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The Effects of News Frames on Readers' Thoughts and Recall

This study investigated whether and how journalistic news frames affect readers' thoughts about and recall of two issues. A sample of 187 participants was randomly assigned to one of four experimental framing conditions, which included (a) conflict, (b) human interest, (c) attribution of responsibility, and (d) economic consequences, as well as a control condition. Each participant was presented with two newspaper stories that dealt with two socially and politically pertinent issues in Europe: crime and the introduction of the euro, the common European currency. Each story had an identical core component, whereas the title, opening paragraph, and closing paragraph were varied to reflect the frame. The study found that frames played a significant role in the readers' thought-listing responses, and they defined the ways that readers presented information about both issues. The results showed that the human interest news frame can have negative consequences for recall.

Social scientists from a variety of disciplines have attempted to define the concept of framing, some by focusing on how news is presented, and others by focusing on how news is comprehended (for reviews, see McCombs, Shaw, & Weaver, 1997; Semetko & Valkenburg, 1998). A media frame is a particular way in which journalists compose a news story to optimize audience accessibility. Research into media frames (e.g., Edelman, 1993; Entman, 1991, 1993; Gruber, 1988, 1990, 1993; Neuman, Just, & Crigler, 1992; Norris, 1995; Patterson, 1993; Semetko & Valkenburg, 1998) investigates the prevalence of specific frames in the news and how certain issues are framed. This research assumes that journalists unavoidably frame or structure their representations of political events to make them accessible to a large audience. Reporters have to tell a story within a limited time or space. They use certain

frames to simplify and give meaning to events, and to maintain audience interest.

An audience frame can be defined as a schema of interpretations that enables individuals to perceive, organize, and make sense of incoming information (Pan & Kosicki, 1993). Research into audience frames (e.g., Cappella & Jamieson, 1996; Iyengar, 1991; Iyengar & Simon, 1993; Neuman et al., 1992; Price, Tewksbury, & Powers, 1997) investigates how and to what extent specific media frames influence readers' or viewers' perceptions of certain issues. It attempts to reveal the extent to which certain audience frames are replications of media frames (Scheufele, 1999). Our experiment fits in this research tradition and investigates whether and how specific media frames can establish similar audience frames and influence recall. These types of effects—whether the salience of certain attributes (including frames) in media content affects audiences' interpretation of news stories—have recently been described as second-order agenda-setting effects (McCombs et al., 1997).

Although it is conceivable that journalists can use a multitude of ways to frame the news, the literature seems to point to at least four ways in which news is commonly framed: (a) by emphasizing conflict between parties or individuals (conflict frame); (b) by focusing on an individual as an example or by emphasizing emotions (human interest frame); (c) by attributing responsibility, crediting or blaming certain political institutions or individuals (responsibility frame); and (d) by focusing on the economic consequences for the audience (economic consequences frame).

The *conflict* frame emphasizes conflict between individuals, groups, or institutions (Neuman et al., 1992). It has been observed that political discussion among the elite during election campaigns reduces complex substantive political debate to overly simplistic conflict (Patterson, 1993). Framing politics as a conflict is not confined to election campaigns, however; it is also widely used during routine news periods. The conflict frame is conceptually related to what is called strategy coverage (Jamieson, 1992; Patterson, 1993). This kind of coverage makes winning and losing the central concern; the language of wars, games, and competition is featured, with an emphasis on the performance and style of a party or an individual (Jamieson, 1992).

The *human interest* frame brings an individual's story or an emotional angle to the presentation of an event, issue, or problem. Personalizing an issue contributes to the narrative character of news. As the market for news everywhere becomes more competitive, journalists and editors are at pains to produce a product that captures and retains audience interest (Bennett, 1995). Framing news in human interest terms is a way to personalize, dramatize, and emotionalize the news.

The *responsibility* frame presents an issue or problem in such a way as to attribute responsibility for causing or solving a problem to the government or to an individual or to a group. The U.S. news media have been credited (or blamed) for shaping public understanding of who is responsible for causing or solving key social problems. In the case of poverty in the United States, for example, the audience has come to hold the poor mother on welfare responsible for her fate rather than the government or the system (Iyengar, 1987). In countries with strong social welfare systems, however, the news media attributes the responsibility for social problems to some level of government (Semetko & Valkenburg, 1998).

The *economic consequences* frame presents an event, problem, or issue in terms of the economic consequences it will have on an individual, group, institution, region, or country. News is often framed in terms of the actual or potential economic impact or consequences on the audience (Neuman et al., 1992). The economic impact of an event has an important news value (Graber, 1993), and it has been suggested that news producers often use the consequence frame to make an issue relevant to their audience (Gamson, 1992).

There seem to be contradictory hypotheses about the influence of frames on audience attitudes and perceptions. Some observers believe that news framing of political issues has no discernable effect on audience perceptions of the government or the press (e.g., McCubbins, 1992). Others, however, argue persuasively that certain news frames have a profound influence on the audience. It has been argued, for example, that the conflict frame in the news (or strategic coverage) can activate cynicism and mistrust (Cappella & Jamieson, 1996), and can distract the public from the political process (Jamieson, 1992; Patterson, 1993).

Several earlier experiments have examined the impact of one or more news frames on audience perceptions and attitudes (Cappella & Jamieson, 1996; Iyengar, 1987, 1991; Price et al., 1997). Cappella and Jamieson investigated the effect of strategically framed news—that is, news framed in terms of winning and losing. In their experiment, each participant watched five half-hour news segments. The researchers edited one story on the 1991 Philadelphia mayoral race into each news segment. One group of participants received news about the election framed as problems facing the city and the proposed solutions, a second group saw segments emphasizing how a candidate's position either provided an advantage or disadvantage in securing votes, and a third group viewed the same newscast with a story about a nonmayoral local event. The group that saw news segments framed strategically reported higher levels of cynicism about the campaign than did the group under the other experimental conditions.

Although Iyengar (1987) did not measure explicitly for the existence of a responsibility frame in the news, compelling evidence based on experiments that tested media effects led to the conclusion that the U.S. news media shaped public understanding of who is responsible for causing or solving key social problems such as poverty. Iyengar (1991) argued that television news formats—by covering an issue or problem in terms of an event, instance, or individual (episodically), rather than in terms of the larger historical social context (thematically)—encouraged people to offer individual-level explanations for social problems. Thus, experiments showed that audiences held poor women on welfare to be responsible for their fate rather than the government or the system.

In a more recent experiment by Price and colleagues (1997), the differential impact of three, rather than a single, news frame was investigated. A sample of students responded to a fictitious story about the state funding of their university. They were randomly assigned to different versions of the story, all containing the same core of information but varying in their opening and closing paragraphs in accordance with the frame employed, which was either conflict, human interest, or personal consequences. Immediately after reading the story, the students were asked to write down all the thoughts and feelings that they had while reading the story. The different news frames significantly affected both the topical focus and evaluative implications of the thought-listing responses.

Although Price, Tewksbury, and Powers's (1997) study provides compelling evidence that the frames in the news influenced the topical focus of respondents' thoughts, the study is limited in two ways. First, as the authors acknowledged, their study dealt with a story describing the possibility that new state revenue for higher education might not be increased. This topic was chosen because it was likely to be of interest to the student participants in the study. However, because the study did not use real topics from stories in the daily news environment, it is questionable whether the study can be the basis for generalizations to real life issues. Second, Price, Tewksbury, and Powers's study used only one highly salient issue as stimulus material, so it is still an open question as to whether the results can be generalized to issues of lower salience.

Our study represents an attempt to fill the gaps in prior research. First, we investigated the impact of four different news frames that have been recurrently found in the news (e.g., Neuman et al., 1992; Semetko & Valkenburg, 1998): conflict, human interest, responsibility, and economic consequences. Second, unlike Price et al. (1997), we presented the respondents in our experiment with real issues that were prominent in the news during the

time of data collection. Third, to investigate the potential generalizability of framing effects across issues, we presented our readers with two, rather than one, news stories. One story was about an issue that is more salient—increasing crime rates—and the other was about an issue that is less salient—European integration and the introduction of the euro as common currency. The first aim of our study was to examine the extent to which the four news frames can influence readers' thoughts about crime and European integration. The following were the first hypotheses:

Hypothesis 1: Exposure to a news story that is framed in terms of conflict stimulates conflict-related thoughts in the reader.

Hypothesis 2: Exposure to a news story framed in term of human interest stimulates human-interest-related thoughts in the reader.

Hypothesis 3: Exposure to a news story in which the government is blamed for causing or solving a problem stimulates thoughts in which the reader attributes responsibility accordingly.

Hypothesis 4: Exposure to a news story framed in term of economic consequences stimulates economic-consequences-related thoughts in the reader.

The Impact of News Frames on Readers' Recall

Unlike earlier experiments, we not only investigated the impact of news frames on readers' thoughts, we also studied the impact of frames on readers' ability to recall the information presented in the story. The impact of news frames on readers' recall has not been the subject of systematic research. In our view, it is just as conceivable that news frames influence audience recall as they influence readers' thoughts. It could be that certain frames, for example, a conflict frame or a human interest frame, which are often used to entice audiences, result in better recall of story information. On the other hand, it is also possible that these frames diminish readers' recall because they can distract readers or viewers from the facts.

Although there is no direct evidence to suggest whether and how certain news frames may affect respondents' recall, a number of studies have touched on the research question with mixed results. A series of studies by Gruber (1990), Gunter (1987), and Robinson and Levy (1986) have shown that news stories that are personalized and close to home are better recalled. Other research has demonstrated that recall is personality driven; in other words, personalities or prominent individuals appearing in the news greatly enhance the chance of story recall (Price & Czilli, 1996). Finally, the presentational features of television news can be effective in enhancing recall, although the extent of influence is dependent on how knowledge or recall is

measured (Brosius, 1989; Neuman, 1976). However, there is evidence to suggest that highly emotional news stories diminish, rather than enhance, recall (Mundorf, Drew, Zillmann, & Weaver, 1990), at least in the short term. Because of this considerable controversy in the literature, we were not able to formulate specific hypotheses about the nature and direction of the effects of specific news frames on readers' recall. Our first and only research question therefore asked the following:

Research Question 1: Does exposure to differently framed news stories influence readers' ability to recall the information presented in these stories?

Method

Sample

One hundred eighty-seven students from undergraduate courses in social and behavioral sciences at the University of Amsterdam participated in the experiment. The sample consisted of 67% females and 33% males, who ranged in age from 19 to 29 years ($M = 21.5$, $SD = 2.53$ years). The ratio of females and males in the sample reflects that of undergraduates in the social and behavioral sciences at the University of Amsterdam.

Procedure

The students were informed that the study was about recent issues in the news and that their participation would involve completing a short questionnaire about their thoughts on two news issues. They were then asked to read two different newspaper articles that were created to manipulate four alternative news frames: human interest, conflict, responsibility, and economic consequences. Immediately after reading the articles, they responded to a number of items dealing with their recall of and thoughts on the information presented in the stories.

Stimulus Materials

To improve the generalizability of potential framing effects, we used two dissimilar newspaper stories in each experimental condition. One story was about rising crime rates in the Netherlands. It provided statistics on the prevalence of different types of crimes in the Netherlands during the past 15 years, and it reported that more than half of the Dutch population, in a recent

public opinion survey, stated that they fear going out on the streets at night. The other story dealt with the introduction of the common European currency, the euro. The story was about a euro market held in Berlin where shoppers could exchange German marks for euros in order to experience purchasing goods in the future common European coin. Both issues—crime and the euro (the common currency)—received considerable media attention in the Netherlands during the period of data collection.

Both newspaper stories had four experimental versions. The stories consisted of a core section, and for each of the four experimental framing conditions, the title and the introductory and concluding paragraphs were designed to establish one of four journalistic frames (human interest, conflict, responsibility, or economic consequences). Following Price et al. (1997), the control condition consisted of only the core section of the newspaper stories. The titles and the introductory and concluding paragraphs of the stories in the four framing conditions were similar in length and in style of writing, but they contained information exclusive to that particular frame.

For the creation of the stimulus materials, we relied on a sample of 2,600 real-life newspaper stories that had been collected during the design of our stimulus materials. The sample of newspapers has been used for a content analysis to investigate the prevalence of several different media frames in Dutch news. With the use of the data file of the content analysis, it was easy to identify stories that scored high on one of the four frames investigated in this experiment. We used the most common topics in the news as the basis for our stimulus materials.

Design

The experiment used a 2 (news story: crime vs. euro) \times 5 (framing condition: conflict vs. human interest vs. responsibility vs. economic consequences vs. control) mixed design. The news story was varied within subject; the framing condition was a between-subject factor. Students were randomly assigned either to a control condition, in which they read only the core story, or to one of the four experimental frame conditions. We will briefly summarize the nature of each experimental framing condition.

Conflict frame. In both conflict stories, two actors (groups or individuals) were pitted against one another. They explicitly clashed and reproached one another. The conflict version of the crime article opened and concluded with a clash between a public interest citizens group and an expert (a sociologist) on the best approach to fight crime. The representative from the citizens group advocated harsher punishment and more police in the streets, whereas the

sociologist pointed to the fact that countries with more severe forms of punishment do not have less of a problem with crime. The conflict version of the article about the euro presented the views of proponents and opponents of the euro. One proponent stated that the euro is an advantage for the Netherlands, whereas the opponent made a plea for recognizing the potential negative implications of the introduction of the euro.

Human interest frame. Both human interest conditions showed in detail how an individual was affected by the issue. The crime story introduced a victim, who reported in detail how he suffered for years after a physical assault. The article concluded with an emotional statement from the victim about his current fragile state. The euro story also introduced a victim, but this was a potential one—a person reported realizing that his job at a currency exchange office was at stake due to the introduction of the euro. The man had been in Berlin on vacation during the special euro market, and it reminded him that many exchange offices could close as a result of the introduction of the common currency. After the core paragraphs, the personal implications of the introduction of the euro were elaborated by giving another personal example about how a café owner would suffer from the introduction of the euro.

Responsibility frame. In both responsibility conditions, the Dutch government was blamed for not dealing adequately with the issue. The crime story was introduced by an expert's statement that the crime rate in the Netherlands is increasing because the Dutch government is too passive in dealing with the problem. After the core paragraphs, a spokesperson from the organization Safe Streets supported the expert's argument and attributed responsibility to the government. In the euro story, the article opened with the board member of a major Dutch bank condemning the Dutch government's policy on the euro. His accusations were followed by the core story. The article concluded with a quote from the same man in which the government was blamed for insufficient and ineffective information campaigns. It is worth noting that in our study, this frame was designed to be exclusive from the conflict frame. Although one could argue that blaming the government is also an embodiment of conflict, in our study, to qualify as a conflict frame, the story needed to present more than one party or group or individual that clashed with another. This was not the case in our responsibility conditions.

Economic consequences frame. Both economic consequences stories explicitly referred to the high costs related to the issue. The crime story stipulated that taxpayers ultimately will have to pay for the costs of increasing crime

rates because the number of court procedures, prison stays, and rehabilitation programs will increase accordingly. After the core paragraphs, the story mentioned that there was a plan to initiate a commission to review the costs of increasing crime rates, but this idea was ridiculed by an economic expert. The euro story focused on the costs related to the implementation of the common European currency. The fact that taxpayers will have to pay more taxes to cover these costs was emphasized. After the core story, the article concluded that the public can expect a long and costly trajectory on the way toward the euro.

Measures

Thought-listing responses. Following Iyengar (1987) and Price et al. (1997), thought-listing questions were designed to assess participants' cognitive responses to the news stories that were framed in four different ways. Immediately after reading the two news articles, the participants were asked to list their thoughts about each issue. The questions were worded as follows:

We are interested in how you think about certain issues. You have just read a story about crime (the introduction of the euro). We are interested to hear all your thoughts and feelings about crime (introduction of the euro). Please list all your thoughts about crime (the introduction of the euro) that came to mind while reading.

The participants were instructed that they could list their thoughts as simple keywords and they need not write complete sentences.

Coding of thought listings. To determine where each thought began and ended, we used a propositional analysis as developed by Kintsch (1974; Kintsch and van Dijk, 1978). A proposition (thought) contains a predicate (verb) and one or more arguments (e.g., subject, objects, and adjectives). To take an actual example about crime, the following response was coded as three thoughts: "The law is limited, because lawyers keep manipulating cases. Meanwhile, the problem rapidly gets worse."

To measure the extent to which the experimentally induced news frames were reflected in the thought-listing responses of the participants, we used a content analysis method that was developed in an earlier study to investigate the prevalence of news frames in news stories (Semetko & Valkenburg, 1998). Participants' thoughts were coded by means of 16 questions; their responses were coded as 1 (yes) or 2 (no). Examples of these questions included the following:

- Do the participant's thoughts reflect disagreement between parties or individuals or groups? (conflict frame)
- Do the participant's thoughts provide a human example or "human face" on the issue or problem? (human interest)
- Do the thoughts suggest that some level of government is responsible for the issue or problem? (responsibility frame)
- Is there a mention of the costs or degree of expense involved? (economic consequences frame)

Two independent coders, blind to the experimental conditions, analyzed the thoughts of each respondent. The intercoder reliability, conducted on a subsample of 42% ($n = 78$) of the responses to the 16 framing items, was between 81% and 100% for both the crime and the euro story.

To investigate the dimensional structure of the framing items, we conducted two principal component analyses with varimax rotation, one on participants' responses to the crime stories, and the other on their responses to the euro stories. These analyses yielded identical factor structures for the responses to the crime story and the responses to the euro story. The factor solution explained 58% of the variance of the framing items pertaining to the crime story and 54% of the variance of the items pertaining to the euro story. Two items had to be removed from the scales, one because it did not show any variance in the readers' responses to the crime story, and the other because it loaded no higher than .30 on any of the factors. To keep the scales identical for the responses to both stories, these items were removed from the responses to both stories. The resulting factor solutions for the responses to both stories are presented in Table 1.

Scales were constructed for each of the four frames by averaging the scores on the questions that loaded on the factor that they were defining. The values ranged from .00 (frame not present) to 1.00 (frame present). A high score on the conflict, human interest, and economic consequences scales indicated that there was considerable evidence of these characteristics in the thought listings. A high score on the responsibility scale implied that the respondent suggested that some level of government has the ability to alleviate, or is responsible for, a certain issue or problem. Cronbach's alpha values for the different frames were .78 for the Crime Conflict scale, .76 for the Euro Conflict scale, .65 for the Crime Human Interest scale, .58 for the Euro Human Interest scale, .72 for the Crime Responsibility scale, .68 for the Euro Responsibility scale, .77 for the Crime Economic Consequences scale, and .75 for the Euro Economic Consequences scale.

Recall. To measure the participants' recall of the newspaper stories, six multiple choice questions were designed for each of the two stories. Because

Table 1
Varimax Rotated Factor Solution for the 14 Framing Items

Framing Items	Conflict				Human Interest				Responsibility				Economic Consequences				
					Crime		Euro		Crime		Euro		Crime		Euro		
Conflict																	
Does the answer reflect disagreement between parties, individuals, groups, or countries?	.89	.80			.13				-.04				-.07			-.02	
Does one party, individual, group, or country reprobate another?	.75	.82			-.05				-.04				.03			.07	
Does the answer refer to two sides or to more than two sides of the problem or issue?	.84	.64			-.01				.00				-.09			-.03	
Human interest																	
Does the answer emphasize how individuals and groups are affected by the issue or problem?	.01	.10			.53				.35				.18			.04	
Does the answer provide a human example or a human face on the issue?	-.09	-.19			.70				.44				.00			.02	
Does the answer contain feelings of outrage, empathy or caring, or sympathy or compassion?	-.05	.01			.75				.89				-.10			.07	
Does the answer use adjectives showing feelings of outrage, empathy or caring, or sympathy or compassion?	-.04	.04			.74				.87				-.10			.03	

Responsibility							
Does the answer suggest that some level of the government (Dutch or European) is responsible for the issue or problem?	-.07	.20	-.01	-.02	.63	.78	.04
Does the answer suggest that some level of the government (Dutch or European) has the ability to alleviate the problem or issue?	-.05	-.08	.03	.03	.85	.76	-.04
Does the answer suggest that the problem or issue requires urgent action?	.01	.16	.09	.36	.77	.58	-.07
Does the answer suggest solution(s) to the problem or issue?	.01	-.07	.03	-.14	.63	.69	-.02
Economic consequence							
Is there a mention of the costs or the degree of expense involved?	-.01	.11	-.01	.16	-.06	-.05	.83
Is there a reference to the economic consequences of pursuing or not pursuing a course of action?	-.01	-.03	.13	-.07	-.01	-.01	.77
Is there a mention of financial losses or gains, now or in the future?	-.04	-.09	-.03	.05	-.01	-.08	.87

the recall questions dealt only with the information presented in the core sections of the two stories, the same set of recall items could be administered in each experimental condition. From the five possible answers, only one option was correct. Participants were asked, for example, "What percentage of the Dutch thinks that crime is one of their major concerns?" The possible answers are (a) 60%, (b) 70%, (c) 80%, (d) 30%, and (e) 40%. Respondents' recall of the newspaper articles was measured by totaling the number of correct answers so that the recall scores would range from 0 to 6.

Results

Number of Thoughts by Story and Framing Condition

Our hypotheses stated that exposure to differently framed news stories would influence readers' thoughts on the story or issue. These were addressed by the thought-listing procedures. First, we checked whether one of the two stories or certain framing conditions resulted in a greater number of thoughts. This was not the case, however. A multivariate analysis of variance on the total number of thoughts with the story (crime vs. euro) as the within-subject factor and the framing condition (conflict vs. human interest vs. attribution of responsibility vs. economic consequences vs. control) as the between-subject factor showed no significant differences in the number of thoughts, neither between the two stories, $F(1, 167) = .00, p = .97$, nor between the experimental conditions, $F(4, 167) = .87, p = .48$. The participants listed an average of 3.30 ($SD = 1.48$) thoughts per story.

Readers' Use of Frames

To investigate the effect of news frames on the nature of participants' thoughts in different conditions, we conducted a MANOVA, with the framing condition (conflict vs. human interest vs. responsibility vs. economic consequences vs. control) as the between-subjects factor and the use of frames (i.e., the identified factors of conflict, human interest, responsibility, and economic consequences) and the news story (crime vs. euro) as within-subject factors. In Table 2, the mean scores of the five framing scales are presented.

The MANOVA showed no significant main effect for the story, $F(1, 167) = 1.32, p = .25, \eta^2 = .00$, which meant that the overall level of respondents' use of different frames in their thoughts did not differ for the crime and the euro story. The MANOVA did not yield a significant interaction between the framing condition and the story, $F(4, 167) = .56, p = .68, \eta^2 = .00$, which indicated

Table 2
Readers' Use of Frames by Experimental Condition

Experimental Condition		Readers' Use of Frames in Thought Listings									
		Conflict		Human Interest		Responsibility		Economic Consequences			
		Crime	Euro	Crime	Euro	Crime	Euro	Crime	Euro	Crime	Euro
Conflict (n = 33)	<i>M</i>	.53*	.37*	.03	.04	.03	.04	.02	.03		
	<i>SD</i>	.41	.39	.09	.11	.17	.11	.08	.10		
Human interest (n = 35)	<i>M</i>	.02	.10	.42*	.28*	.09*	.05	.00	.11		
	<i>SD</i>	.10	.19	.29	.28	.16	.13	.00	.21		
Responsibility (n = 35)	<i>M</i>	.03	.02	.07	.10	.20*	.08	.00	.05		
	<i>SD</i>	.17	.11	.16	.16	.29	.19	.00	.17		
Economic Consequences (n = 35)	<i>M</i>	.01	.03	.14	.07	.04	.02	.23*	.33*		
	<i>SD</i>	.06	.12	.23	.14	.11	.13	.33	.37		
Control group (n = 34)	<i>M</i>	.02	.00	.06	.03	.01	.00	.00	.00		
	<i>SD</i>	.11	.00	.12	.08	.09	.00	.00	.00		
Total (N = 172)	<i>M</i>	.12	.10	.14	.10	.08	.04	.05	.11		
	<i>SD</i>	.29	.25	.24	.19	.19	.13	.18	.24		

Note. An asterisk refers to between-condition differences, and they compare *column* values in the table. For example, the two asterisks in the top left-hand cell ($M = .53$; $M = .37$) meant that readers in the conflict condition produced significantly ($p < .05$) more conflict-related thoughts in response to the stories than readers in the remaining experimental conditions. Across conditions, the conflict and human interest frames occurred more frequently in readers' responses than the responsibility and economic consequences frames.

that the two stories elicited similar response patterns in the various framing conditions.

However, the MANOVA did yield a main effect for the use of frames, $F(3, 501) = 8.59, p < .001, \eta^2 = .05$, which meant that certain frames occurred more often than others in response to both stories. Test of within-subject contrast revealed that, across experimental conditions, the conflict and human interest frames occurred more frequently in readers' responses than the responsibility and economic consequences frames (see the bottom row of Table 2). The MANOVA showed a significant interaction between the story and the use of frames, $F(4, 167) = 6.46, p < .001, \eta^2 = .04$, which indicated that certain frames occurred more often in relation to one story than another. More specifically, in thoughts in response to the euro story, participants used the economic consequences frame more frequently, whereas in thoughts in response to

Table 3
Mean Number of Correctly Recalled Items by News Story and Experimental Conditions

News Story		Experimental Condition				Economic Consequences
		Control	Conflict	Human Interest	Responsibility	
Crime	<i>M</i>	3.83	3.24	2.60	3.30	3.40
	<i>SD</i>	1.45	1.44	1.36	1.37	1.42
Euro	<i>M</i>	4.74	4.35	4.32	4.27	4.32
	<i>SD</i>	1.20	1.04	1.27	.96	1.18

Note. The scales ranged from .00 to 6.00. For the crime story, the row values of control, conflict, responsibility, and economic consequences differed from that of human interest, at least at the $p < .05$ level.

the crime story, the human interest and responsibility frames were more prevalent.

Finally, the MANOVA revealed a significant main effect for the framing condition, $F(4, 167) = 13.63, p < .001, \eta^2 = .25$; but more important, it revealed a significant interaction between the framing condition and the use of frames, $F(12, 167) = 35.14, p < .001, \eta^2 = .45$. These effects indicated that readers' thoughts in different framing conditions were influenced largely by the journalistic frames that were employed in the different conditions. As Table 2 shows, the mean scores for the use of frames in thoughts are highly dependent on the experimental conditions.

Post-hoc Scheffé tests revealed that each experimental framing condition had a significant impact on the readers' subsequent use of frames. As Table 2 shows, readers exposed to the control story hardly used any frames. The responses of readers in three out of four experimental conditions were significantly influenced by the experimental treatment that they had received. Both newspaper stories that used a conflict frame led to significantly more conflict in readers' responses. The same pattern was found in two other experimental conditions. The human interest condition resulted in significantly more human interest characteristics in readers' responses to both stories, and the economic consequences frame resulted in significantly more thoughts reflecting possible economic consequences. The only exception was the responsibility framing condition in the case of the euro story. The euro story did not lead to any significant increase in readers' thoughts exhibiting this frame, although the responsibility frame did affect the thoughts of the readers of the crime story. The asterisks in Table 2 indicate which post-hoc tests were significantly different from each other, at least at the $p < .05$ level.

Recall

Our research question asked whether exposure to differently framed news stories influenced the ability to recall news content. To address this question, a MANOVA was conducted with the framing condition (conflict vs. human interest vs. responsibility vs. economic consequences vs. control) as a between-subject factor and the story (crime vs. euro) as a within-subject factor. Table 3 presents the mean number of correctly recalled multiple-choice items for the crime story and the euro story in each of the experimental conditions.

The MANOVA yielded a significant main effect for the story, $F(1, 176) = 88.21, p < .001, \eta^2 = .33$, which implies that the core information of the euro story was recalled significantly better than that of the crime story. The MANOVA yielded a significant main effect for the framing condition, $F(4, 176) = 3.23, p < .05, \eta^2 = .06$, which indicated that the experimental condition had a significant impact on readers' recall of the core information of the newspaper articles. Post-hoc Scheffé tests revealed no significant effects of the framing condition for the euro story. For the crime story, however, these tests revealed that participants in the human interest condition scored significantly lower on the recall questions than participants from any of the other conditions, including the control group. None of the other conditions differed significantly from each other.

Discussion

Our first aim was to investigate whether certain news frames had an effect on readers' thoughts about issues. This was done by presenting readers with two news stories, one story about crime and the other about the introduction of the euro. Both stories were framed in terms of conflict, human interest, attribution of responsibility, and economic consequences. In accordance with our research hypotheses, our results showed that the way in which the news stories were framed had a significant effect on readers' thoughts on both issues. For the crime story and the euro story, we found that (a) respondents who had just read a story framed in terms of human interest emphasized emotions and individual implications in their responses significantly more often, (b) respondents who had just read stories framed in terms of conflict were significantly more likely to express thoughts that involved conflict, and (c) respondents who had just read a story framed in terms of economic consequences focused on costs and financial implications in their thoughts significantly more often. We found that respondents who had just read a story

framed in terms of attribution to responsibility displayed the same frame in their thoughts, but this result was significant only for the crime story. In short, with one exception, the euro story framed in terms of attribution of responsibility, every condition elicited thoughts that mirrored the frames used in the news story.

Our study revealed issue-specific framing effects. In response to the crime story, participants listed more conflict- and human-interest-related thoughts, whereas, in response to the euro story, they listed more thoughts framed in terms of economic consequences. An explanation for these results is that crime is a highly salient issue, which more easily provokes emotional thoughts about events in readers' personal lives. The euro, on the other hand, is essentially an economic and political issue, which triggers more thoughts in relation to economic and financial consequences.

Our second aim was to investigate the impact of news frames on respondents' recall. In the case of the euro story, we found no significant differences between the four experimental framing conditions in readers' story recall. For the crime story, however, the framing condition did significantly affect the ability to recall information. Respondents exposed to news framed in terms of human interest did not remember the core information of the crime story as well as the respondents exposed to the control condition or any of the other experimental conditions (conflict, responsibility, and economic consequences). The emotional nature of the content is one possible explanation why the crime story, and not the euro story, resulted in poorer recall under the human interest condition. The human interest framed crime story was considerably more emotionally compelling than the euro story. The human interest framed crime story gave an elaborate description of a man's personal suffering because he was the victim of a violent assault, whereas the euro story dealt with a person who could potentially lose his job. Violent assaults are obviously more dramatic and emotional than the possibility of unemployment.

Our results suggest that news framed in terms of human interest, often used to make a story more interesting and compelling, can diminish rather than enhance the recollection of information. Why did the information in our human interest framed crime story hinder readers' recall? One possible explanation could be that the emotional story induced cynicism in readers, which in turn made them discount the information presented by the story. Another possible explanation could be that the emotional human interest framed crime story disrupted readers' information-processing capacities so that they could no longer pay attention to and process the factual information in the core story.

Our findings are in line with an earlier study demonstrating that the recall of news stories is diminished if the news story is shown immediately after an emotional human interest story (Mundorf et al., 1990). Our results contradict the conventional journalistic wisdom that a humanizing approach is an effective means of presenting statistical information. They also cast doubt upon arguments by earlier researchers (e.g., Davis & Robinson, 1986) that news content that arouses strong emotions may increase learning.

In conclusion, our study suggests that news frames can exert a significant effect on readers' thoughts about and recall of issues in the news in the short term. Our findings held for the highly salient issue of crime and the less salient issue of the euro, which indicates that claims about framing effects can be generalized across types of issues. News frames give the audience direction on how to conceive of a specific issue or event. Although our student sample might not permit us to draw definitive conclusions about the population as a whole, our study confirms earlier hypotheses that the news media can have the capacity not only to tell the public *what* issues to think about but also *how* to think about them.

Note

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