* (the sole daily newspaper published in the state capital). The font, layout, and general appearance of both were designed to give the impression that they had been clipped from the newspaper. The first article, an actual story included here as a warm-up task, reported a state Supreme Court ruling regarding truth-in-sentencing laws. The central manipulation was contained in the content of the second article.

The political issue discussed in the stimulus article is whether large pork producing farms in the state should be regulated and how large these farms should be. On the one hand are environmental and locally based groups who oppose large farms primarily out of health concerns. On the other hand are farm and industry groups who argue that only large farms have the ability to withstand worsening economic conditions in the farm sector of the economy. Prior to the beginning of the study, the hog farm debate had received some attention in the local media, although far less than a host of other national, state, and local issues. It was selected for inclusion in this study because there are two relatively clear-cut advocacy groups with distinct frames for interpreting the issue. Its



assumed low relevance for this subject population means that this study is particularly focused on the effects of advocate frames when audiences initially have relatively little information about the issue in question.

Drawing on the distinction between conflict and event-centered reporting raised earlier, the "conflict" stimulus article in the present study was a relatively balanced treatment highlighting disagreement between the two groups concerned with this issue. This article is reproduced in the appendix. Two other articles mimicked event-centered stories that gave more emphasis to an environmental group. The remaining articles used the same approach to give emphasis to an industry association. On each "side" of the conflict condition, the articles differed in the degree to which they favored the respective group. All five articles contained approximately 580 words.

Policy statements describing the competing frames on the hog farm issue were obtained from the Illinois Stewardship Alliance, an environmental interest group, and the Illinois Pork Producers Association, an industry group. The former attempts to frame the issue in environmental terms, stressing the health threats posed by large farm operations. The group is particularly concerned with the potential for large farms to spill hog manure into local water sources. The industry group suggests that the more appropriate frame is economic. They claim that large-scale farms are more efficient and, therefore, are more likely to survive in an increasingly competitive market environment. A set of seven representative quotations was drawn from each group's materials. These statements, along with a general description of the hog farm issue, were given to a group of 16 students enrolled in a graduate journalism course. The students were asked to use the general context of a state Senate committee hearing on hog farms to characterize the frames advocated by the two groups. The articles they wrote were evaluated for the level of balance they brought to their presentation of the debate.<sup>62</sup> From among the five most balanced articles, one was selected (on the basis of writing quality) for the conflict condition.

The headline for this article read "Groups clash in Senate hog farm hearings." The lead paragraphs briefly described the alleged hearings and the frames advanced by the interest groups. The article then described, in turn, the positions of the Illinois Stewardship Alliance and the Illinois Pork Producers Association. The final paragraph forecast when the Senate would act on this issue and repeated the competing frames. The articles created for the other four conditions featured a fictitious news conference, a common "event" around which stories are structured. The headline used for the two articles that favored the environmental frame read, "Group report cites hog farm pollution problems." Almost all of the original frame content of the conflict article was retained, but the order of presentation was dramatically altered. The economic frame was not mentioned until the middle of the story. Thus, the article contained an almost equal number of mentions for the two sides, but the environmental frame was given in the headline and appeared earlier in the text. The article most strongly biased toward the Stewardship Alliance was created by moving any mention of the farm association to the final few paragraphs of the story. Additional informa-

tion supporting the environmental frame was inserted in the space formerly given to the economic frame. An identical procedure was used to create the articles giving more prominence to the industry frame.<sup>63</sup>

**Evaluation of Farms.** In both waves, subjects completed a four-item semantic-differential evaluation task. The stem asked them to indicate their "feelings toward 'large-scale hog farms'" by checking boxes on a set of unnumbered seven-point scales. The adjective pairs used as scale anchors were "good-bad," "positive-negative," "favorable-unfavorable," and "beneficial-harmful." Responses to these items were averaged and reversed to form a scale of positive feelings toward large-scale hog farms (wave 1  $M = 3.8$ ,  $SD = 1.19$ ,  $\alpha = .93$ ; wave 2  $M = 3.81$ ,  $SD = 1.19$ ,  $\alpha = .96$ ).

**Regulation of Farms.** Following the semantic differential items in both waves was a forced-choice question regarding farm regulation. A pro-regulation statement read, "large-scale hog farms should be prohibited in the state of Illinois," and the other statement read, "large-scale hog farms should not be regulated in any way in the state of Illinois." This rather extreme set of options was intended to force subjects into moving definitively into one direction or the other. A "don't know" option was also offered. The distribution of choices in the first wave was 33% of valid responses in favor of regulation and 25% opposed. In the second wave, the proportions were 25% and 19%, respectively.

**Interpretation of the Issue.** Following these items was an open-ended question that read, "If you had to summarize what the large-scale hog farm issue is all about, what would you say? Please list as many thoughts as you have. Please list one thought in each space below." A set of eight spaces filled the remainder of the page. The content of one space was taken to represent a single thought. The mean number of thoughts in the first wave was 3.08 ( $SD = 2.37$ ) and in the second 1.91 ( $SD = 1.64$ ). A trained coder analyzed the responses for the presence of comments referencing an element of the environmental frame, comments mentioning an element of the economic frame, some comment about hog farm regulation, a mention of the presence of conflict between groups, a general reference to the state of Illinois, or some other topic.<sup>64</sup> The comments of 10% of the study's participants were analyzed by a second coder. The level of agreement between the two analysts was high (Cohen's Kappa = .83).

Comments regarding economic and environmental issues will be used in the analyses that follow. The number of comments in each category was divided by each subjects' total number of responses. The resulting score represents the proportion of comments devoted to the economic and environmental topics (wave 1  $M = .32$ ,  $SD = .27$  and  $M = .38$ ,  $SD = .29$ , respectively; wave 2  $M = .22$ ,  $SD = .29$ , and  $M = .36$ ,  $SD = .34$ , respectively). For each subject, the proportion of comments relating to the economic frame was then subtracted from those regarding the environmental frame. Thus, this measure is an assessment of the extent to which each subject stressed the environmental over the economic frame (wave 1  $M = .06$ ,  $SD = .47$ ; wave 2  $M = .14$ ,  $SD = .48$ ).

**Need for Cognition.** A set of ten need for cognition items appeared late in the first-wave questionnaire.<sup>65</sup> Subjects indicated their agreement



with self-referential statements (such as "I prefer complex to simple problems" and "I try to avoid situations where there is a good chance that I will have to think hard about something"). Responses were given on seven-point scales with "strongly disagree" and "strongly agree" as endpoints. The set of 10 responses was averaged together to form a measure with higher responses indicating greater need for cognition ( $M = 4.76$ ,  $SD = 1.01$ ,  $\alpha = .84$ ). This scale was then split at the median (4.78) to create a dichotomous variable.

*Covariates.* It appeared plausible that one effect of the frame manipulation could be to inadvertently induce some subjects to pay more attention to the article's content. That is, it seemed possible that, due to the articles' structure, subjects in one or more conditions may read more of the article than would subjects in the others. Such a confound could obscure the independent effects of the prominence of advocate frames. To control for this possibility, two items were included in the first-wave questionnaire. The first was a five-item test of subjects' ability to recall core information included in all versions of the article.<sup>66</sup> The mean number of correct responses was 1.4 ( $SD = 1.32$ ,  $\alpha = .70$ ). Also included in the wave 1 instrument was a self-report of the proportion of the article subjects had read. A two-by-two inch image of the article was shown on a page late in the questionnaire. Subjects were asked to draw a line through sections they had read. For each subject, the number of paragraphs indicated was divided by the total number of paragraphs for his/her particular article. The resulting score had a mean of .71 ( $SD = .38$ ).<sup>67</sup> All analyses of covariance (ANCOVAs) use these two variables as covariates. Neither item was affected by the article manipulation.

## Results

*Interpretation of the Issue.* The first hypothesis predicts that subjects' cognitions regarding the hog farm issue will be influenced by the relative dominance of frames within the articles. Table 1 presents the data for comments about environmental and economic topics for both waves. Also included for both is the difference between the proportion of comments about environmental and economic topics. The data offer strong support for H1. In the first wave, the article manipulation had a significant impact on each measure. Comments on the environment exhibited a significant polynomial linear contrast ( $t = -8.59$ ,  $p < .001$ ) such that comments about the environment decreased as the presence of the environmental frame in the stories decreased. A corresponding pattern was found with respect to the economic and difference scores ( $ts = 7.96$  and  $-10.1$ ,  $ps < .001$ , respectively). A significant fourth-order contrast was also observed for the two latter variables ( $ts = -2.52$  and  $2.69$ ,  $ps = .01$ , respectively). The between-groups contrast tests indicated that the conflict group's comments were essentially indistinguishable from those given by subjects reading the article containing a moderate environmental emphasis. That is, the environment frame did not appear to have an effect until its emphasis was particularly strong. On the other hand, there was very little difference between the comments offered by readers of the two articles emphasizing the economic frame, but they both were significantly different from those offered by subjects in the other conditions.

**TABLE 1**  
*Interpretation of Large Hog Farm Issue*

	Environment Group Event			Industry Group Event		F	$\eta^2$	n
	Strong Version	Moderate Version	Conflict	Moderate Version	Strong Version			
Wave 1								
Environ.	.56 <sub>a</sub> (.31)	.40 <sub>b</sub> (.25)	.40 <sub>b</sub> (.28)	.29 <sub>c</sub> (.24)	.22 <sub>c</sub> (.23)	20.05**	.16	439
Econ.	.16 <sub>a</sub> (.21)	.30 <sub>b</sub> (.22)	.28 <sub>b</sub> (.27)	.42 <sub>c</sub> (.26)	.44 <sub>c</sub> (.31)	17.95**	.14	439
Difference	.40 <sub>a</sub> (.44)	.10 <sub>b</sub> (.38)	.12 <sub>b</sub> (.46)	-.13 <sub>c</sub> (.41)	-.21 <sub>c</sub> (.42)	28.13**	.21	439
Wave 2								
Environ.	.44 <sub>a</sub> (.37)	.41 <sub>a</sub> (.34)	.36 <sub>a</sub> (.36)	.32 <sub>a</sub> (.29)	.28 <sub>a</sub> (.33)	1.91	.03	290
Econ.	.15 <sub>a</sub> (.25)	.18 <sub>a</sub> (.26)	.21 <sub>ab</sub> (.28)	.26 <sub>ab</sub> (.29)	.33 <sub>b</sub> (.35)	3.92**	.05	290
Difference	.29 <sub>a</sub> (.44)	.23 <sub>a</sub> (.22)	.14 <sub>ab</sub> (.27)	.05 <sub>ab</sub> (.26)	-.05 <sub>b</sub> (.31)	4.76**	.06	290

*Note:* Results of ANCOVA tests using proportion of story read and story recall as covariates. The "difference" variable is calculated by subtracting economic frame comments from environmental frame comments. Entries in parentheses are standard deviations. Means with no subscripts in common differ with  $p < .05$  in planned comparisons.

\*  $p < .05$ ; \*\*  $p < .01$

It is important to note that the subjects used in this study appeared to be particularly likely to make comments using an environmental frame. The conflict condition featured an article that gave a relatively balanced account of the hog farm issue. However, the difference score indicates that subjects were more likely to focus on the environmental frame in their comments. There are at least two potential explanations for this pattern. It may be that the information supplied for the environmental frame in these articles was particularly powerful. That is, it may be that these arguments were more credible for the subjects or were particularly memorable for some reason. Unfortunately, we do not have enough information to address this question.

A second potential explanation is that these subjects were particularly prone to think in environmental terms. Fortunately, there are some data available for exploring this suggestion. Fifty-one respondents



**TABLE 2**  
*Evaluations of Large Scale Hog Farms*

	Environment Group Event			Industry Group Event		F	$\eta^2$	n
	Strong Version	Moderate Version	Conflict	Moderate Version	Strong Version			
Wave 1	3.54 <sub>a</sub> (1.2)	3.93 <sub>bc</sub> (1.22)	3.71 <sub>ab</sub> (1.07)	3.77 <sub>b</sub> (1.19)	4.26 <sub>c</sub> (1.12)	8.15**	.06	504
Wave 2	3.62 <sub>a</sub> (1.23)	4.0 <sub>a</sub> (1.33)	3.69 <sub>a</sub> (1.19)	3.87 <sub>a</sub> (.98)	3.88 <sub>a</sub> (1.19)	1.33	.02	363

*Note:* Results of ANCOVA tests using proportion of story read and story recall as covariates. Higher scores on the dependent variables indicate positive feelings toward farms. Entries in parentheses are standard deviations. Means with no subscripts in common differ with  $p < .05$  in planned comparisons.

\*  $p < .05$ ; \*\*  $p < .01$

completed the second wave without participating in the first. Thus, they constitute a non-randomly selected group of people who may be thought of as representing the condition of the other subjects prior to exposure. To be sure, there are many methodological reasons, such as selection bias and history effects, why this comparison should be made cautiously. However, it is interesting to note that among those who offered an interpretation of the hog farm issue (38 respondents), 22% (SD = 34%) of their comments used an environmental frame and only 11% (SD = 24%) used an economic frame. Thus, it may be that environmental considerations were particularly accessible for the subjects participating in this study.

The fourth hypothesis predicted that any patterns observed immediately following exposure to the article would persist over time. The data in the second half of Table 1 suggest that an identifiable effect existed three weeks after the initial exposure. Thus, H4 received some support. There were still significant linear patterns present for the economic frame and difference variables ( $t_s = 3.94$  and  $-4.35$ ,  $ps < .01$ , respectively). However, the between-group contrasts indicate that the significant differences were those between comments made by subjects in the most extreme conditions. Subjects in the strong environmental and strong economic frame articles made comments that were significantly different, and comments in the latter also differed from those made by subjects in the moderate environmental condition. In sum, while the overall strength of the pattern was muted, most of the linear patterns of framing effects observed following the initial exposure were detected three weeks later.<sup>68</sup>

*Evaluation of Hog Farms.* Table 2 presents data relevant to the second hypothesis. Subjects' global evaluations of large-scale hog farms were significantly associated with the frame manipulation in the first wave. Thus, there appears to be substantial support for this hypothesis.

**TABLE 3**  
*Support for Regulation of Large Scale Hog Farms*

	<u>Environment Group Event</u>			<u>Industry Group Event</u>		$\chi^2$	<i>n</i>
	Strong Version	Moderate Version	Conflict	Moderate Version	Strong Version		
<b>Wave 1</b>							
Support	44.1%	29.9%	34.0%	38.0%	20.0%	18.56*	498
Oppose	18.6%	26.8%	21.0%	22.0%	36.4%		
Don't Know	37.3%	43.3%	45.0%	40.0%	43.4%		
<b>Wave 2</b>							
Support	37.7%	27.8%	23.2%	23.0%	12.5%	18.42*	364
Oppose	23.4%	20.8%	15.9%	14.9%	20.8%		
Don't Know	39.0%	51.4%	60.9%	62.2%	66.7%		

\*  $p < .05$ ; \*\*  $p < .01$

The data reveal a significant polynomial linear contrast ( $t = -4.49, p < .001$ ), such that evaluations of farms grew more positive as the emphasis of article content moved from the environmental to the economic frame. Perhaps more interestingly, there was also a significant cubic trend ( $t = 3.35, p = .001$ ). This is reflected in the relative similarity of evaluations by subjects in the conflict and the two moderate frame groups. Whereas the two articles that gave strongly biased accounts of the issue appear to have had a substantial impact on subjects' evaluations of farms, the more moderate versions did not. In practical terms, it appears that changing an article's headline and rearranging the order of paragraphs was not sufficient to alter subjects' feelings about the issue under scrutiny. It took a very unbalanced version of the story, with only a few mentions of the opposing frame, to move subjects in a specific direction.

In the second wave, the effect of the frame manipulation had dissipated. No significant pattern was detected. Thus, there is no support for H4 here. Global evaluations rendered by subjects in the conflict and moderately biased conditions remained essentially unchanged while those in the most extreme conditions appear to have regressed to a more "neutral" state. Paired samples t-tests indicate that for subjects in the conflict and moderate groups, the wave 1 and 2 evaluations do not differ significantly from each other ( $t(68 \text{ to } 74) < 1.2, ps > .20$ ). However, subjects reading the most extreme environmental frame experienced a marginally significant change over time ( $t(78) = -1.81, p = .08$ ). Those reading the strong version of the economic frame experienced a significant change ( $t(70) = 2.94, p < .01$ ).



*Support for Hog Farm Regulation.* The third hypothesis suggests that the balance of opposing advocacy frames should affect the overall level of support for hog farm regulation. Table 3 presents a crosstabulation of support for regulation and the article conditions for both waves. In wave 1, there is a rather clear effect of the manipulation. The more subjects read about the environmental frame, the more likely they were to support the general concept of farm regulation.<sup>69</sup> Thus, H3 was generally supported. Again, the most substantial effects were observed for the difference between strong and moderate presentations of the two sides. There is relatively little difference between subjects in the conflict and moderate framing conditions.<sup>70</sup>

The second wave data in Table 3 tell a substantially different story. Whereas the overall pattern is significant, the influence of article condition on support for regulation is severely reduced. In fact, in terms of opposition to regulation, there are no real differences between groups.<sup>71</sup> Instead, the dominant pattern here is evidence of an effect of the article on subjects' willingness to state a position. Subjects reading articles with greater emphasis on the economic frame and reduced emphasis on the environmental frame were less willing to take any position on the question.<sup>72</sup>

*Need for Cognition.* The fifth hypothesis predicts that subjects' need for cognition will condition the effects of the framing manipulation. All of the ANCOVA analyses reported above were repeated with a dichotomized need for cognition variable added as a second independent factor. In none of the analyses was the test for interaction between the group condition variable and need for cognition statistically significant. In other words, contrary to expectations, the impact of frame dominance was not moderated by subjects' need for cognition.

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## Discussion

All of the data point to a substantial short-term effect of the article manipulation. Subjects' open-ended explanations of the large-scale hog farm issue were influenced by changes in the journalistic frame. Compared to the comments made by those in the conflict and environmental frame conditions, subjects reading event-centered articles stressing the economic frame were significantly more likely to explain the issue in economic than environmental terms. Of the event articles stressing the environmental frame, only the more extreme version appears to have encouraged subjects to place particular emphasis on that interpretation. The strength of this pattern was lower when re-measured three weeks later, but the general outline persisted. Thus, the data indicate that exposure to a single news article on the hog farm issue was sufficient to partially direct the comments made by subjects some time later.

When the analyses turned to an examination of affective evaluations of large-scale hog farms and to expressing opinions about regulating them, the impact of the article manipulation was less dramatic. In the first wave measurement, both sets of attitudinal measures revealed significant effects of exposure. This sort of outcome is perhaps a framing effect, but it may also be thought of as merely short-term persuasion. Indeed, the second wave data indicate that the attitudinal effect of the

manipulation did not persist. On both measures, there was little to no discernable effect of exposure condition.

Within the context of Price and Tewksbury's characterization of framing effects, the transitory nature of the evaluate effects are not very surprising.<sup>73</sup> Their knowledge activation model posits that framing works through manipulating the perceived applicability of certain constructs for interpreting political issues and actors. It is the mental connection people make between issues and ideas that is at the heart of framing effects. The cognitive response data indicate that three weeks after subjects' exposure to a single news article about a potentially *obscure political issue, the relative weight of frames in the story still mattered*. That is, news accounts appear to have considerable power to influence audience beliefs about the sorts of things they should remember about public issues, events, and people. Of course, we may discuss the cognitive response patterns as framing effects, but we must turn to attitude change theory to interpret the attitudinal processes.

From the message-learning approach, acceptance of a message's arguments should precede attitude change.<sup>74</sup> It appears that in wave 2, subjects partially accepted the basic frames suggested by some of the articles without having taken the step toward attitude change. In the language of persuasion research, changes in the news frames (i.e., from *conflict to event-centered reporting*) resulted in changes in the position and number of arguments by the two sides. These shifts in emphasis served to produce a short-term change in affect. However, it appears that subjects forgot their initial judgments and the arguments on which they were based. Thus, when re-tested three weeks later, the initial effects had dissipated.

One pattern of note in the open-ended thought listing was the across-the-board preponderance of comments about the environment. This result appears to highlight the importance of the interaction between audiences' accessible considerations and the presence of frames in the news. It may be that the audience here was prepared to think in terms of *one frame in particular*. Only a relatively unbalanced presentation was able to move them beyond their existing tendencies. As one might expect, given the findings of past research in persuasion,<sup>75</sup> the applicability process of framing does not operate in isolation. What audiences know and believe prior to exposure (i.e., what is accessible to them) has an important influence on the effect of frames in the news. The implications of some frames may map easily onto what is accessible to audiences. In that case, a frame serves to elevate the activation of considerations that may have been present by default. However, when a frame presents a new perspective, it has the power to produce a substantial *redirection* of what is considered applicable to the issue in question. In terms of *creating opinion change or other long-term effects, it may be that issue frames have their most dramatic impact when they suggest novel associations*.

Naturally, there are some limitations to this study. The generalizability of research using student samples is often open to question. College undergraduates undoubtedly differ from others in terms of news use, political knowledge and interest, and a number of



additional factors. Had a more representative sample been used, we might have seen different results.<sup>76</sup> Another limitation of the study is the rather artificial nature of the exposure conditions. Subjects were not given an entire newspaper, nor were they allowed to choose what and whether they wanted to read. It is likely that their level of attention to the hog farm article was greater than it might have been in a normal context. The only attempt to mitigate this artificiality came from the use of a pre-exposure "filler" article. The hope was that this initial task might have placed subjects in a slightly more naturalistic reading mode by the time they reached the manipulated article. Unfortunately, it is not possible to determine what effect, if any, this had on the subjects.

Using identical dependent measures in the immediate posttest and in the subsequent retest could be cause for some concern. It may be that subjects were able to recall their initial set of judgments and open-ended comments three weeks later. While over-time effects of framing have not been studied, findings in persuasion studies may be helpful in assessing this threat to validity. Research in persuasion has examined the persistence of both conclusions and memory for persuasive arguments. That separation of effects is roughly analogous to the evaluation and interpretation effects in the present study. In general, persuasion research has found that memory for a message's conclusions persists longer than memory for the message's arguments.<sup>77</sup> That is different than the pattern observed here (perhaps because the article manipulation had a more substantial impact on interpretations than on attitudes), where attitudinal effects disappeared at Time 2 but cognitive effects persisted. What is more, bivariate correlations of open-ended comments at Time 1 with those rendered at Time 2 show that, for those offering comments in both waves, only about 10% to 15% of the variance in Time 2 interpretations of the issue can be explained with Time 1 comments (analyses not shown). Thus, while subjects may have remembered their initial comments and were motivated to be consistent on the retest three weeks later, there is little evidence that such a tendency substantially biased the test of individual frame persistence. Nonetheless, the possibility of some artifactual explanation of the frame persistence cannot be entirely ruled out.

Only one issue context was studied here, and more research is needed to determine whether the results generalize to other domains and message contexts. One dimension that was likely important in the present study was the relative novelty of the hog farm issue. While some of the student subjects in the study probably had an interest in the environmental and agribusiness elements of this issue, we assume that the majority of them would have had little prior exposure to it.<sup>78</sup> Thus, it is unclear in the present context whether the framing effects exhibited here would be found with respect to a more mainstream topic. On a theoretical level, it may be that things might have gone differently had this been an issue subjects considered very important or one with which they were very familiar.<sup>79</sup> The apparent strength of the environmental advocate frame in this study suggests that what news audiences bring to the exposure situation has an important influence on the impact of frames they encounter. One would expect a single news story to have



little effect on audiences' understanding of well-rehearsed political issues. However, prior research has indicated that even such familiar topics as poverty and free speech are open to framing effects.<sup>80</sup> Research adopting the methods used here may be helpful in fleshing out the different processes of framing that may apply to novel versus familiar issues.

*Future research might also explore whether issue framing has a different character at the local than at the national or international levels.* Other areas of political communication research that have focused on the distinction between local and national issues have observed some important differences in how the various processes operate. For example, Delli Carpini and Keeter have found that whereas men often score higher on general tests of political knowledge, women score higher when questions about local issues are included in the measures.<sup>81</sup> The differences between local and national news may involve more than just political knowledge, of course. An issue's personal relevance, the accessibility of relevant constructs suggested by the issue, and the likelihood of non-media exposure to frame elements are just some of the factors that may affect how local issue framing operates.

The present study has implications for macro-level analyses of the role of the news media in elite discourse. This study demonstrated what may happen at the intersection of journalistic news values and issue advocate activity. Admittedly, not every possible condition and rendering was represented here, but the results are suggestive of how journalistic decision making can influence public interpretations of a policy debate. Starting with two competing advocacy frames, the story manipulations represent different paths journalists could take. The "balanced" condition very roughly represented the conditions that exist when advocates engage in policy discussion on neutral ground (a legislative hearing) and journalists apply a conflict frame to the story. The other conditions equally roughly represent what may happen when journalists report advocate-sponsored pseudo-events. The articles most similar to the conflict story in this study contained an equal number of mentions of the two sides, but the sponsor of the respective media events shifted, causing a change in headline and the article's lead. Consequently, the amount of prominence given to the respective opposing advocate frame was reduced. This difference resulted in a significant shift in how audiences interpreted the issue in question.

What this means is that the journalistic frame of conflict was associated with more balanced audience interpretations of the issue. While many communication scholars decry the use of the conflict media frame,<sup>82</sup> it may be less likely than others to carry one advocate frame at the expense of another.<sup>83</sup> Of course, the situation constructed here was relatively stylized. In practice, the level of balance produced by event and conflict frames undoubtedly varies greatly. In any event, that is an empirical question in need of more attention.

## Groups Clash in Senate Hog Farm Hearings

By CHRIS MATHEWS  
STATE CAPITAL BUREAU

The Illinois Stewardship Alliance and the Illinois pork Producers committee held the meeting in response to the opposing views represented by the two groups. Five committee members attended, including Chairman Jack Pinsky, R-Bloomington.

The Illinois Stewardship Alliance claims that large livestock facilities create an increased potential for pollution and other environmental problems. The Illinois Pork Producers Association claims that larger farms increase efficiency and farm survival rates.

Illinois, the fourth largest hog-producing state, produces 4.7 million hogs per year and has about 500 farms with hog populations over 2000.

According to the alliance spokesperson, Kim Theide, these pork producers create an unregulated industry aiming for predictability and control.

"If these mega-hog farms are behaving like factories," Theide said, "they should be regulated like factories."

Julie Gamza, president of the Illinois Pork Producers Association, said the main focus should be on who owns the farms and what defines a family farm.

"There are many traditional farm families," Gamza said, "that have adapted to the changing times and focused marketing alliances or coop-

eratives. IPPA is concerned that these farm families could be put out of business if large farms continue to be attacked and scrutinized."

The Alliance claims that the environmental harm is too great. Hog waste contains more concentrated organic matter—nitrates, copper, antibiotics, and other chemicals harmful to humans in large doses—than human waste, said John Brink, vice-chairperson.

"The danger comes from the hog lagoons which store the immense amount of manure produced on these giant farms," Brink said. "The hog lagoons tend to rupture, spilling out over neighboring land and into water supply."

Other states already experienced such spills, Brink said. Since June 1995, Iowa, Minnesota, Missouri, and North Carolina recorded more than 20 manure spills, including a 25-million gallon lagoon spill in North Carolina,

he said.

The Alliance calls for statewide criteria that prevent the construction of large livestock farms in populated areas and environmentally sensitive areas, Theide said.

The Pork Producers oppose the alliance's plan due to high maintenance costs put on farmers.

According to Dan Weitz, vice-president, "The little hog farmers are exiting a business that doesn't give them a good living. They can't produce more pork with their existing resources, and pork prices can't go up because of competition from poultry, aquaculture, and other hog-exporting countries."

"The whole thing is driven because of economics," he said. "We're a lot like gas stations. Back in the '60s, there were a lot of mom and pop gas stations. Now they're few and far between. The same economic forces are affecting agriculture and tighter

profit margins are leading to larger farm operations."

That is where the large scale hog facilities come in. A University of Missouri study said 80,000 well-managed sows provide 2700 permanent jobs and \$200 million in personal income each year, Weitz said.

"Building the large hog units in the Midwest," Weitz said, "makes sense, long term, because we can finish the pigs, keeping our packing plants open and providing more jobs."

"IPPA continues to work to ensure that pork producers of all sizes have an opportunity to raise hogs at a profitable level in the future," Gamza said.

The sub-committee avoided taking action, but hearings continue in late April. With the producers' mission of commitment and the alliance's push for regulation, neither side shows signs of retreat.

## NOTES

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2. William A. Gamson, *Talking Politics* (Cambridge, Great Britain: Cambridge University Press, 1992).

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30. Pan and Kosicki, "Framing Analysis."

31. Rhee, "Strategy and Issue Frames."

32. Percy H. Tannenbaum, "The Effect of Headlines on the Interpretation of News Stories," *Journalism Quarterly* 28 (1951): 189-97.

33. Ann Hill Duin, Duane H. Roen, and Michael F. Graves, "Excellence or Malpractice: The Effects of Headlines on Readers' Recall and Biases," *National Reading Conference Yearbook* 37 (1988): 245-50, found that people who read a positive headline responded more favorably to a story than those who had read a negative headline for the same story.

34. Price and Tewksbury, "News Values and Public Opinion"; Nelson, Clawson, and Oxley, "Media Framing of Civil Liberties Conflict" take a similar approach.

35. Price and Tewksbury, "News Values and Public Opinion"; one of the first to label the media priming effect was Shanto Iyengar and Donald Kinder, *News That Matters: Television and American Opinion* (Chicago: University of Chicago Press, 1987).

36. Nelson, Clawson, and Oxley, "Media Framing of Civil Liberties Conflict"; Price and Tewksbury, "News Values and Public Opinion."

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38. For example, Carl I. Hovland, Irving L. Janis, and Harold H. Kelly, *Communication and Persuasion: Psychological Studies of Opinion Change* (New Haven, CT: Yale University Press, 1953); Richard E. Petty and John T. Cacioppo, *Communication and Persuasion: Central and Peripheral Routes to Attitude Change* (NY: Springer-Verlag, 1986).

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42. For example, Price, Tewksbury, and Powers, "Switching Trains of Thought"; Iyengar, *Is Anyone Responsible?*

43. Kinder and Sanders, "Mimicking Political Debate," provide a powerful example of this result. They find that survey questions using different frames opposed to affirmative action can activate strikingly different considerations without having a net impact on support for affirmative action policies.

44. Richard E. Petty, Thomas M. Ostrom, and Timothy C. Brock, eds., *Cognitive Responses in Persuasion* (Hillsdale, NJ: Erlbaum, 1981).

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  49. For example, Kinder and Sanders, "Mimicking Political Debate"; Shah, Domke, and Wackman, "To Thine Own Self be True"; Nelson, Clawson, and Oxley, "Media Framing of Civil Liberties Conflict."
  50. Price, Tewksbury, and Powers, "Switching Trains of Thought"; and Rhee, "Strategy and Issue Frames" are exceptions to this generalization. Both studies included a control condition.
  51. There are some caveats to that, of course. See Petty and Cacioppo, *Attitudes and Persuasion*.
  52. Fico and Cote, "Fairness and Balance."
  53. Daniel J. O'Keefe, *Persuasion: Theory and Research* (Newbury Park, CA: Sage Publications, 1990).
  54. Curtis P. Haugvedt and Duane T. Wegener, "Message Order Effects in Persuasion: An Attitude Strength Perspective," *Journal of Consumer Research* 21 (June 1994): 205-218.
  55. Douglas M. McLeod and Benjamin H. Detenber, "Framing Effects of Television News Coverage of Social Protest," *Journal of Communication* 49 (summer 1999): 3-23.
  56. Petty and Cacioppo, *Communication and Persuasion*.
  57. Petty and Cacioppo, *Communication and Persuasion*, 6.
  58. John T. Cacioppo and Richard E. Petty, "The Need for Cognition," *Journal of Personality and Social Psychology* 42 (1982): 116-31.
  59. Petty and Cacioppo, *Communication and Persuasion*.
  60. The wave 1 dependent variables showed no significant differences between those who eventually dropped out of the panel and those who completed both waves.
  61. These subjects were not present in the classrooms during the first wave. There were slightly more males than females in this group (52%), but their class profile matched those of the other groups.
  62. Balance was determined by a commonly used formula that counts the number of times each side or its frame was mentioned. Each advocacy group's score was supplemented with an additional sum that represented the number of mentions that had been made in the first few paragraphs of the article. This latter component represents the influence of prominent placement in the lead of a news story. Finally, the total for one side of the debate was subtracted from that of the other. Thus, low scores on this balance measure represented relatively equal presentation of two the frames.
  - Fico and Cote, "Fairness and Balance," use a similar method of calculating news articles' structural balance.
  63. As discussed above, the primary goal of the article manipulations was to recreate how conflict and event-centered news articles may communicate advocate frames. This necessitated altering the conflict condition article by both changing the headline (to mention the sponsored event) and by rearranging the order of the frames and their elements. Unfortunately, this created something of a confound, because we cannot now isolate the independent effects of these two changes. The



manipulation used here may be desirable from the perspective of external validity, however, since headline and content changes should occur in actual news practice (see Fico and Cote, "Fairness and Balance"). In addition, the two event stories for each advocate perspective use the same headline. Any differences in the effects of these two versions reflect the influence of changes in the advocate frame emphasis (from a relatively balanced to a skewed presentation).

64. Because some comments referenced more than one subject, the coder recorded up to two topics per thought. Only a small proportion of thoughts contained more than one topic.

65. Adapted from Elizabeth E. Perse, "Predicting Attention to Local Television News: Need for Cognition and Motives for Viewing," *Communication Reports* 5 (winter 1992): 40-49; this set is, itself, taken from the 45-item scale developed by Cacioppo and Petty, "The Need for Cognition."

66. Subjects were asked to name both of the advocacy groups, the *national rank of the state in terms of hog production*, the name of the university whose report was cited by the Pork Producers Association, and one of the states described by the Stewardship Alliance as having experienced a large manure spill.

67. Thus, the average subject read 71% of the article. Fifty-five percent of subjects reported reading the entire article.

68. One possible explanation for the persistence of cognitive effects is that subjects received information about hog farms in the time between data collection waves. This information may have reinforced subjects' original cognitions. However, we do not believe this is a likely problem. No local newspaper articles on the hog farm issue appeared during the study period.

Additionally, an item in the wave 2 questionnaire asked respondents whether they had heard anything about the hog farm issue in the interval between waves. Only 15% of subjects indicated they had heard something about the issue. Analyses separating these subjects from the others revealed no effect of this exposure on wave 2 responses. Given the relatively low power of these tests, however, the potential for some biasing factor should not be definitively ruled out.

69. The chi-square statistic used for evaluating the significance of the data pattern is a rather blunt instrument in this case. A logistic regression analysis (data not shown) predicting the probability that subjects would support rather than oppose regulation revealed a significant effect of the experimental condition (when used as an interval-level variable).

70. A logistic regression analysis treating experimental condition as a categorical variable was also performed (data not shown). Contrasts revealed that the difference between strong and moderate forms of each frame emphasis served as significant predictors of the probability of support.

71. Logistic regression analyses paralleling those described above (data not shown) revealed no effect of the article manipulation on the probability that subjects would support rather than oppose regulation.

72. In retrospect, this result may be a partial function of the content of the two frames. While the arguments used to support the environmental frame were explicitly focused on increasing state oversight, their counterparts used to support the economic frame were merely supportive of the industry. They were less clearly aimed at the issue of regulation. Thus, subjects exposed to that condition might have been less well equipped with justifications for both supporting and opposing regulation.

73. Price and Tewksbury, "News Values and Public Opinion."

74. Hovland, Janis, and Kelly, *Communication and Persuasion*. Beliefs as the building blocks of attitudes is common in other models, as well. See Fishbein and Ajzen, *Belief, Attitude, Intention and Behavior*.

75. Petty and Cacioppo, *Attitudes and Persuasion*.

76. However, it should be noted that a number of prior studies have observed framing effects in student samples. See Davis, "The Effects of Message Framing"; Price, Tewksbury, and Powers, "Switching Trains of Thought"; Nelson, Clawson, and Oxley, "Media Framing of Civil Liberties Conflict"; and Shah, Domke, and Wackman, "To Thine Own Self be True." Shah, Domke, and Wackman, in particular, found framing effects in both the student and non-student samples they tested.

77. Hovland, Janis, and Kelly, *Communication and Persuasion*; Petty and Cacioppo, *Attitudes and Persuasion*.

78. We had one question in the wave one questionnaire that attempted to assess pre-exposure orientation toward environmental issues and agribusiness. Subjects were asked to indicate, on 6-point scales, how much they felt they knew about a range of subjects. Among the prompts were "animal sciences" and "environmental studies." The mean response to the first of these items was 2.62 (SD = 1.29; 1 was the lowest response option) and to the second 3.02 (SD = 1.21). Thus, self-perceived knowledge was relatively low in both areas. To determine whether this variable conditioned the effects of the exposure, dichotomized versions of both items (using median splits) were added to all ANCOVAs reported earlier.

None of the interaction tests was significant. Thus, this admittedly weak measure of pre-exposure orientations suggests that the results we obtained were not a partial function of prior knowledge. Clearly, future research should utilize more definitive tests of this possibility.

79. We have some very limited evidence that speaks to this issue. A set of three measures late in the questionnaire (after the exposure and the measurement of the dependent variables) assessed subjects' perceptions of this issue's personal relevance. They were averaged to form a 6-point scale (M = 2.21; SD = 1.18; 1 was the lowest response option). When a dichotomous version of this variable (using a median split at 2.17) was added as an independent factor to all ANCOVAs, it failed to interact with exposure condition. Thus, there is the suggestion that prior experience with this issue may not have affected the findings reported here. Unfortunately, the late placement of the items in the questionnaire and the heavy skew to the resulting scale substantially lower its usefulness.



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80. For example, Iyengar, *Is Anyone Responsible?*; Nelson, Clawson, and Oxley, "Media Framing of Civil Liberties Conflict."

81. Michael X. Delli Carpini and Scott Keeter, *What Americans Know About Politics and Why it Matters* (New Haven, CT: Yale, 1996).

82. Bennett, *News: The Politics of Illusion*; Patterson, *Out of Order*.

83. Fico and Cote, "Fairness and Balance."

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