A fair and balanced look at the news: What affects memory for controversial arguments? ♠

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Abstract

This research demonstrates how prior knowledge may allow for qualitative differences in representation of texts about controversial issues. People often experience a memory bias in favor of information with which they agree. In several experiments it was found that individuals with high prior knowledge about the topic were better able to recall arguments on both sides of a controversial issue (the legality of abortion, US military action in the Persian Gulf, the OJ Simpson case). Being able to integrate new information into a coherent representation seems to be one of the main advantages of prior knowledge on text comprehension. Individuals with less prior knowledge tended to recall more arguments that supported their position. The final two studies extend this finding by manipulating the presentation of the arguments. The results suggest that giving readers an interleaved text (where supporting and opposing arguments are presented in a point/counterpoint fashion) eliminated differences due to knowledge.

Keywords: Argumentation; Text processing; Perspective effects; Prior knowledge

How many of the hijackers who participated in the events of September 11, 2001 were Iraqi? Were weapons of mass destruction found in Iraq? At the end of the first week of January 2003, the Princeton Survey Research Associates conducted a poll for Knight Ridder and asked 1204 Americans, “To the best of your knowledge, how many of the September 11 hijackers were Iraqi citizens?” Of those surveyed, only 17% knew the correct answer: that none of the hijackers were Iraqi. In May 2003, a similar survey was conducted by the Program on International Policy Attitudes (PIPA) at the University of Maryland. Out of their sample of 1256 Americans,
34% believed that the US had found evidence of weapons of mass destruction in Iraq. However, the fact was that the US failed to find any weapons of mass destruction, or even any evidence of a weapons program in Iraq, since investigations began late in 2001. The inaccuracy present in Americans’ answers to these survey questions is striking.

There are of course many reasons why people end up with different understandings of political and controversial events. Where people get their news from, for example, seems to be an important factor. As the PIPA study documented, those who routinely watched Fox News were more likely than average to have misconceptions about these issues. Those who received their news from PBS or NPR were less likely to have misconceptions. Of course, all media sources face the constraint that they need to report information selectively (full accounts of everything that happens would be impossible to communicate). However, beyond simple selection of information, some news sources may spin their information, and highlight certain perspectives, and this can be a source of bias in audience understanding. People can also promote their own bias by selecting news sources that they tend to agree with, or that present news in a style they prefer (simple one-sided messages, uncluttered by evidence or opposing arguments). But beyond these instances of motivated selection of information, at a cognitive-process level, there is a question of how we, as information processors, deal with arguments that we may not agree with. That is, if we were actually given a fair and balanced look at the news, could we process it?

Since the early days of psychology, it has been observed that information which is consistent or congruent with our attitudes, opinions or beliefs is better remembered than opposing information. Bartlett (1932) noted that “When a subject is being asked to remember, very often the first thing that emerges is something of the nature of attitude. The recall is then a construction made largely on the basis of attitude, and its general effect is that of a justification of the attitude.” (pp. 206–207) However, over 50 years and 50 experiments later, empirical findings on “consistency bias” provide no clear support for these ideas, with some studies finding better recall for attitude-supporting information and other studies finding no differences at all, leading Greaves (1972) to conclude that the literature was “unambiguously inconclusive” (See Pratkanis, 1989; Roberts, 1985 for reviews).

The interesting question thus becomes, when does consistency bias occur? What does it seem to depend on? What contexts is it found in? When is it eliminated or reversed? Using a cognitive perspective, we can think of the position that someone holds on a controversial topic as a schema. From this approach, we can suggest that consistency bias can emerge at any of several levels of processing based on previous research (c.f. Alba & Hasher, 1983). As mentioned above, schematic processing can occur when people only select or attend to schema-consistent information. This is of course one source of bias, but it occurs largely outside of cognitive processing. Assuming that all information is attended to, then other consistency effects may occur as incoming information is integrated into an ongoing representation of the situation, which includes making connections to prior beliefs and knowledge (Kintsch, 1988). The focus of the current paper is whether and how consistency bias may occur due to integration processes.

In general, schema-inconsistent information has been shown to take longer to process and is less likely to be integrated into mental representations (Baillet & Keenan, 1986; Smith & Swinney, 1992; Whitney, Budd, Bramucci, & Crane, 1995). There are some contexts, however, in which schema-inconsistent information can be memorable. In research on memory for scripts such as eating in a restaurant, Bower, Black, and Turner (1979) found superior recall for schema-inconsistent events, like a waiter spilling soup in a customer’s lap, as opposed to schema-consistent events like a waiter filling water glasses. Similarly, in remembering lists of personality factors, Hastie and Kumar (1979) found that when lists included a small number of factors inconsistent with an initial prototype, those inconsistent attributes were recalled better than the consistent ones. Further, facial recognition is better for unusual and atypical faces than for more typical faces (Light, Kayra-Stuart, & Hollander, 1979). In these cases, schema-consistent information is highly familiar and easily processed. On the other hand, when schema-inconsistent stimuli are noticed they may appear to “pop out” (Van Overschelde, Rawson, Dunlosky, & Hunt, in press), they may be noted as “weird” or tagged (Graesser, Woll, Kowalski, & Smith, 1980), encoded in more detail, with more effort, and may be more “deeply” processed (Schank & Abelson, 1977). Under these conditions, schema violations may in fact become more memorable. What is striking is that in all these instances in which schema-inconsistent or atypical information produces superior memory performance, the subject can be considered an expert, or at least well-practiced and knowledgeable about the domain; scripts are by definition highly familiar event sequences, while personality judgments and face recognition are basic to human interaction. These results suggest that knowledge about a domain may be an important factor in allowing readers to integrate schema-inconsistent or attitude-opposing information. Thus, one possible reason for a failure to find a consistency bias effect overall, may be that consistency bias may be moderated by the possession of or expertise in a domain, which also affects a reader’s ability to integrate new information.

Current conceptions of expertise have stressed that it is not just the sheer quantity of domain-relevant knowledge that separates experts from novices, but
also the organization, integration, and accessibility of that knowledge (e.g. Bedard & Chi, 1992). Ericsson and colleagues (Chase & Ericsson, 1981; Ericsson & Kintsch, 1995; Ericsson & Staszewski, 1989) have advanced a “skilled memory” theory that suggests that as people acquire content knowledge, they also develop mechanisms, like encoding and retrieval structures, that enable them use their knowledge easily. It is argued that the presence of such a mechanism enables experts to readily encode, store, and retrieve information related to their domain, and in essence all of long-term memory can be made accessible. Ericsson and Kintsch have referred to this phenomenon as “long-term working memory” (LTWM, Ericsson & Kintsch, 1995).

One possible consequence of well-developed retrieval structures or LTWM is that recall may be qualitatively different when a reader possesses prior knowledge about the topic. For example, in a study of subjects with different levels of baseball knowledge, Spilich, Vesonder, Chiesi, and Voss (1979) found that the amount recalled from a passage describing two innings of a baseball game increased with knowledge. Further, high-knowledge individuals tended to recall information in “chunks” or “event sequences” as found in other work on expert text comprehension and problem solving (Chase & Simon, 1973; Chi & Koeske, 1983; Voss, Vesonder, & Spilich, 1980). Prior knowledge has also been found to permit readers to make more inferences from text (Fincher-Kiefer, Post, Greene, & Voss, 1988). Thus, the large, integrated and accessible store of knowledge that high-knowledge individuals have to use in their text representations, seems not only to increase the amount of information that can be recalled, but also enhances the richness or quality of retrieval. In particular, prior knowledge on a topic could enable readers to better integrate information that they do not agree with. According to this approach, readers with more prior knowledge of a topic would not need to use their attitude or position on an issue as a basis for encoding or a cue for retrieval. Readers with less prior knowledge, on the other hand, may default to their position on an issue as a basis for their encoding or retrieval. As a result, readers with low prior knowledge would recall more information consistent with their attitude or stance than inconsistent. The present set of studies were designed to test whether prior domain knowledge can reduce, eliminate, or even reverse consistency bias in recall of text. The position taken is that readers with high prior knowledge, because they have the advantage of a well-developed and accessible store of domain knowledge, would not need to use their stance on a topic as a basis for processing the text. Thus, they may be able to integrate both supporting and opposing arguments into their representation or situation model. However, readers who lack a well-developed, accessible store of domain knowledge might have to default to using their stance on an issue as a basis for encoding or retrieval. Thus, low-knowledge readers would be more susceptible to consistency bias in their recall of arguments.

Experiment 1

The present set of studies was designed to examine whether the possession of a large amount of domain knowledge can reduce, eliminate, or even reverse consistency bias in the recall of text. The position taken is that readers with high prior knowledge, because they have the advantage of a well-developed and accessible store of domain knowledge, would not need to use their stance on a topic as a basis for processing the text. Thus, they may be able to integrate both supporting and opposing arguments into their representation or situation model. However, readers who lack a well-developed, accessible store of domain knowledge might have to default to using their stance on an issue as a basis for encoding or retrieval. Thus, low-knowledge readers would be more susceptible to consistency bias in their recall of arguments.

Three specific hypotheses are made with respect to this general prediction. First, when readers have the use of a large amount of domain knowledge in developing representations of a text, they should recall more arguments from the text overall.

Second, consistency bias should be moderated by the possession of domain knowledge. Subjects who do not possess a large amount of domain knowledge should show a consistency bias in recall, since they presumably must use their stance as a basis for encoding and retrieval. As a result, readers with little domain knowledge should recall more arguments that support their position than oppose it. On the other hand, readers who possess larger amounts of domain knowledge should not be as subject to consistency bias and should recall at least as many opposing arguments as supporting.

There is another reason why readers may not be subject to bias favoring position-supporting information. Aside from the already mentioned advantages of knowledge in text processing, some readers may simply approach texts on controversial issues with a more sophisticated set of argumentation or informal reasoning skills. In particular, readers with advanced training in an academic field may be more likely to place value in understanding an opposing position. There are several ways in which knowledge of an opposing stance can be useful (Stein & Miller, 1991). One may make an effort to understand the opposite position as a means of better defending one’s own position, attacking the opposing view, or arriving at a compromise that both sides can agree upon. A study by Jones and Aneshansel (1956) suggests that the perceived utility of counterarguments plays a role in determining whether they will be remembered. When subjects were led to believe that they would have to defend their beliefs at a later time, they showed better recall for arguments that opposed their beliefs than arguments that supported their beliefs. If indeed readers with advanced training in any academic field are
more likely to recognize the value of counterarguments, they could be more motivated to recall counterarguments, which would in turn contribute to less-biased recall, even if they are not high knowledge in a particular domain. Further, readers with expertise in any academic domain may be more generally motivated and intellectually able individuals, which may also contribute to differences in recall bias.

Thus, a third hypothesis is that less-educated low-knowledge readers may show more bias than more-educated low-knowledge readers. To separate the effects of possession of domain knowledge from general ability, argumentation skill, age or motivation differences, readers with domain knowledge in a specific domain were given two kinds of texts. Some read a text within their domain, while some read a text outside their domain, serving as more-educated low-knowledge readers. Undergraduates in an Introductory Psychology course served as less-educated low-knowledge readers for both texts. Even though more-educated low-knowledge readers may not possess more domain knowledge than the less-educated low-knowledge readers, they may better appreciate the value of opposing arguments. Thus, the more-educated low-knowledge readers may recall more opposing arguments, making them less biased than their less-educated counterparts.

In addition to these specific hypotheses, the clustering and order of arguments in recall was also examined. To investigate the extent to which recall may be the result of reconstructive processes from prior knowledge, intrusions in memory during recall were also examined. Finally, since it has been suggested that consistency bias in recall, if and when it occurs, may be the result of differential argument familiarity and strength for the two sides of an issue (Greenwald & Sakamura, 1967; Waly & Cook, 1966), in this study these aspects of memory bias were examined by collecting ratings for familiarity and argument strength, and employing these measures in covariation analyses.

**Method**

**Participants**

Twenty undergraduates at the University of Pittsburgh enrolled in an Introductory Psychology course, 20 graduate students in Political Science, and 20 Law students served as participants. They were paid for their participation.

**Materials**

Two texts were written of approximately equal length. The first, on abortion, was 533 words and titled “Should abortion be legal?”; the second on the Persian Gulf War was 548 words and titled “Should the United States use force against Iraq?” The topics were chosen because arguments about them should be familiar and of interest even to nonexperts. Also, presentation in the form of a prose passage was chosen over a list of statements in the interest of keeping the task more incidental, and hence, naturalistic.

Each text contained 20 arguments, 10 supporting each side of the issue. Most importantly, arguments for each side of the text were matched for strength and familiarity through two preliminary studies. In the first study, undergraduates were asked to generate arguments for and against each topic. This was to ensure that the arguments included in the texts would be commonly known to most undergraduates (as opposed to obscure arguments that only political scientists or specialists in constitutional law might be aware of). In the second preliminary study, a different set of undergraduates rated the arguments that were generated for their strength and familiarity. On the basis of this data, arguments were then selected for inclusion in the text so that the arguments for both sides of the issues would be equally common and familiar to the subjects. The arguments were matched not just on average scores, but through a yoking procedure, such that each side had one argument with an average strength around 9, two around 8, etc. As a result and equal number of strong and weak arguments were included for each side of each text. In addition, a 10-item test of domain knowledge was developed for each topic. All materials for Experiment 1 are included in Appendix A.

**Procedure**

Experiment 1 took place during the Spring of 1991 after military action in Iraq had already taken place. It was unclear whether or not the United States would need to return, so the issue was still controversial at that time. Subjects were told they were piloting materials and rated the familiarity of each sentence of the text on a 10-point scale while reading. Familiarity judgement was chosen as a task because each sentence would be read, but as opposed to an agreement judgement task, would not necessarily invoke attitude-based processing.

Subjects first were asked to rate their opinion on many issues using a 10-point scale, and the task-relevant issue was embedded in this list. They were then asked to read and rate the experimental text. Next, as a filler task they read and rated the familiarity of each sentence for the second text. Subjects also rated the strength of each argument in the second text. After 30 minutes, subjects were asked to write down as much as they could remember of the article they read at the beginning of the session, referred to by title, and prompted to include as many points from the article as possible. When finished recalling, subjects were given the 10-item domain knowledge test on the same general topic as the text they had read. They were then asked to rate the strength of each argument in the first text. Finally, they were again asked to indicate their position on issues using a 10-point scale.
Because no differences were found between the before and after ratings ($t < 1$), the before rating was used as the agreement rating for all analyses. In an attempt to control for attitude extremity across knowledge groups, only subjects who had a strong opinion on the target issue, indicated by a rating greater than 6 or less than 5 on the before rating, were run through the experiment.

**Design**

Ten undergraduates (less-educated low-knowledge readers), 10 Political Science graduate students (more-educated low-knowledge readers), and 10 Law students (high-knowledge readers) read the text on abortion; while 10 undergraduates (less-educated low-knowledge readers), 10 Law students (more-educated low-knowledge readers) and 10 Political Science graduate students (high-knowledge readers) read the text on the Persian Gulf War. Thus, three levels of prior knowledge were split across two texts to yield six independent cells.

Each text contained 20 arguments in total, 10 arguments for each side of the issue. Consistency with position was tested as within-subjects variable. Thus, the design was a $3 \times 2 \times 2$ (Knowledge x Text x Consistency) mixed design with repeated measures on the last variable.

**Results**

**Domain knowledge**

A two-factor analysis of variance (ANOVA) using level of knowledge (Less-educated low-knowledge readers, More-educated low-knowledge readers, and High-knowledge readers) and text (Abortion, Persian Gulf) performed on the results of the 10-item domain knowledge test revealed no main effect for text, $F(1, 56) = .01$, $MSE = 1.90$, $p = .93$, but a highly significant main effect for knowledge, $F(2, 56) = 49.67$, $MSE = 1.90$, $p < .0001$. Tukey’s HSD test of pairwise comparisons indicated that less-educated low-knowledge readers answered significantly fewer items correctly ($M = 3.65$) than the more-educated low-knowledge readers ($M = 6.50$), who, in turn, answered significantly fewer items correctly than the high-knowledge readers ($M = 7.85$). Thus, the a priori groups represented three distinct levels of domain knowledge, and the three groups are considered as knowledge groups for the remainder of the analyses.

**Stance on issues**

There were differences among the knowledge groups in positions taken on the Persian Gulf, but not the abortion issue. In relation to the abortion issue, the groups were fairly similar with 70% (7) of the less-educated low-knowledge readers, 80% (8) of the more-educated low-knowledge readers, and 90% (9) of the high-knowledge readers feeling that abortion should remain legal, as indicated by a rating of “6” or higher on the 10-point disagree/agree rating scale. On the Persian Gulf issue, however, the low-knowledge readers were somewhat for the war while the high-knowledge readers were mostly against it, as 30% (3) of the less-educated low-knowledge readers, 40% (4) of the more-educated low-knowledge readers, and 90% (9) of the high-knowledge readers were against taking military action in Iraq in 1991.

**Attitude extremity**

Extremity of opinion was also derived from the 10-point agreement scale. Ratings of “4” and “7” on the 10-point scale were assigned a “2” in extremity, “3” and “8” rated a “3” in extremity, “2” and “9” rated a “4” in extremity and “1” and “10” on the agreement scale were a “5” on the extremity scale. No significant differences were found in the extremity of the attitudes between the three groups, as the mean extremity of less-educated low-knowledge readers was 3.25, more-educated low-knowledge readers, 3.80, and high-knowledge readers, 4.00, $F(2, 57) = 1.47$, $MSE = 2.05$, $p = .24$.

**Recall**

The mean number of arguments recalled for the three knowledge groups is presented in Fig. 1 by topic. A $3 \times 2 \times 2$ mixed ANOVA (Knowledge Level, Text, and Consistency with Attitude) on accurate recall of arguments from the texts revealed a highly significant main effect for knowledge level, $F(2,56) = 10.84$, $MSE = 4.65$, $p < .0001$. Tukey’s HSD indicated that high-knowledge

![Fig. 1. Recall of arguments in Experiment 1 by Topic: abortion in the left panel and Persian Gulf War on the right.](image-url)
readers recalled significantly more arguments ($M = 9.6$) than either the more-educated low-knowledge readers ($M = 7.9$), or the less-educated low-knowledge readers ($M = 5.15$). In addition, the more-educated low-knowledge readers recalled more arguments from the text than the less-educated low-knowledge readers. Thus, in support of the first hypothesis, as domain knowledge increased so did the number of arguments recalled. A significant main effect was also found for text, $F(1,56) = 5.82$, $MSE = 4.65$, $p = .02$, as subjects recalled more arguments from the Abortion text ($M = 8.50$) than from the Persian Gulf text ($M = 6.60$).

The most interesting result, however, as predicted by the second hypothesis, is the significant interaction between knowledge level and consistency with position, $F(2,57) = 3.51$, $MSE = 1.98$, $p = .04$. Planned comparisons indicated that the less-educated low-knowledge readers exhibited a significant consistency bias, recalling more information supporting their position than opposing it, $t(19) = 2.36$, $p = .02$. More-educated low-knowledge readers also tended to recall more supporting than opposing information, but this bias was only marginally significant, $t(19) = 1.80$, $p = .08$. High-knowledge readers, on the other hand, recalled slightly less supporting than opposing arguments but this difference was not significant, $t(19) = 1.13$, $p = .27$. Planned comparisons on the difference of consistent versus inconsistent arguments recalled between groups showed that high-knowledge readers were significantly less biased than either less-educated low-knowledge readers, $t(38) = 2.47$, $p = .02$, or more-educated low-knowledge readers, $t(38) = 2.07$, $p = .04$. There was no difference in bias of less-educated and more-educated low-knowledge readers, $t < 1$.

Because of the differences in positions among high- and low-knowledge groups on the issues, there might be a concern that the effects might appear on one text but not the other. The results are presented for each text separately in Fig. 1 to show that the effect does hold in both cases. Consistent with this conclusion, no interactions with the text variable were significant in this analysis.

Thus, in support of the second hypothesis, subjects with the least domain knowledge had a consistency bias in their recall of the text, while the most knowledgeable subjects had none. Further, the high-knowledge readers were significantly less biased than either low-knowledge group. Support was not found for the third hypothesis, however, as no differences were found between the biases of the low-knowledge groups.

**Organization of recall**

The order of items in recall was examined to determine whether differences in recall bias were related to the organization of recall. However, exact pro/con (favoring subject’s opinion/opposing subject’s opinion) ordering or clustering in recall could not be considered because a large number of subjects (67%) intentionally split their recall into two groupings representing the two sides of the issues. This intentional split was either made spatially on the recall page, as subjects wrote headings and listed points beneath them, or the split was made in a textual format by separating points into two paragraphs and beginning each paragraph with a statement of which side of the issue the following points supported.

Seventeen out of 20 high-knowledge readers (85%), and 16 out of 20 more-educated low-knowledge readers (80%) split their recall, while only 7 of the 20 less-educated low-knowledge readers (35%) did. Interestingly, the use of split recall was related to the number of arguments recalled overall, but was not related to recall consistency bias. Subjects who split their recall, recalled more arguments on the average ($M = 9.03$, $SD = 3.2$) than subjects who did not ($M = 4.60$, $SD = 2.5$), $t(58) = 5.42$, $p < .0001$. However, the use of split recall had no effect on recall bias, $t < 1$. The findings suggest that categorization of recall into arguments for the two sides of the issue did not contribute to the elimination of recall bias.

This, in turn, can be interpreted as another failure to find support for the third hypothesis. While in the present study it seems that the more-educated low-knowledge readers intentionally tried to recall both sides of an issue in a manner similar to high-knowledge readers, they were unable to overcome consistency bias in their recall.

**Intrusions in recall**

Intrusions in recall were defined as arguments that were “recalled” by subjects although they had not been mentioned in the text. Intrusions occurred infrequently. Of the approximately 500 reasons written in recall protocols, only 32 were reasons that did not appear in the texts. Of the 60 subjects, 38 had no intrusions in their recall. Individuals making intrusions were distributed fairly evenly across groups, with 8 of the less-educated nonexperts, 5 of the more-educated nonexperts and 9 of the experts having intrusions. These results suggest that the recall results seen here do not seem to be due to the high-knowledge participants simply retrieving more information from memory, as this should have led to more intrusion errors among the more expert groups. Further, the infrequency of intrusions overall suggests that the recall measures do seem to be reflecting recall of the text.

**Familiarity and strength**

Neither argument familiarity nor argument strength ratings alone accounted for recall consistency bias, as found in separate analyses of covariance. Specifically, when familiarity with arguments was covaried, there was still a main effect for knowledge on recall, $F(2,56) = 9.32$, $MSE = .45$, $p < .001$, and a significant knowledge by con-
sistency interaction, $F(2, 57) = 3.00, \text{MSE} = .18, p = .05$. And, when argument strength was covaried, there remained a main effect for knowledge, $F(2, 56) = 13.13, \text{MSE} = .47, p < .0001$, and the interaction for knowledge and consistency, $F(2, 57) = 3.89, \text{MSE} = .18, p < .03$. Further when both familiarity and strength of arguments were covaried in the same analysis, the main effect for knowledge, $F(2, 56) = 11.94, \text{MSE} = .46, p < .0001$, and the interaction of knowledge and consistency, $F(2, 57) = 3.37, \text{MSE} = .19, p < .04$, were still significant. Recall means adjusted for the effects of familiarity and strength followed the same pattern as the means without the covariates.

Experiment 2

In Experiment 1, possession of domain knowledge was seen to moderate consistency bias, as low-knowledge readers were significantly biased in their recall of arguments from a text on a controversial issue, but high-knowledge readers were not. In Experiment 2 position on issue was controlled such that at each knowledge level, half the subjects agreed with each side of the issue. Also of interest was whether the effect observed in Experiment 1 could be generalized to a new issue, using a text on the OJ Simpson case.

Method

Participants

Twenty-four undergraduates from the University of Pittsburgh participated in this experiment as an Introductory Psychology course requirement. Two knowledge groups were created using a median split on the scores on domain knowledge tests. In each knowledge group, there were six participants who agreed with one side of the issue and six on the other. Because domain knowledge tests could not be administered until the end of the experiment, data collection continued until all cells were complete. For each remaining experiment in this paper, additional subjects were discarded if they fell into a cell that was already filled.

Materials and procedure

This experiment, run in the Fall of 1994, used a new topic, “Is OJ Simpson guilty”. A 545-word text with 10 arguments on either side, and 10-item domain knowledge test, were created for the OJ Simpson topic using the same procedures as outlined in Experiment 1. Participants followed the same basic procedure as in Experiment 1. First, they rated their agreement on several issues. Next they read the OJ Simpson text and rated each sentence for its familiarity. For the filler task, subjects rated sentences from the abortion text for strength and familiarity. After about 30 min, readers were asked to recall as many points as they could from the target text. Finally, participants were given the domain knowledge test and the final agreement rating scale. Because no differences were found between the before and after ratings ($t < 1$), the before rating was used as the agreement rating for all analyses.

Design

Two knowledge groups were created using scores on the domain knowledge test. The text contained 20 arguments in total, 10 arguments for each side of the issue. Consistency with position was tested as within-subjects variable. Thus, analyses were done on a $2 \times 2$ (Knowledge $\times$ Consistency) mixed design with repeated measures on the last variable.

Results

Domain knowledge

Subjects with 6 or more correct answers on the domain knowledge test were considered high knowledge. The resulting low knowledge group had a mean score of $3.67 \text{ (SD 1.05)}$, and the high knowledge group, $8.00 \text{ (SD 1.25)}$.

Recall

A $2 \times 2$ mixed ANOVA (Knowledge Level, Consistency) on accurate recall of arguments from the text revealed a marginal effect of consistency ($F(1, 22) = 3.39, \text{MSE} = 1.57, p < .10$) and a significant effect of knowledge level, $F(1, 22) = 6.03, \text{MSE} = 2.71, p < .02$. As can be seen in Fig. 2, the low knowledge group recalled fewer arguments ($M = 7.42$) than the high knowledge group ($M = 9.75$), and more consistent arguments than inconsistent arguments were recalled overall.

Most importantly, as in Experiment 1, there was a significant effect of knowledge on recall bias, as evidenced by the significant interaction of knowledge level and consistency, $F(1, 22) = 6.41, \text{MSE} = 1.57, p < .02$. Planned comparisons indicated that the low knowledge group had a significant consistency bias, more arguments in favor of their position than opposing it, $t(11) = 3.27, p < .01$. The

Fig. 2. Recall of arguments in Experiment 2 by consistency with position and knowledge group.
high knowledge group, however, recalled slightly fewer supporting than opposing arguments, but this reverse bias was not significant, $t < 1$. Further, a planned comparison among knowledge groups indicated that the low knowledge group was significantly more biased than the high knowledge group, $t(22) = 2.53, p < .02$.

**Organization of recall**
As in Experiment 1, a number of subjects (25%) intentionally split their recall into two groupings representing the two sides of the issues. The percent of subjects who split their recall was the same in both knowledge groups: 3 out of 12 high knowledge (25%), and 3 out of 12 low knowledge subjects (25%). In this experiment, the use of split recall was related to neither overall recall or recall bias, $t$s < 1.2.

These results further support the findings of Experiment 1. The low knowledge readers in this experiment intentionally tried to recall both sides of an issue in a manner similar to the high knowledge subjects, but like the more-educated low knowledge subjects in Experiment 1, this strategy did not help the low knowledge readers to overcome consistency bias in their recall.

**Intrusions in recall**
As in Experiment 1, intrusions in recall were infrequent. Out of over 200 reasons listed in recall protocols, only 7 were reasons that were not included in the text. Three intrusions were made by low knowledge participants and four were made by high knowledge participants.

**Attitude extremity**
No differences were found between the high (2.33) and low (2.83) knowledge groups in attitude extremity, $t < 1$.

**Experiment 3**
The results of the first two experiments indicated that consistency bias in recall may be moderated by domain knowledge. One possible explanation for this finding is that recall consistency bias is the result of the less knowledgeable readers relying primarily on their position on an issue as a basis for encoding and retrieval, while more knowledgeable readers can use their domain knowledge as the principal basis for text processing. In particular, the presence of prior knowledge about the topic may make the opposing arguments easier to integrate into a representation of the text. The present experiment is designed to test this account. If low knowledge readers use their position on an issue as a basis for text processing, then presenting opposing arguments in a manner that is easier for them to integrate with their position, should improve memory for opposing arguments. To test this hypothesis, the presentation of arguments was either interleaved (each supporting argument was matched to an opposing argument and they were presented in point/counterpoint fashion) or blocked (all supporting arguments were presented in one paragraph, and all opposing arguments were presented in their own separate paragraph). If the consistency bias occurs due to difficulty with integration, then the interleaved presentation should help to eliminate the recall bias.

**Method**

**Participants**
Forty-eight undergraduates at Washington State University, Vancouver enrolled in Psychology courses participated in this study for course credit. Two knowledge groups were created via median split on the domain knowledge test administered at the end of the session. In each knowledge group, an equal number of subjects agreed with each side of the issue. These subjects were also split evenly among the text presentation conditions, within each knowledge group.

**Materials**
The Abortion text from Experiment 1 was used in this experiment. Two versions of the text were created. Each version of the text contained 20 arguments, 10 supporting each side of the issue. In the interleaved condition, pro/con arguments were matched in point/counterpoint pairs. In the blocked condition, all 10 arguments were included in a single paragraph for each side.

**Procedure**
This experiment was run in the Fall of 1999. The procedure was the same as in Experiment 2. As a filler task, subjects rated the familiarity and strength of arguments about legalizing marijuana.

**Design**
Two knowledge groups were created. Within these groups, half of the subjects got a text with interleaved pro/con arguments and half got blocked presentation of the arguments. This yielded four cells with 12 participants in each (2 Knowledge Levels x 2 Text Presentations).

Each text contained 20 arguments in total, 10 arguments for each side of the issue. Consistency with position was tested as within-subjects variable. Thus, the design was a $2 \times 2 \times 2$ (Knowledge x Text Presentation x Consistency) mixed design with repeated measures on the last variable.

**Results**

**Domain knowledge**
Subjects with 5 or more correct answers on the domain knowledge test were considered high knowledge and 4 or less were classified as low knowledge. The resulting low knowledge group had a mean score of 2.37
items correct (SD 1.06), and the high knowledge group answered an average of 7.13 items correctly (SD 1.85).

Recall
A 2 × 2 × 2 mixed ANOVA (Knowledge Level, Text Presentation, and Consistency) revealed a significant three-way interaction between the three variables, F(1,44) = 8.37, MSE = .50, p < .01. Significant main effects were also found for both knowledge level, F(1,44) = 5.19, MSE = 3.09, p < .03, and consistency, F(1,44) = 21.9, MSE = .50, p < .01.

As can be seen in the left panel of Fig. 3, the results for the blocked condition replicate the effect found in Experiment 1. Follow-up tests for each condition, indicated there was a significant effect of knowledge on recall bias in the blocked condition, as evidenced by the significant interaction of knowledge level and consistency, F(1,22) = 24.0, MSE = .50, p < .01. In the blocked condition, both main effects of consistency, F(1,22) = 29.4, MSE = .50, p < .01, and knowledge level, F(1,22) = 15.2, MSE = 2.42, p < .01, were also significant. As in Experiment 1, the low knowledge group had a significant consistency bias, recalling 1.5 more arguments in favor of their position than opposing it, t(11) = 5.47, p < .01. The high knowledge group, however, recalled slightly more opposing than supporting arguments, t(11) = 1.6, p = .14. Further, a planned comparison among knowledge groups indicated that the low-knowledge group was significantly more biased in favor of their position than the high-knowledge group in the blocked condition, t(22) = 5.60, p < .01.

On the other hand, as can be seen in right panel of Fig. 3, a different pattern emerges when the text presents arguments in interleaved format. Follow-up tests in this condition reveal a trend toward a main effect for knowledge, F(1,22) = 2.69, MSE = 3.75, p < .12, but no effect of consistency, nor an interaction, Fs<1.

Experiment 4
The results of Experiment 3 support the hypothesis that the integration of opposing arguments may be a factor determining when consistency bias may be observed. The purpose of this final experiment was to attempt to replicate the effects of the interleaving manipulation with a second topic. Rather fortuitously for research if nothing else, the second President Bush allowed for a replication using the Persian Gulf issue from Experiment 1 almost 10 years after the first experiment had been run. Thus, the Persian Gulf text from Experiment 1 was updated for this replication attempt, and two versions of the text were created in which the arguments for the two sides were either blocked or interleaved.

Method
Participants
Forty-eight undergraduates at the University of Illinois at Chicago enrolled in Introductory Psychology courses participated in this study for course credit. Two knowledge groups were created via median split on the domain knowledge test administered at the end of the session. In each knowledge group, an equal number of subjects agreed and disagreed with the US taking military action in Iraq. These subjects were also split evenly among the text presentation conditions, within each knowledge group.

Materials
An updated version of the Persian Gulf text from Experiment 1 was created. As was done in the original procedure, reasons supporting each side of the issue were solicited in a pilot experiment. In a second pilot experiment, the arguments were normed for strength and familiarity, and selected for inclusion using this information. Each version of the text contained 20 arguments, 10 supporting each side of the issue. In the interleaved condition, pro/con arguments were matched in point/counterpoint pairs. In the blocked condition, all 10 arguments included in a single paragraph for each side. The domain knowledge test was revised to include items relevant to the current issues in the Middle East. The new interleaved text and the new test (worth 15 points) are included in Appendix C.

Fig. 3. Recall of arguments on abortion by presentation conditions: blocked text in left panel and interleaved text in right panel.
Procedure

This experiment was run in early 2003. The procedure was basically the same as in previous experiments. As a filler task, subjects were asked to list all 50 states and their capitals. This change in procedure was instituted because pilot subjects did not engage adequately in the filler task that had been used in Experiment 3. The states/capitals task, on the other hand, tended to occupy students for the whole filler time.

Design

Two knowledge groups were created. Within these groups, half of the subjects got a text with interleaved pro/con arguments and half got blocked presentation of the arguments. This yielded four cells with 12 participants in each (2 Knowledge Levels x 2 Text Presentations).

Each text contained 20 arguments in total, 10 arguments for each side of the issue. Consistency with position was tested as within-subjects variable. Thus, the design was a 2 x 2 x 2 (Knowledge x Text Presentation x Consistency) mixed design with repeated measures on the last variable.

Results

Domain knowledge

Subjects with 7 or more correct answers on the domain knowledge test were considered high knowledge and 7 or less were classified as low knowledge. The resulting low-knowledge group had a mean score of 3.13 (1.51), and the high-knowledge group, 8.70 (2.31).

Recall

A 2 x 2 x 2 mixed ANOVA (Knowledge Level, Text Presentation, and Consistency) on accurate recall of arguments from the texts revealed a main effect for knowledge level, as high-knowledge readers recalled more arguments than low-knowledge readers overall, F(1, 44) = 5.01, MSE = 3.17, p < .03. The main effects for text presentation and consistency with position did not reach significance, Fs < 1.7.

Of most interest was the significant three-way interaction between the three variables, F(1, 44) = 7.65, MSE = .49, p < .01. As can be seen in the left panel of Fig. 4, the results for the blocked condition replicate the effect found in Experiment 1. Follow-up tests in each condition indicated there was a significant effect of knowledge on recall bias in the blocked condition, as evidenced by the significant interaction of knowledge level and consistency, F(1, 22) = 16.94, MSE = .63, p < .01. As in Experiment 1, the low-knowledge group had a significant consistency bias, recalling 1.5 more arguments in favor of their position than opposing it, t(11) = 4.18, p < .01. The high-knowledge group, however, recalled slightly more opposing than supporting arguments, t = 1.17.

On the other hand, as can be seen in right panel of Fig. 4, a different pattern emerges when the text presents arguments in interleaved format. Follow-up tests in this condition revealed no interaction of knowledge level and consistency, F < 1.

General discussion

Performance on many text processing measures, such as comprehension and the ability to draw inferences, generally improves with prior knowledge of the topic. The present study explored the possibility that prior knowledge could also influence not just the quantity but also the quality of memory for controversial texts. The results of the first two experiments indicated that consistency bias in recall of arguments may be a function of prior knowledge, with the more knowledgeable subjects in each study showing no bias, and less knowledgeable subjects showing a significant bias.

The finding of a relationship between recall bias and prior knowledge is one possible explanation for why consistency bias effects have been less than consistent in the literature. Studies that have not examined prior knowledge about issues may have pooled subjects with different levels of background knowledge. As

![Fig. 4. Recall of arguments on military action in the Persian Gulf by presentation conditions: blocked text in left panel and interleaved text in right panel.](image-url)
a result, any effects may have been washed out. Further, the window of vulnerability for the bias may move with respect to the difficulty and nature of the comprehension task. On tasks that require very little domain knowledge to be well-encoded, recall bias may be eliminated in all readers. On the other hand, even high-knowledge readers may show a recall bias if placed in contexts that make integration difficult. These are interesting questions for future research. A further possibility is that demonstrations of consistency bias may also be limited to topics that are highly familiar, controversial and of profound interest to a large segment of the population, such as the three investigated here.

At relatively low levels of prior knowledge, readers do seem to use their position on an issue as a heuristic for remembering arguments from text. It is suggested that recall consistency bias is the result of the low-knowledge subjects relying on their position on a topic as a default basis for encoding, retrieving, or reconstructing arguments in a text, while more knowledge-able subjects have the advantage of using their domain knowledge as the basis for processing. Interestingly, intentional, structured retrieval of both sides of the issue did not affect recall bias. This indicates that it is not simply the use or availability of a counterargument retrieval cue that enables the high-knowledge readers to be unbiased, but rather that a certain level of domain knowledge may be required in order to effectively integrate opposing arguments into a reader’s representation of the text.

Experiments 3 and 4 were designed to test this integration account of consistency bias. To manipulate readers’ ability to integrate opposing arguments, texts were either presented with the arguments for each side of the issue blocked or interleaved. The interleaved presentation was intended to facilitate the integration of opposing arguments. In both experiments, when arguments were presented in blocked fashion, consistency effects were found for the low-knowledge readers, and the results paralleled those found in Experiments 1 and 2. However, a markedly different pattern was found in the interleaved conditions. When arguments were presented in a point/counterpoint fashion, low-knowledge readers no longer experienced bias in favor of their position. Instead, the recall patterns for both low and high-knowledge readers were similar. The results of these experiments suggest that it is the ability to integrate opposing arguments into an ongoing discourse representation that underlies consistency bias.

A possible alternative explanation for the results of Experiments 3 and 4, is that the interleaving manipulation, instead of making integration easier, may have in fact made processing of the texts more difficult. Interleaving may have created highly artificial texts that seem choppy and less coherent, as they switch back and forth between the sides. Under these conditions, readers may have been prompted into more active, elaborative processing of the text. As such, these results can be seen as similar to others in the text processing literature that have found that sometimes less coherent text can lead to better learning outcomes (i.e., Mannes & Kintsch, 1987; McNamara, Kintsch, Butler-Songer, & Kintsch, 1996; Voss & Sillies, 1996). This is an interesting alternative hypothesis that could be tested in future studies, although it is unclear why getting readers to expend extra effort would specifically reduce the bias in low-knowledge readers, and not simply elevate recall overall.

Nevertheless, these experiments have important implications. They emphasize the importance of presentation format on memory for arguments. Of course, affective and motivational factors will play a role in whether people choose to attend to opposing arguments. And, personality factors may determine whether people prefer to listen to news sources that will give them multiple perspectives on issues, or evidence to support claims. But beyond these social and personality factors, there are basic cognitive processes that can also operate to produce biased recall, even when both sides of an argument are presented. These experiments demonstrated that it was only when arguments were presented in point/counterpoint form that low-knowledge individuals were able to integrate both sides of the issue, and recall arguments from each perspective equally well. However, this format rarely occurs in the popular news media. One can imagine that biased information acquisition is part of a vicious cycle, where more supporting arguments are integrated into a reader’s situation model, which in turn leads to biased memory for information, which in turn could affect the processing of future messages and future decision making. On the other hand, the bright side of these studies is that when readers were actually given a fair and balanced look at the news in point/counterpoint form, they could process it. Both yoked presentation and prior knowledge enabled readers to overcome consistency bias in memory for arguments, showing that the processing of controversial messages can impervious to influences of prior attitudes under some circumstances.

Appendix A. Experiment 1 materials

Abortion materials

Should abortion be legal?

Ever since the decision on Roe vs. Wade, there has been a great deal of controversy over legalized abortion. Recently, the Supreme Court was asked to review whether or not a woman has the exclusive right to choose to have an abortion, which has again stirred up strong opinions on the issue.
Protestors against Roe vs. Wade feel that abortion should not be legal because an unborn fetus has rights, specifically the right to life. They argue that it is impossible to determine when life begins, and so it must be assumed that life begins at conception. Therefore, abortion is terminating a human life and in even stronger words, abortion is murder. And, keeping abortion legal sends a dangerous message that it is okay to get rid of a child just because you don’t want it. Protestors also say that it is wrong to disrupt the natural order of things. You never know what an aborted child might have become, perhaps a great scientist.

Supporters of Roe vs. Wade do not deny that these unanswered questions make having an abortion a difficult decision to make, but what they see as most fundamental is to protect the right of a woman to choose what happens to her own body. There are no laws that restrict what a man chooses to do with his body, and the law should be equitable for both men and women. If the right to personal choice of reproduction is taken away from women, it sets a dangerous precedent for denying women other rights. For instance, the same arguments stated by protestors could be used to suggest that birth control should be illegal.

Roe vs. Wade supporters suggest that even if abortions are banned, it will not stop women from getting abortions. Women will go to unsafe underground abortion clinics. Poor women especially would be discriminated against, since they would not be able to afford to travel to places where the operation would be legal and safe.

Another reason why people think abortion should remain legal, is because some women are just not ready to handle having a child. Having an unwanted child may prevent women from reaching their potential, obtaining an education, and becoming productive members of society. And, unwanted children may be neglected, or even abused.

On the other hand, protestors state there are people who are waiting to adopt children, and adoption should be the alternative if a mother does not wish to raise her child. Protestors of Roe vs. Wade feel that abortion is being used as a form of birth control and its legality allows people to be irresponsible in their sexual activity. Further, many people feel that the sole purpose of sexual intercourse is the creation of children, and that the availability of abortion encourages intercourse for other purposes. Finally, having an abortion can be a devastating experience causing much psychological trauma for the woman, especially as she looks back on the irreversible decision.

In the recent decision, the Supreme Court upheld Roe vs. Wade, but allowed some restrictions to be imposed. As a result, neither side was pleased by the ruling. It seems that legalized abortion will continue to be a controversial issue. Domain Knowledge Test:

1. What is the name of the French “abortion pill”?
2. The “abortion pill” works by blocking the effects of a hormone. What hormone in females usually prepares the uterus for pregnancy and prevents the expelling of a fertilized egg?
3. What is abstinence?
4. Name a legal medical abortion procedure.
5. In what year was Roe v. Wade decided?
6. Who were the prosecution and defense in the Supreme Court case restricting reproductive rights that was decided on June 29, 1992? (In other words, what was the name of the case?)
7. Who is the most recently appointed Supreme Court Justice?
8. Name a restriction on legal abortion.
9. What is the name of an anti-abortion group that blocks clinic doors?
10. What is the current estimate of viability for a fetus? (Approximately when in the course of fetal development is it currently assumed that the fetus could survive on its own, outside the mother, for instance if born prematurely?)

Persian Gulf materials

Should the United States use force against Iraq?

In January 1991 the United States Senate engaged in a debate on whether or not to give the President the authority to use military force against Iraq. All Senators agreed that Iraqi forces needed to withdraw from Kuwait. However, they differed on how that goal should be achieved. The senators who voted in favor of the resolution to authorize the use of force (authorizers) felt that the only way to avoid a war was to threaten to use force. On the other hand, the senators who voted against the resolution and in favor of a continued sanctions approach (sanctioners) felt that threatening to use force would start a war.

Both sides agreed that sanctions were having a substantial effect on the Iraqi economy. The sanctioners felt that a continued sanctions approach would produce Iraqi withdrawal. They explained that Iraq was particularly vulnerable to the international embargo that had been imposed because of their reliance on a single commodity, oil. Another reason why the sanctions might be effective on Iraq is because the country is nearly land-locked, which makes an embargo easy to maintain. However, the authorizers felt that continued economic sanctions were not going to make Iraq withdraw from Kuwait. They cited that the Iraqis could endure much suffering, as they had just survived eight years of war with Iran. Further, there was concern that the sanctions were hurting innocent civilians instead of the Iraqi government and military.

Both sides agreed that past efforts at diplomacy had failed. The Authorizers felt that diplomacy would not work because Iraq completely refused to accept communication. Thus, authorizers felt that neither sanctions nor diplomacy could resolve the situation. They saw a military option as the only way to make Iraq withdraw. Sanctioners, on the other hand, felt that diplomacy had not worked because the United States had delivered an ultimatum to Iraq, instead of opening a negotiation. The sanctioners continued to hope that a diplomatic alternative could be found. Thus, they felt military force should not be authorized because sanctions and diplomacy were still viable options.

Further, the sanctioners felt that this situation was not worth risking lives over. The sanctioners also feared that a war with Iraq would be very expensive. With a large deficit already looming, the sanctioners felt a responsibility to the American taxpayers to vote in the best interests of the budget. They also remarked the United States was shouldering an extremely disproportionate share of the burden among the coalition members. The authorizers countered that if Iraq was given more time, many more lives would be lost. Also, immediate use of
force would be less costly in dollars than a later attack. Authori-
rizers felt it was a moral obligation of being the one remaining
superpower in the world to act as a leader in times of interna-
tional crisis. Further, they said Americans simply have to carry
a greater share of the burden because they have the capability
and resources.

On January 15th, the Senate cast its votes on this issue. The
vote was very close. Fifty-two senators voted in favor of autho-
rizing force, while 47 voted against. As a result, the President
received the authorization to use military force against Iraq.
However, many people still have doubts on whether this was
the best course of action. Domain Knowledge Test:

1. When did Iraq invade Kuwait?
2. Who was the United States General who was in com-
mand of the invasion of Iraq?
3. What is the capital of Iraq?
4. Who was the leader of Iraq at the time of the invasion?
5. Who was the leader of Kuwait when Iraq invaded
Kuwait?
6. What body of water does Iraq border?
7. What was the name of the military plan to bomb and
invade Iraq?
8. Who was the Iraqi Foreign Minister?
9. What is the name of the Islamic holy month?
10. What republic was invaded by Soviet troops during
Iraq’s occupation of Kuwait?

Appendix B. OJ Simpson materials

Is OJ Simpson guilty?

The OJ Simpson case has been closely followed by the
media, and there is a great deal of controversy whether the
prosecution has a case that can prove that OJ Simpson is guilty
beyond the shadow of a doubt.

OJ Simpson has been accused of killing his wife, Nicole
There is evidence that ties OJ Simpson to the murder scene.
First, a spot of blood found at the crime scene has been found
to be compatible with Simpson’s DNA. Less than a half-percent
of the population could have left that spot of blood at the crime
scene. A second line of evidence is a pair of bloody gloves, of
which one was found at the crime scene and the other at OJ
Simpson’s residence. Also at OJ Simpson’s residence, a trail of
blood was found from his driveway to his house. In addition, a
negroid hair was found in a ski cap at the crime scene.

On the other hand, the defense argues that the prosecution
does not have any hard evidence to support their case, only cir-
cumstantial and physical evidence. Specifically, there are no wit-
tnesses. And, no murder weapon has been found. Also in this
murder it is unlikely that the assailant would not have been cov-
cered in blood, and no bloody clothes have been found. Another
argument in Simpson’s defense is that a murderer who took so
much care to dispose of bloody clothes and the murder weapon
would not have been so careless with a pair of gloves, suggest-
ing that the gloves were planted. Further, the defense argues,
the blood spot found at the crime scene could have come from
over 10,000 people in the Los Angeles area alone.

There are other facts that do seem incriminating. Simpson
is known to have bought a knife that could have inflicted the
wounds found on the victims. He also asked that the knife be
sharpened before he picked it up. And, for a recent film role he
had been taught the style of killing that was used for these
murders. Further, if Simpson is innocent why did he resist
arrest?

Simpson’s defense team, however, has pointed out several
serious problems with the way this case has been investigated.
First, there is the fact that in order to get a search warrant
detectives lied that Simpson fled unexpectedly the night of the
crime. Second, there were problems with the coroners’ investi-
gation of the bodies. The coroners arrived on the crime scene
almost ten hours after the police. Later, the coroners acciden-
tially disposed of the victims’ stomach contents. Both facts make
it very unlikely that the coroner can make an accurate predic-
tion of the time of death. Finally, the fact that the prosecution is
not seeking the death penalty suggests that they know there are
problems with their case.

The process of jury selection for the Simpson case has now
begun. The controversy over whether there is enough evidence
to prove that OJ Simpson is guilty beyond the shadow of a
doubt is certain to continue, maybe even after the jury makes its
decision. Domain Knowledge Test:

1. Where were the bodies of Nicole Simpson and Ronald
Goldman found?
2. Where was OJ Simpson when he was informed of the
murders?
3. Name one of the lawyers on OJ Simpson’s defense
team.
4. What reason was given for Ronald Goldman’s presence
at the crime scene?
5. Where did OJ Simpson claim he was at the time of the
murders?
6. Who is the judge who is presiding over Simpson’s
trial?
7. Which vehicle of Simpson’s was said to have blood
stains on the door?
8. Who drove OJ Simpson during the televised police
chase?
9. In what city is the trial taking place?
10. What can the prosecution do if a homicide is said to
have “special circumstances”?

Appendix C. Revised Persian Gulf materials for
Experiment 4

Interleaved Text

Should the United States attack Iraq?

In recent months there has been a great deal of debate about
whether President Bush should order the United States military
forces to attack Iraq. There are people with opinions on both sides
of the issue. Some people think that the United States should
attack Iraq, while others are not in favor of military action.

Those in favor of military action argue that the United
States has the capability and resources to easily win a war with
Iraq. Those who are opposed feel that the United States should
mind its own business. However, those in favor feel that as the world’s remaining superpower, the United States has a responsibility to protect smaller nations such as Iraq’s neighbors. At the same time, others feel that this situation is not worth risking the lives of US soldiers.

Those in favor of military force argue that war is necessary to prevent Iraq from developing and using nuclear weapons. Those who are opposed to military action note that there is no evidence that Iraq has nuclear weapons. Some argue that an attack is necessary because Iraq is an immediate threat to the United States. However, others respond that President Bush just wants to kill Saddam Hussein because of family feud.

There is also fear that a war with Iraq would be very expensive and the cost of the war would be paid mainly by the United States. With a large deficit already looming, people are concerned that a war with Iraq will hurt the US economy. On the other hand, supporters of military action argue that a war would help the US economy. Further, Britain agrees with the United States government that military action is necessary.

Military supporters have also suggested that an attack on Iraq is important because it will remove support and funding for Al Qaeda. On the other hand, opposers note that there is no evidence of a connection between Saddam Hussein and Al Qaeda. On the other hand, opposers note that there is no evidence of a connection between Saddam Hussein and Al Qaeda.

Those against an attack have noted that opinion within the United States is also too divided on this issue to support a war. Further, the United States should not go to war when the United Nations is not in support of force.

On the other hand, it has been claimed that attacking Iraq is the only way to protect US interests in oil. And, a final benefit of war would be if Saddam Hussein were removed from power, allowing other Arab nations would become more democratic. However, those against an attack on Iraq fear it would only prompt further instability in the Middle East or Arab attacks on Israel.

In the days ahead, it will become clear which course of action President Bush will chose. Either way, it seems that the topic of whether the United States should engage in military actions in the Persian Gulf will continue to be a controversial issue.

**Blocked text**

**Should the United States attack Iraq?**

In recent months there has been a great deal of debate about whether President Bush should order the United States military forces to attack Iraq. There are people with opinions on both sides of the issue. Some people think that the United States should attack Iraq, while others are not in favor of military action.

Those in favor of military action argue that the United States has the capability and resources to easily win a war with Iraq. As the world’s remaining superpower, the United States has a responsibility to protect smaller nations such as Iraq’s neighbors. Those in favor of military force argue that war is necessary to prevent Iraq from developing and using nuclear weapons. Some argue that an attack is necessary because Iraq is an immediate threat to the United States. Military supporters have also suggested that an attack on Iraq is important because it will remove support and funding for Al Qaeda. A war would also help the US economy. Further, Britain agrees with the United States government that military action is necessary. Attacking Iraq is the only way to protect US interests in oil. And, a final benefit of war would be if Saddam Hussein were removed from power, allowing other Arab nations would become more democratic.

Those who are opposed feel that the United States should mind its own business. They feel that this situation is not worth risking the lives of US soldiers. Those who are opposed to military action note that there is no evidence that Iraq has nuclear weapons. Opposers also note that there is no evidence of a connection between Saddam Hussein and Al Qaeda. Some argue that President Bush just wants to kill Saddam Hussein because of family feud. There is also fear that a war with Iraq would be very expensive and the cost of the war would be paid mainly by the United States. With a large deficit already looming, people are concerned that a war with Iraq will hurt the US economy. Those against an attack have noted that opinion within the United States is also too divided on this issue to support a war. Further, the United States should not go to war when the United Nations is not in support of force. Finally, those against an attack on Iraq fear it would only prompt further instability in the Middle East or Arab attacks on Israel.

In the days ahead, it will become clear which course of action President Bush will chose. Either way, it seems that the topic of whether the United States should engage in military actions in the Persian Gulf will continue to be a controversial issue. Domain Knowledge Test:

1. What is the capital of Iraq?
2. What body of water does Iraq border?
3. Who is the Iraqi Foreign Minister?
4. Who is the leader of Iraq?
5. What is the name of the Islamic holy month?
6. Name a country that has nuclear weapons and is not currently part of the Nuclear Nonproliferation Treaty.
7. What is the name of Iraq’s currency?
8. What is the name of Iraq’s ruling party?
9. What is Iraq’s predominant religion?
10. In what year did Iraq invade Kuwait?
11. Name 3 countries that border Iraq. (1 point per country)
12. Who was the United States General who was in command of the invasion of Iraq in 1991?
13. Who was the leader of Kuwait when Iraq invaded Kuwait in 1991?

**References**


