

Leading Questions and Memory: Pragmatic Constraints

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Previous research has shown that presuppositions can alter memory, but these results depend upon a restricted class of pragmatic conditions. Given a specified source with a presumed intention to mislead, listeners might not enter such presuppositions into memory. In two experiments, subjects first observed an accident depicted in a series of slides. In Experiment 1, the leading questions with no source led subjects to "remember" the presupposed facts; attribution of the questions to a lawyer representing the defendant eliminated that effect. In the second experiment, the presuppositions were introduced in a transcript of an eyewitness account of the accident. If the account was from a neutral bystander, subjects "remembered" the presupposed facts; yet if the account came from the driver causing the accident, the same presupposed facts were not remembered. These results reflect the influence of pragmatic conditions on normal language processing, conditions normally excluded from laboratory experiments.

Presuppositions in leading questions are generally held to directly affect language comprehension and memory (cf. Hornby, 1972; Loftus, 1975; Loftus, Miller, & Burns, 1978), an effect that purportedly results from listeners treating presuppositional content as fact. Our purpose in this paper is to challenge the generality of that claim; we will delineate the conditions under which that claim does and does not hold. These arguments, developed below, are supported by two experiments.

First, we review the existing claim and describe the nature of the supporting evidence. Past researchers have generally held that presuppositions are often entered into memory as fact, whether or not they are true. Of course, no one is likely to claim that people will accept a presupposition as fact when that presupposition is priorly known to be contrary to fact. The interesting case is when a presupposition might be true, but the listener cannot confirm through independent evidence whether it is true or false. According to recent work cited above, a presupposition of uncertain truthfulness will likely be treated as fact, incorporated into memory, and

subsequently "known" to be true. Loftus (1975) argued that the "wording" of a leading question may "distort the memory."

The evidence for this claim is quite straightforward. In the Loftus studies, subjects first observed a sequence of events, presented in the form of a movie or slides. After the observation of the events, subjects answered a series of questions about what was observed. For some subjects, the questions included leading questions, each of which introduced a false presupposition. For other subjects (control), these presuppositions were not introduced. Afterward, all subjects answered a series of questions, including the critical questions about the truth of the presuppositions introduced in the initial questionnaire. For example, in Loftus (1975, Experiment 4), subjects viewed a brief film clip taken from inside a moving automobile. Immediately afterward, they answered questions about what they saw in the film. For the leading questions group, the questions included "Did you see the children getting on the school bus?" though there was no school bus in the film. In response to questions asked 1 week later, the group given the leading questions more frequently remembered seeing the falsely presupposed fact or

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element (in the above example, the school bus) than did those in the control conditions.

The critical consideration for the generality of the effects of presuppositions is a pragmatic condition. By pragmatic, we mean how a sentence is *used* by a particular speaker in a specific context. Ordinarily, utterances are used by speakers as *acts* intended to influence listeners in particular ways. In this sense, the *pragmatics* of language in the psychological laboratory is decidedly odd and bears little resemblance to most ordinary speaker-listener communications. In experiments of the kind described above, it is not clear what intentions the speaker has in asking a leading question since it is not clear who the speaker is nor what purposes that speaker might have. Therefore, the influence of presuppositions on memory may be restricted to these unusual pragmatic conditions. The wording of a sentence may "distort the memory" only when the presuppositions are introduced as though they come from heaven, or at least when there is no source who might be presumed to have complex intentions. The point, then, is importantly related to issues of ecological validity. We will now describe the kinds of conditions under which presuppositions should not change memory.

In the pragmatic perspective, presuppositions are taken as elements *apparently taken as fact* by Speaker A when uttering Sentence Y to Listener B in a particular context. If A may be taken to not know that fact and/or to have the intention to mislead in the use of a particular presupposition, then B is not likely to accept the presupposition. Therefore, any of several factors related to A and B will alter the effects of presuppositions: B may have reason to believe that A does not, or could not, know the facts presupposed; A's particular social role, apparent involvement, or biased point of view might give B reason to doubt some presuppositions of A's utterance. While there are everyday conditions in which lis-

teners have no reason to reject the presuppositions of speakers, there must be many situations in which doubting such presuppositions is in order. Certainly the eyewitness testimony setting is particularly one in which there is often a basis to believe that the interrogator does not know the facts *and* is likely to have reason to mislead. Whatever the distribution of such conditions in the real world, our argument here is that the pragmatic conditions of an utterance will determine whether or not the presuppositions of that utterance will be entered into memory. We will demonstrate with two experiments how such pragmatic conditions will alter the influence of presuppositions on memory.

Suppose that the experimental presuppositions are attributed to a real-life source who might have reason to influence the eyewitness. In Experiment 1, leading questions were attributed to a lawyer representing the defendant. This condition was contrasted with one in which there was no source of the leading questions and another in which there were no leading questions. If distortions of memory result from the wording of the questions, it should not matter what the source of the questions is. Alternatively, if listeners incorporate pragmatic conditions into the treatment of presuppositions, they should be wary of presuppositions introduced by a source that presumably did not see the accident and is likely to have intentions to mislead. Under the condition in which presuppositions are introduced by no indicated source, subjects should remember some of the presupposed facts. But the condition in which presuppositions are introduced by a suspect source should be comparable to the control condition in which no presuppositions were introduced.

In the second experiment, a somewhat different procedure was employed, one in which the presuppositions are introduced in the purported testimony of real eyewitnesses to an event. Similar to Experiment 1, a no presupposition (control) condition is

contrasted with false presupposition condition, where the source is neutral and a third condition where the source is presumably biased. The neutrality or bias is based on whether the eyewitness report comes from an innocent bystander or from the driver of the car causing the accident. For the reasons explained under Experiment 1, the outcome should be one of the following: If the presuppositions are accepted based on the wording of the sentence, both presupposition conditions should result in increased "memory" for the presupposed facts. Or subjects should use the pragmatic conditions and "remember" the presupposed facts only when the source is neutral.

EXPERIMENT 1

In this experiment, materials similar to those of Loftus (1975; Loftus, Miller, & Burns, 1978) were used. Subjects observed an accident depicted in a sequence of slides. Subsequently, they answered a series of questions about the event they had observed. In the Control condition, questions about the event contained no falsely presupposed information. In the Presupposed–Unspecified Source conditions, some of the questions contained falsely presupposed facts. For example, the question "Could the bushes on the southeast corner have interfered with car A's view of traffic approaching from the east?" contained the false presupposition that there were bushes on the southeast corner. In the Presupposed–Specified Source conditions, the same falsely presupposing questions were asked. But in that condition, the questionnaire instructions contained two sentences indicating that these questions were asked by a lawyer representing the driver of the car causing the accident.

In a final questionnaire, given 2 days later, subjects in all groups answered questions which included direct questions about the facts falsely presupposed, for example, "Did you see bushes on the southeast corner?"

The predictions were as follows: First,

subjects in the Presupposed–Unspecified Source condition would be more likely than those in the Control condition to report seeing those items presupposed in the early questionnaire. Second, Presupposed–Unspecified Source subjects would similarly report seeing those items more than Presupposed–Specified Source subjects.

Method

Subjects and design. The subjects were 106 students in six moderate-sized classes, three in psycholinguistics and three in experimental methods. The experiment was conducted as a classroom demonstration and was thoroughly discussed after the completion of data gathering. Subjects in each class were randomly assigned to one of three independent groups which differed only in terms of the first questionnaire completed in the experiment.

Materials. A series of six slides was prepared by staging an apparent accident in which two cars approach each other, one moving away from the camera and the second approaching from the right. The cars apparently collide such that the second car is struck on the driver's door, which exhibits prominent dents when it reappears to view in the final slide.

Three alternative forms of the *initial questionnaire* established the three experimental conditions. All forms contained a series of 13 questions about what happened in the sequence of slides, either including or not including falsely presupposed material. In the critical items in the control questionnaire, one aspect of the questioned fact was indicated in a neutral way. For example, the question "Could anything on the southeast corner have interfered with Car A's view of traffic approaching from the east?" used the neutral "anything." For the second form of the initial questionnaire (Presupposed–Unspecified Source), the critical questions contained more definitely specified objects. Thus the equivalent question was "Could the bushes on the southeast corner have interfered with Car A's

view of traffic approaching from the east?" (The entire initial questionnaire is provided in Appendix A.) The critical alteration was from "anything" to "bushes"; similar differences were between "the car" and "the red car," "anyone" and "the man," and "vehicle" and "blue truck." In all cases, the definitely specified object did not appear in the slide sequence. There was a pole and a stop sign on the southeast corner, but no bushes; a white car, not a red car, passed through the intersection; and so on. The third form of the initial questionnaire (Presupposed—Specified Source) contained exactly the same set of questions as those for the Presupposed—Unspecified Source condition, but the written instructions at the top of the sheet indicated that the questions were "prepared by the lawyer representing the driver of Car A."

A sketched map of the intersection (including compass directions and the cars, labeled A and B) was given to all subjects along with the first, and later with the final, questionnaires.

The final questionnaire consisted of 10 questions, including the four critical items randomly interspersed with filler items. The critical items directly queried the fact introduced presuppositionally, for example, "Did you see bushes on the southeast corner?" "Did you see a red car?" The other items asked about similar facts, for example, "Did you see a parked yellow van?" Appendix B gives the entire final questionnaire.

Procedure. The experiment was introduced as a classroom demonstration from which data were to be collected. Students were advised that they were free to choose to participate or not. They were instructed to imagine themselves to be bystanders who observe cars pass by and an automobile accident suddenly unfold. They were told that the slides they would see were taken from a movie of an accident. The sequence of slides was presented on a screen in a darkened room at a rate of one every 4 seconds, with a momentary black-

out as the Kodak Carousel changed slides. This is much slower than the rate at which two cars would progress toward each other for 200 yd or so and collide.

Immediately after the slides, the initial questionnaires were distributed to each class, having been previously randomly mixed (with the constraint that every form appear within each set of three). The fact that these questionnaires were different was not indicated nor was it apparent to casual inspection. Questioning after completion of the experiment indicated that only a very few students noticed any difference between their questionnaires and those of a neighbor. Subjects were directed to read the written instructions carefully, then answer all questions "Yes" or "No," then to write an identifying number on the form, a number which might be the first or last four digits of their Social Security number or a part of a telephone number or address.

At the next class meeting (2 days later), the final questionnaire was distributed. Subjects were asked to write the same number on this form as on the previous one, thus allowing the experimenter to later determine the experimental condition for each final questionnaire. Subjects were instructed to answer the final questionnaire with a "Yes" or "No" based on what they saw in the accident slides.

Results and Discussion

Answers to all items on both questionnaires were tabulated. Primary interest is in the final questionnaire, but results for the initial questionnaire will be presented first. For the critical items on the initial questionnaire, the correct answers were "No" and "uncertain." Of concern here was the frequency of "Yes" responses as an index that subjects affirmed facts relevant to the critical presuppositions. The average number of "Yes" responses (of four possible) for the groups were: Control—.18, Presupposed—Unspecified Source—.14, Presupposed—Specified Source—.06; overall

$F = 4.15$, $p < .05$. By Newman-Keuls comparison, the Control group differed significantly from the Presupposed-Specified Source group, $p < .05$, and the difference between the two Presupposed groups approached significance, $q = 2.57$, critical $q = 2.83$. Some of this effect may be because the wording of the questions was different ("car" versus "red car") for the Control group than for the Presupposed groups. Nonetheless, it also appears (though the difference is not quite significant) that the Presupposed-Specified Source group treated the questions differently than the Presupposed-Unspecified Source group which answered the same questions. While this effect is not the primary focus of the study, it supports a position that presuppositions are treated differently at input rather than at storage or recall. This seems reasonable since input (here the time of the initial questionnaire) is the only point in the study at which the Presupposed-Specified Source subjects were given any information about the source of the questions. No other items on the initial questionnaire showed reliable differences among the groups.

For each of the critical items on the final questionnaire, the correct answer was "No" since the object queried did not appear in the sequence of slides. The existence of these objects was, however, presupposed by the wording of a question in the two Presupposed conditions. The results of interest here are the differing frequency with which subjects answered "Yes" to those critical items. The average number of "Yes" answers (of four possible) were: Control ($n = 37$)—.43; Presupposed-Unspecified Source ($n = 32$)—.94; and Presupposed-Specified Source ($n = 37$)—.54. These differences were significant by an overall F test, $F = 4.98$, $p < .01$. By Newman-Keuls comparison, the Control and Presupposed-Specified Source group were each different from the Presupposed-Unspecified Source, $p < .01$, but were not significantly different from each other, $p > .05$.

To ascertain whether any change in overall response bias resulted from the experimental conditions, the filler items on the final questionnaire were also analyzed. The average number of "Yes" answers (of six possible, which were all true) were: Control—3.00, Presupposed-Unspecified Source—2.69, and Presupposed-Specified Source—2.91; the difference was nonsignificant, $F < 1$. The overall difference in rate of "Yes" responses between the critical and filler items surely reflected the fact that the correct answer was "Yes" for all of the filler items; the questions about the presence of a stop sign and dents in the side of Car B were nearly always answered "Yes" by subjects in all groups.

These results suggest that presuppositions are not simply and automatically accepted by recipients. If the presuppositions come from a source that the listener can assume to have intentions to influence, such presuppositions may not be accepted. Presuppositions did alter the memory representation of subjects for whom the leading questions came from no specified source. But when the source was specified and known to have reason to influence the eyewitness, the influence of the presupposition on memory was dramatically reduced. Experiment 2 was designed to replicate these results, but with materials in which all verbal information had a source, but the presumed truthfulness of that source varied across conditions.

EXPERIMENT 2

In Experiment 2, the same slides of the automobile accident were used, but the presupposed information was provided within a transcript of an eyewitness account of the accident. The conditions were conceptually much like those of Experiment 1, but in this experiment each subject read an account of the accident purportedly produced by an observer of the actual accident. For the Control group, the account was said to be produced by an innocent bystander; this account contained no false

presuppositions. For the Presupposition–Neutral Source group, the account was also attributed to an innocent bystander, but three false presuppositions were added to the otherwise identical account. The Presupposition–Biased Source group read a transcript containing the same presuppositions, an account attributed to the driver of the car causing the accident.

Method

Subjects and design. Subjects in this experiment were 111 students enrolled in a semester-long high school psychology class. The experiment served to demonstrate some interesting phenomena in psychology and was well received by instructors and students. Subjects were randomly assigned to one of the three groups described above.

Materials. The slides were the same as those prepared for Experiment 1. Instead of an initial questionnaire, subjects read a written eyewitness account of the accident. There were three different forms of this account. The forms for the Control and Presupposed–Neutral Source conditions indicated that a bystander who watched the accident gave a policeman the following account. In the Control condition, no false presupposed elements were introduced. In the Presupposed–Neutral Source condition, three elements not present in the slides were provided in the account. Of these, two (red car and bushes) were the same as in Experiment 1; the third (oily spot on the pavement) was different. In the Presupposition–Biased Source condition, the testimony was said to be given to a policeman by the driver of Car A, the driver who obviously caused the accident. This necessitated some wording changes, for example, “As Car A was traveling north on Jones Street” was replaced by “As I was traveling north on Jones Street.” Otherwise, the Presupposed–Neutral Source and Presupposed–Biased Source were identical, including the manner of introduction of the critical presuppositions. Appendix C presents the entire accounts.

The final questionnaire consisted of nine questions, which asked whether the subject had seen some particular element, including the three critical elements introduced in the Presupposed conditions. The entire questionnaire is given in Appendix D.

Procedure. Subjects were given the same general orientation instructions and slide presentation as in Experiment 1. After the last slide, the eyewitness accounts were distributed. As in Experiment 1, the different forms were previously randomly mixed and distributed to the class. After the subjects had read the account, the questionnaire was distributed. Subjects were instructed to answer “Yes” or “No” based on what they had seen in the slides.

Results and Discussion

As in Experiment 1, the data of interest were the number of critical items answered “Yes.” The average number of “Yes” responses to the three critical items were: Control ($n = 36$)—.58; Presupposed–Neutral Source ($n = 38$)—1.11; and Presupposed–Biased Source ($n = 37$)—.78. The overall $F(2, 108)$ was 3.80, $p < .05$. By Newman–Keuls comparisons, the Control and Presupposed–Biased Source groups were significantly different from the Presupposed–Neutral Source group, $p < .05$, but were not significantly different from each other ($p > .05$). The filler questions were not treated differently by the three groups; the average number of “Yes” responses per group were: Control—3.47, Presupposed–Neutral Source—3.80, Presupposed–Biased Source—3.54, $F < 1$.

Thus these results confirm the finding of Experiment 1, despite a change in the method of introducing the presuppositions and a change in the subject population. Both experiments confirm the Loftus finding that the introduction of presuppositions by sources presumed to be neutral results in the acceptance by subjects of the presuppositions as fact in memory. However, when these presuppositions are introduced by a source that might have intentions to

deceive, subjects do not "remember" the presuppositions as facts.

GENERAL DISCUSSION

Both experiments replicated the Loftus finding but show that this effect is canceled by attributing the verbal material to a source that may be presumed to be biased.

The relationship of this research to earlier work on persuasion and source credibility bears comment. In particular, the work of Hovland and his collaborators (cf. Hovland, Janis, & Kelly, 1953) showed that the extent of a message recipient's trust in the accuracy of the communicator and consequent acceptance of the message depend directly on whether the latter is perceived as having something to gain, a conclusion like one that could be made here in relation to both experiments. Further, Hovland et al. (1953) discuss evidence showing that social roles provide cues as to the likely intentions of the communicator. This was an implicit assumption of the present manipulation in Experiment 1, using "lawyer" as a social role to cue an intention to deceive. This persuasion literature is longstanding and accepted. In the present context though, there seems to be an existing belief that presuppositions have the special status of being logically necessary to the message. In the source credibility research, listeners dealt with assertions and could simply treat those assertions as questionable. But presuppositions might be treated less suspiciously. As is already clear, though, the current data verify that presuppositions do not so clearly have this logically necessary status. These data show that presuppositions will also be readily discounted when the source is questionable.

While these data are simple, there are two issues that should be dealt with. First, there was some difference (though nonsignificant) between the Control Condition and the Presupposition-Biased Source (Experiment 2) and Presupposition-Specified Source (Experiment 1). But even a reliable difference would not weaken the argument, for the data show a sig-

nificant reduction in the acceptance of presuppositions. Clearly, if these studies provide a reasonable estimate of the effect when the source of the presupposition is suspect, there is no reason to believe the effect to be of great magnitude. And there is also reason to believe that the present manipulation is somewhat weak. Providing a source by a brief written statement that such-and-such source is involved seems intuitively less powerful than hearing that person directly.

The second issue has to do with an important alternative class of explanation that has some plausibility. Suppose subjects who are told that a lawyer is involved in the questioning thereby become generally conservative in their answers to the final questionnaire. Perhaps they only answer "Yes" to questions about which they are more certain, or perhaps they are generally and indiscriminately suspicious about questions. Or perhaps the phrase "lawyer for the defendant" is nothing more than a demand cue from the experimenter. This range of explanations could, individually or jointly, alter subjects' responses to the final questionnaire without implicating memory processes. It is difficult to completely discount all of these potential effects. Based on the data, though, one fact is clear: the rate of "No's" to the filler items is the same in all conditions. If response bias, defensiveness, or demand are operating in the Presupposed-Specified Source or Presupposed-Biased Source, they do not result in subjects answering "No" indiscriminately. Nothing gives subjects the cue that they should say "No" to items in general.

We argue that acquiring information from the speech of others is different from the typical kind of activity studies in the laboratory. Listeners normally treat all elements, including presupposition, in terms of the presumed intentions of speakers. Theoretical approaches to psycholinguistics must incorporate such pragmatic factors. Practical applications must give a prominent place to this aspect of language. If a lawyer poses a question containing pre-

suppositions, the witness may be on guard against accepting such information as fact. Of course, a lawyer can be skillful at persuading witnesses to believe presuppositions (or assertions), effectively utilizing the force of authority or evoking personal objectivity. Ultimately, the acceptance of presuppositions is not an automatic result of the perception and comprehension of a sentence, but is part of complex cognitive activities that depend on much more than language input.

APPENDIX A: EXPERIMENT 1—INITIAL QUESTIONNAIRE

The accompanying diagram will help you remember how the two cars involved in the accident are labeled, the compass directions, and so on. The car, which was traveling away from the camera and struck the other car in the side, is designated Car A. The other car, approaching from the camera's right, is designated Car B. Answer each question as accurately as you can based on what you saw in the pictures. Write the answer to the left of the question number.

[These questions were prepared by the lawyer representing the driver of Car A. Assume that you are a real eyewitness to this accident. Consider the source of these questions, but answer as accurately as you can.]^a

1. Was the stop sign clearly visible to the driver of Car A?
2. Was there a one-way sign?
- *3.^b Could the (car/red car) which passed through the intersection going East have obscured Car A's view of approaching Car B?
4. Were there any dents in the side of Car B after the collision?
5. Did it seem that Car A tried to stop or slow before entering the intersection?
- *6. Could (anything/the bushes) on the southeast corner have interfered with Car A's view of traffic approaching from the east?
7. Was the yellow van parked on the west side of Jones Street north of the intersection close enough to have been struck by either car?
8. Was there any indication that Car B's driver was behaving erratically?
- *9. Was (anyone/the man) standing in the driveway north of the northeast corner looking toward the cars prior to the collision?
10. How fast do you think Car A was traveling as it approached the intersection?
11. How fast do you think Car B was traveling as it approached the intersection?
- *12. Was the (vehicle/blue truck) parked on the north side of Smith St. apparently too far from the curb?
13. Could Car B have avoided collision by maintaining its speed?

^a This paragraph appeared only on Presupposed—Specified Source form.

^b Items with * are the misleading questions. Parenthetic words were varied between conditions, word(s) before the "/" for the Control condition and the words after the "/" for the other conditions. No "*" appeared on subject's questionnaire.

APPENDIX B: EXPERIMENT 1—FINAL QUESTIONNAIRE

Answer each of the following questions as accurately as you can based on what you saw. Write the answer to the left of the question number. Please indicate a "Yes" or "No" answer to each question.

1. Did you see a Stop sign?
- *2.^a Did you see a red car?
3. Did you see a parked blue car?
- *4. Did you see bushes on the southeast corner?
- *5. Did you see a man standing in a driveway?

6. Did you see dents in the side of Car B?
7. Did you see a parked yellow van?
8. Did you see a telephone pole?
- *9. Did you see a parked blue truck?
10. Did you see Car A's brake lights on?

Presupposed—Biased Source

Immediately following the accident, a policeman arrives on the scene. The Driver of Car A gets out of his car and gives the policeman the following account of the accident:

As I was traveling north on Jones Street, the driver of *the red car* which passed in front of me from left to right honked his horn. I was going about 25 miles per hour, but slowed down to a full stop at the intersection.

My view to the right being blocked by the stop sign and *the bushes* on the southeast corner, I didn't see the other car approaching at first. By the time I noticed it, I was already about 10 ft into the intersection and traveling approximately 10 miles per hour. I hit my brakes—the other car kept coming and didn't swerve—then I skidded a couple of seconds on *the oily pavement* before I finally crashed into the side of his car.

Note. There was no underlining in the accounts shown subjects; it is added here for reader convenience.

^a Questions with "*" are the critical items for which the queried fact was presupposed in the initial questionnaire for the two Presupposed conditions. No "*" appeared on the subject's questionnaire.

APPENDIX C: ACCOUNTS OF ACCIDENT USED IN EXPERIMENT 2

Control

Immediately following the accident, a policeman arrives on the scene. A bystander who watched the whole accident gives the policeman the following account of the accident:

As Car A was traveling north on Jones Street, the driver of the car, which passed in front of him from left to right, honked his horn. Car A was going about 25 miles per hour, but slowed down to a full stop at the intersection.

His view to the right being blocked by the stop sign on the southeast corner, he didn't see the other car approaching at first. By the time the driver of Car A noticed it, he was already about 10 ft into the intersection and traveling approximately 10 miles per hour. Car A hit his brakes—Car B kept coming and didn't swerve—then Car A skidded a couple seconds before it finally crashed into the side of the other car.

Presupposed—Neutral Source

As Car A was traveling north on Jones Street, the driver of *the red car*, which passed in front of him from left to right honked his horn. Car A was going about 25 miles per hour, but slowed down to a full stop at the intersection.

His view to the right being blocked by the stop sign and *the bushes* on the southeast corner, he didn't see the other car approaching at first. By the time the driver of Car A noticed it, he was already about 10 ft into the intersection and traveling approximately 10 miles per hour. Car A hit his brakes—Car B kept coming and didn't swerve—then Car A skidded a couple of seconds on *the oily pavement* before it finally crashed into the side of the other car.

APPENDIX D: FINAL QUESTIONNAIRE FOR EXPERIMENT 2

Now you are asked to tell what happened, based on what you saw. The insurance companies involved have prepared the following list of questions. Answer each item separately.

1. Did you see each of the following:
 - a. Stop sign
 - *b.^a red car
 - c. dents in the side of Car B
 - *d. bushes on the southeast corner
 - e. broken glass
 - f. one way sign
 - *g. oily spot on pavement
 - h. parked car on Smith Street
 - i. Car A's brake lights
2. Indicate briefly what else you observed:
3. Other comments:

^a Questions with "*" are the critical items for which the queried fact was presupposed in the initial questionnaire for the two Presupposed conditions. No "*" appeared on the subject's questionnaire.

REFERENCES

- HORNBY, P. A. Surface structure and presupposition. *Journal of Verbal Learning and Verbal Behavior*, 1974, 13, 530-538.
- HOVLAND, C. I., JANIS, I. L., & KELLEY, M. M. *Communication and persuasion*. New Haven: Yale Univ. Press, 1953.
- LOFTUS, E. F. Leading questions and the eyewitness report. *Cognitive Psychology*, 1975, 7, 560-572.
- LOFTUS, E. F., MILLER, D. G., & BURNS, J. J. Semantic integration of verbal information into a visual memory. *Journal of Experimental Psychology: Human Learning and Memory*, 1978, 4, 19-31.

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