

Information Utility and the Multiple Source Effect

Stephen G. Harkins
Northeastern University

Richard E. Petty
University of Missouri—Columbia

In a series of studies, Harkins and Petty (1981a) identified a multiple source effect whereby information presented by multiple sources received greater scrutiny than did the same information presented by a single source. One implication of this was that when multiple sources presented strong arguments, the arguments elicited more favorable issue-relevant thoughts and more agreement than when the same strong information was presented by a single source. However, when multiple sources presented weak arguments, the arguments elicited more unfavorable issue-relevant thoughts and less agreement than when the same weak information was presented by a single source. This article addresses why multiple sources enhance processing. We report three experiments consistent with the view that multiple sources enhance message processing because of recipients' perceptions that information from multiple sources is more likely to be based on different perspectives and independent pools of knowledge and, thus, is more worthy of diligent consideration. Specifically, in Experiment 1 we found that the persuasive advantage of multiple sources presenting strong arguments was eliminated when the sources were said to have formed a committee rather than being independent. In Experiment 2, we found that the committee manipulation eliminated the persuasive advantage of multiple sources presenting strong arguments only when this information was available prior to argument exposure and not when it was provided after exposure. In Experiment 3, subjects were led to believe that the multiple sources who formed a committee were either very similar or dissimilar. When the committee was believed to include members with similar perspectives, the persuasive advantage of multiple sources presenting strong arguments was eliminated, but when the committee was believed to include members with dissimilar perspectives, the persuasive advantage of multiple sources was retained. In sum, the present research is consistent with the view that the power of multiple sources to enhance issue-relevant thinking lies in their perceived informational independence and the divergent perspectives they are presumed to represent.

It is not at all uncommon for a person to be exposed to persuasion attempts by multiple sources. At political rallies, a number of speakers argue in favor of or against some position or candidate. In advertising, a number of consumers extol the virtues of a given product. Opposing attorneys attempt to persuade a jury of the merits of their cases by using a parade of witnesses to bolster their positions. Despite the frequency of their occurrence, the effects of multiple sources on persuasion have received relatively little attention in the attitude-change literature. This lack of attention may stem from the fact that researchers feel that multiple source effects are already well understood. For example, we know that conformity pressures resulting from the knowledge that others support a position can lead to movement toward that attitude position simply as a result of normative influence (Krech, Crutchfield, & Ballachey, 1962). Also, multiple sources may generate different arguments to support their position, and research shows that increasing the number of arguments used in a persuasive message leads to enhanced persuasion (Calder, Insko, & Yandell, 1974). Thus, multiple sources might be expected to be more persuasive as a result of conformity pressures or the different arguments the sources might generate, or both.

However, in previous research on this issue, actual exposure

to persons or their arguments was confounded with the mere knowledge that the persons or arguments existed. Participants were exposed to the positions of one or multiple sources or to one or multiple arguments, but subjects in the one-source or one-argument condition were not explicitly informed that multiple sources or multiple arguments supporting the advocated position existed and that they might be exposed to these sources and arguments. Thus, it was not possible to determine whether the number of sources or arguments, or both, served as simple peripheral cues as to the validity of the advocacy (e.g., Petty & Cacioppo, 1984) or whether actual exposure to the sources presenting the arguments was required for persuasion to occur.

In an attempt to disentangle these factors, Harkins and Petty (1981a) exposed participants to one or three arguments presented by one or three sources, but they held constant background information about arguments and sources by telling all of the participants that three persons who advocated a particular position had been videotaped giving three arguments on the issue and that they might be exposed to these people and their arguments. This allowed a test of whether actual exposure to sources or arguments had a persuasive impact over and above that achieved by the mere knowledge of the number of sources and arguments to which they might be exposed. Two control groups were also incorporated into the design: an *information-only* group in which participants were only given the background information about the videotape and an *attitude-only* group in which participants gave their opinions on the topic but did not receive background information.

Correspondence concerning this article should be addressed to Stephen G. Harkins, Department of Psychology, Northeastern University, 360 Huntington Avenue, Boston, Massachusetts 02115.

Analysis of the attitude-change measures revealed that the information-only manipulation led to attitudes more favorable than those held by the attitude-only participants. Thus, simple knowledge of the number of sources and arguments in favor of a position was sufficient to produce attitude change. However, only when participants were exposed to multiple sources delivering multiple arguments were they more persuaded than participants in the information-only condition. A single source presenting a single argument, multiple sources presenting different versions of the same argument, and different arguments given by a single source each led to no more persuasion than that achieved in the information-only control group. Also, across experimental conditions there were no differences in the number of arguments recalled or the percentage of peers participants estimated would support the advocacy.

This pattern of results is consistent with two plausible explanations. The first is an *attributional* explanation. Participants who see three different sources each generate a different, yet convincing, argument might reasonably conclude that there is a large pool of good arguments in favor of the advocated position, and therefore, the position must be worthy of support. Seeing three people each present a variation on a single theme would not lead participants to come to this conclusion, nor would exposure to a single source, even when he or she came up with three different arguments, because any one source presumably would be motivated to avoid repetition. A second explanation is based on *message elaboration* (Petty & Cacioppo, 1981, 1986a, 1986b). This account suggests that participants who see multiple sources engage in more argument-relevant processing than do participants in the other conditions. That is, each time a new source appears, the participant "gears up" to process the message. If the arguments are new and compelling, the enhanced processing elicited by multiple sources should result in the generation of additional thoughts favorable to the advocacy or result in fewer thoughts unfavorable to the advocacy, or both. If the arguments are old, however, the enhanced processing might result in no new thoughts, especially if the repeated arguments are sufficiently simple as to have been processed completely during the initial exposure (cf. Cacioppo & Petty, 1985). If the same source appears again, even with new arguments, the target may put less effort into processing because this source has been heard from already. Consistent with this reasoning, multiple-source-multiple-argument participants generated more favorable thoughts about the advocated position than did participants in all the other conditions.

Harkins and Petty (1981a) tested these two possibilities in a second experiment. In a key condition in this study, subjects who received multiple arguments from multiple sources were led to believe that the arguments that were presented exhausted the pool of good arguments favoring the position. In this case, the attributional interpretation predicts that no persuasive advantage would be conferred by the multiple sources presenting multiple arguments because no inferences about a larger argument pool should be made. Although manipulation checks revealed that the argument pool induction was successful, limiting the perceived pool of arguments did not eliminate the multiple source effect. These results are consistent with a processing interpretation because limiting the size of the argument pool

should not affect one's motivation to elaborate the arguments that are actually presented.

The message-elaboration interpretation received further support from the results of a third experiment (Harkins & Petty, 1981a) in which the number of sources and the quality of the arguments were jointly manipulated. Participants who were exposed to three sources presenting three convincing arguments were more persuaded and generated more favorable thoughts than did participants exposed to the same arguments presented by a single source. When the arguments were unconvincing, however, exposure to multiple sources led to less persuasion and to the production of more counterarguments than did exposure to the same information from a single source.

These results suggest that actual exposure to sources and arguments has an effect over and above that achieved by mere knowledge of their existence, but only when multiple sources present multiple arguments. What is more, the studies suggest that this persuasive advantage arises because this combination of features leads to more effort being put into processing the message. If the arguments are convincing, more favorable thoughts and fewer counterarguments result from exposure to multiple sources, which leads to greater persuasion. If the arguments are unconvincing, more counterarguments and fewer favorable thoughts are generated in response to multiple sources, which leads to reduced influence.

In a subsequent study (Harkins & Petty, 1981b), the introduction of a secondary, distraction task was found to reduce the normal persuasion found when strong arguments were presented by multiple sources to the level found when the same strong arguments were presented by a single source; however, argument recall, the number of good arguments thought to exist in favor of the advocacy, and the percentage of classmates thought to support the proposal were not affected. Therefore, it appears that it was not that all processing ceased upon exposure to the distractor; rather, the additional idiosyncratic elaboration of the cogent arguments presented, which is normally elicited by exposure to multiple sources presenting multiple arguments, was not possible given the requirements of the secondary task.

Although the research we have reviewed clearly indicates that the multiple source effect stems from the greater processing that arguments from different sources receive, it is not clear what it is about multiple sources that leads to the additional processing. One possibility is based on *information utility*; that is, when multiple arguments are presented by multiple sources, the target sees the different arguments as independent bits of information. When the same source appears to present his or her second argument, the target may not engage in additional thought because he or she may feel that he or she has already heard this perspective. When different sources present the arguments, the sources may be seen as viewing the problem from different orientations, as drawing on different bodies of information, and so on. Given this independence, the message recipients may think about each argument more thoroughly. However, a second possibility is *attentional*; that is, the novelty of seeing a new person or a new name may capture the subject's attention. The same source is adapted to after a brief period of time. The reorientation to a new stimulus may be responsible for the greater processing by multiple sources.

A number of implications follow from these two possibilities. The information-utility account suggests that the enhanced processing of multiple sources is motivated by their informational independence. Thus, if the multiple sources were made dependent in some way, the multiple source effect should be eliminated. The attentional account, however, suggests that informational dependence should not reduce the multiple source effect because the novelty of the multiple sources remains.

Experiment 1

In our first experiment, we compared the information-utility and attention explanations by replicating the multiple-source-multiple-argument and single-source-multiple-argument conditions of Harkins and Petty (1981a, Experiment 1) and adding a multiple-source-multiple-argument condition in which the subjects were informed that the sources had formed a committee to research the issue in question. In the latter condition, participants were told that the arguments generated represented the results of the committee's joint efforts. To the extent that the informational independence of the sources underlies the multiple-source-multiple-argument effect, the committee manipulation should eliminate its persuasive advantage.

Method

Participants. The participants were 66 Northeastern University students who received course credit for their participation. They were tested individually and assigned randomly to one of three conditions: three-arguments-three-independent-sources, three-arguments-one-source, three-arguments-three-member-committee.

Procedure. All of the participants were told that they were taking part in an attitude survey and were asked to read the following instructions:

The Psychology Department at Northeastern University is cooperating with the Faculty Committee on Academic Affairs in an attempt to measure student opinions concerning several proposals that are currently under consideration. One proposal that the Committee has discussed involves the introduction of senior comprehensives. If this plan were to be implemented, seniors prior to graduation would take a series of exams designed to demonstrate competency in both the general skills that any college graduate should possess and the specific skills required by the particular major. Failure to pass these tests would require remedial work before the degree is conferred. As one means of measuring student opinion on this issue, the Faculty Committee asked us to have several students look into this issue and report their findings and views. We have so far received the reports of three Northeastern students. Each of these students, it turned out, favored the comprehensive exam idea.¹

In the noncommittee conditions, the participants then read: "Today we would like you to read portions of the reports to obtain your reactions." In the committee condition the participants read: "These students formed a committee and worked together to research and write their report. Today we would like you to read portions of the committee's report to obtain your reactions."

Next, all of the students read elaborations of the following three arguments in favor of instituting senior comprehensives: (a) These tests would ensure that only high-quality, knowledgeable students would be associated with Northeastern, thus increasing the prestige of the alumni and the academic institution. (b) The comprehensive exams would provide an incentive for students to study rather than simply cram to pass

tests. Studies have shown that universities with comprehensive exams have resisted the national trend of declining scores on standardized achievement tests. (c) Comprehensive exams attract larger, more well-known corporations to recruit students. Students from schools with comprehensive exams fare better on the job market. These were three arguments from the *strong* messages used by Petty, Harkins, and Williams (1980, Experiment 2) and Harkins and Petty (1981a, Experiment 3).

Each argument was typed on a separate sheet of paper, and the order of presentation was randomized for each participant. Placed in front of each argument sheet was a face sheet on which was written the following: "The argument you will read on the following page was written by _____ who is a _____." In the three-arguments-three-independent sources and the three-member-committee conditions, a different name appeared on each face sheet, but in all cases, the student was a junior. The same three names were always used (Tim Brock, Gary Wells, John Harvey), and their order was also randomized. In the three-arguments-one-source condition, the same name appeared on all three face sheets. The name was one of the preceding three and was randomly determined for each participant.

After reading these arguments, participants were asked to indicate, on an 11-point scale ranging from *do not agree at all* to *agree completely*, the extent to which they agreed with the Faculty Committee's proposal. They also responded to the stem "I think senior comprehensives are" on a series of four 7-point semantic differentials: *good/bad*, *beneficial/harmful*, *foolish/wise*, *unfavorable/favorable*.

After this, participants were given 2½ min to list their thoughts on senior comprehensives. They were then asked to go back and rate these thoughts as (+) in favor of comprehensives, (0) neither in favor nor opposed, or (-) opposed to comprehensives (see Cacioppo, Harkins, & Petty, 1981). After rating their thoughts, participants were requested to list as many of the arguments used in the material as they could remember.

Finally, participants responded to a series of ancillary measures that included questions asking to what extent the arguments made their points effectively, how well written the arguments were, how much effort was put into evaluating the arguments, how much effort was put into thinking about the implications of the arguments (all on 11-point scales), how many good arguments in favor of senior comprehensives they thought there were, and what percentage of students at Northeastern would agree with the message's conclusion. After responding to these questions, participants were debriefed and dismissed.

Results

Attitude measures. Because previous research (Harkins & Petty, 1981a) has shown them to be highly correlated, responses to the self-rating scale and the sum of the semantic differentials were each standardized and then added to form a combined attitude index. An overall one-way analysis of variance (ANOVA)

¹ Note that most students at Northeastern were initially opposed to the notion of senior comprehensives. In the present set of studies, we did not collect pretest attitude measures, nor did we include an attitude-only control group. However, in previous research using this topic (Harkins & Petty, 1981a), we did include such a control group and found that these participants were opposed to the notion of senior comprehensives ($M = 3.1$ on an 11-point scale). In addition, as part of a social psychology lab, attitude data have been collected on this topic during each of the past 3 years, which encompasses the period during which the present research was conducted, and these data suggest that students remain opposed to this notion (in 1984, $M = 5.0$; in 1985, $M = 4.85$; in 1986, $M = 4.22$ —all on 11-point scales).

revealed reliable differences, $F(2, 63) = 4.92, p < .02$. Replicating previous findings (Harkins & Petty, 1981a), participants exposed to the three presumably independent persons giving three arguments were more persuaded ($M = .93$) than participants who responded to the same three arguments presented by a single source ($M = -.30, p < .05$; Tukey's honestly significant difference [HSD] test; Kirk, 1982). However, consistent with the information-utility hypothesis, when told that the three sources had "formed a committee and worked together," participants were no more persuaded than single source participants ($M = -.63, p > .20$) and were reliably less persuaded than the participants who received the arguments from three independent sources ($p < .05$).

Thought listing. Participants did not differ in the total number of thoughts they listed in the 2½-min period (overall $M = 4.13$).² However, consistent with the findings for the attitude measure, participants in the three-arguments–three-independent-sources cell generated more *positive* thoughts ($M = 3.18$) than did participants in either the three-argument–one-source ($M = 2.09$) or the committee conditions ($M = 1.63, ps < .05$), which did not differ ($p > .20$), overall $F(2, 63) = 6.42, p < .01$. As expected, the pattern of results for negative thoughts was the reverse of this. Three-arguments–three-independent-sources participants generated fewer thoughts opposed to the advocacy ($M = .41$) than did participants in the three-arguments–one-source ($M = 1.23$) and the committee conditions ($M = 1.68, ps < .05$), which did not differ reliably ($p > .20$), overall $F(2, 63) = 7.39, p < .01$. A thought-favorability index (favorable – unfavorable thoughts) also produced a significant effect, $F(2, 63) = 9.8, p < .01$. Participants in the three-arguments–three-independent-sources cell produced a more positive profile of thoughts ($M = 2.8$) than did participants in either the three-arguments–one-source ($M = .86$) or the committee conditions ($M = -.05, ps < .05$), which did not differ reliably ($p > .20$).

Recall. An argument was scored as accurately recalled if it correctly summarized the main point of the argument. Overall, 2.5 of the three arguments were recalled correctly, but there were no reliable differences among conditions.

Ancillary measures. No reliable differences were found in the analyses of the ancillary measures. Overall, participants thought that there were 6.7 good arguments favoring the advocacy and that 51% of their classmates would agree with the notion.

Discussion

First of all, Experiment 1 replicated the findings of the Harkins and Petty (1981a) research. Information presented by three sources was more convincing than the same material presented by a single person. Consistent with the message-elaboration view (Petty & Cacioppo, 1981, 1986a, 1986b), as a result of processing strong message arguments, participants in the former condition generated a more positive profile of thoughts than did participants in the latter condition. However, when told that the sources had colluded in the generation of their arguments, this persuasive advantage was eliminated. Consistent with the notion that independence of the sources is required to

obtain the multiple source effect, committee participants were no more persuaded than single source participants.³

Further evidence consistent with the independence hypothesis comes from Wilder's (1977) research on conformity, in which he found that the manner in which sources of influence are grouped affects the amount of social influence that they exert. For example, when subjects perceive four people as two groups of two, these two entities exert greater social influence than when they are categorized as one group of four. As Wilder (1977) wrote, "This process is analogous to a Gestalt principle of organization in which elements exhibiting similar characteristics are grouped together" (p. 254). To the extent that the sources of influence are perceived as nonindependent, their influence is diminished.

However, Wilder's (1977) research does not suggest why the perception of nonindependence leads to reduced influence. We argue that the reduction in influence occurs because targets put less effort into *processing* the arguments propounded by nonindependent sources. That is, the committee manipulation has its effect because the perception of source independence is integral to the motivation of enhanced processing, and the committee manipulation undermines this process. However, the committee manipulation could have its effect through a more peripheral route. Specifically, the committee manipulation could serve as a discounting cue (Hovland, Lumsdaine, & Sheffield, 1949).

² As in previous research on the elaboration likelihood model (see Petty & Cacioppo, 1986a, 1986b), we did not necessarily expect a difference in the *total* number of thoughts listed. If people hear a strong message on a counterattitudinal issue and do not process it, they would be expected to be guided by their initially unfavorable attitudes and to list mostly unfavorable thoughts about the issue. However, if they diligently process the strong message arguments, they should be both less likely to generate unfavorable thoughts and more likely to generate favorable thoughts. Thus, although the total number of thoughts may not differ, the profile of thoughts should be more tied to the nature of the message arguments under high- than under low-argument-processing conditions. In short, greater message processing may affect the quality instead of, or in addition to, the quantity of thoughts listed.

³ The processing argument suggests that exposure to multiple, independent sources affects persuasion by modifying the pattern of thoughts generated by exposure to the message arguments. Specifically, exposure to multiple, independent sources prompts processing of the message arguments, which, if the arguments are convincing, results in a preponderance of positive thoughts and persuasion. Of course, the opposite causal structure is also a logical possibility; that is, the attitudes adopted by the participants affect thought generation. If the causal flow is from thoughts to attitude, rather than the reverse, the magnitude of the attitude effect should be reduced if a thought index is used as a covariate. However, the reduction should be less if the opposite analysis is conducted, because thoughts are causally prior. (See Insko, Turnbull, & Yandell, 1974, for a justification of this procedure.)

To test this notion, we used the difference between the number of positive and negative thoughts as our thought index. When this index was used as the covariate, the attitude effect was no longer reliable, $F(2, 62) = 2.10, p = .13$. However, when the attitude measure was used as the covariate, the thought index remained reliable, $F(2, 62) = 6.50, p < .01$. This pattern of data is *consistent* with the notion that it is the pattern of thoughts generated by exposure to arguments delivered by multiple, independent sources that leads the participants to adopt a particular attitude position, rather than the reverse.

Learning that the message had been generated by a committee may result in no attitude change without affecting processing. Goethals and Nelson (1973) have shown that for matters of belief, greater confidence in the correctness of a judgment is inspired by agreement from dissimilar rather than similar others. Reckman and Goethals (1973) have shown that when emphasis is placed on accuracy of judgment, participants show a preference for partners whose interpersonal judgment styles are dissimilar to their own. As Goethals and Nelson (1973) noted, "The greater the difference in perspectives converging on a judgment, the more confidently the judgment can be held" (p. 122). Of course, similarity/dissimilarity in their study referred to the degree of difference between a person himself or herself and another, but the same process could operate when a target faces multiple sources who seem similar or dissimilar. Thus, the committee manipulation could lead to the inference that there is a commonality of perspective, leading the participants to discount the arguments.

Experiment 2

In the current research, information about the committee was presented before subjects were exposed to the message so that it could affect information processing. However research on discounting cues indicates that they are very effective even if they come after the message (e.g., Gruder et al., 1978; Hovland & Weiss, 1951). For example, Gruder et al. (1978), in their study of the sleeper effect, informed participants that the conclusion of a message to which they had just been exposed was false, inaccurate, and wrong and found no immediate attitude change. Over time, however, the message became more effective as the discounting cue wore off (sleeper effect). This research suggests that if the committee manipulation serves as a discounting cue it should not matter whether this information comes before or after subjects are exposed to the message. In fact, recent research suggests that discounting cues are especially effective if they come after the message (Pratkanis & Greenwald, 1985). On the other hand, order is crucial if the independence hypothesis is correct and the committee manipulation works by reducing the processing of the arguments. Only when the committee manipulation comes first can it influence the processing of the persuasive messages. If presented afterward, it should have no effect because the processing has already taken place. Nevertheless, it should still be effective as a discounting cue.

We tested this possibility by using a pre-post design in which all of the subjects were exposed to multiple sources presenting multiple arguments and in which half were told of the independence or nonindependence of the sources prior to exposure to the arguments, and half were informed subsequent to exposure to the arguments but prior to responding to the dependent measures. If the committee manipulation serves as a discounting cue, order should not matter. If anything, the cue should be more effective when it comes afterward. If the independence of the sources is integral to motivating processing, persuasion should take place only if the cue comes after the message.

Method

Participants. Eighty-four undergraduates at Northeastern University took part in the experiment for partial course credit. The design

was a 2 (independent sources vs. committee) \times 2 (preargument vs. postargument) design. The pre-post manipulation refers to whether the participants were informed *before* or *after* they read the arguments that the writers of the arguments had worked independently or as a committee. Participants were tested individually and were assigned randomly to one of the four conditions.

Procedure. Upon arrival, all of the participants read the same initial instructions used in Experiment 1, which indicated that the Faculty Committee on Academic Affairs had selected reports from three students on the senior comprehensive exams idea. Participants in the independent-sources-preargument condition then read: "These students worked independently to research and write their reports." The participants in the committee-preargument condition read: "These students formed a committee and worked together to research and write their report." All participants then read: "Today we would like you to read portions of the reports to obtain your reactions."

Participants were then presented with the same three arguments used in Experiment 1, which made the points that employment opportunities would be better, the school would be more prestigious, and the quality of the students would improve. Each argument was preceded by a face sheet that attributed the argument to one of three persons, as in the three-arguments-three-sources-replication condition of Experiment 1. Once again, the order of arguments and order of names were randomized.

After reading the arguments, all of the participants in the preargument conditions read: "We would like to get your reactions to the reports. Please respond to the questionnaire." In the independent-sources-postargument condition, participants read: "These students worked independently to research and write their reports, portions of which you have just read." In the committee-postargument condition, participants read: "These students formed a committee and worked together to research and write their report, portions of which you have just read." In both postargument conditions, participants then read, "We would like to get your reactions to the reports. Please respond to the questionnaire."

The questionnaire consisted of the same dependent measures used in Experiment 1: an 11-point rating scale and semantic differentials, thought listings, and a recall measure. A manipulation check for the committee-independent-sources manipulation, which asked the participants to rate the extent to which they felt the writers researched and wrote their arguments independently, was added to the ancillary measures used in the first experiment.

Results

The data were analyzed in 2 (independent sources vs. committee) \times 2 (preargument vs. postargument) ANOVAS, and where appropriate, the Tukey's HSD (Kirk, 1982) was used for a posteriori tests.

Attitude measures. The analysis of the standardized and summed attitude measures revealed main effects for independent-sources-committee, $F(1, 80) = 4.72, p < .05$, and for the preargument/postargument conditions, $F(1, 80) = 6.33, p < .05$. Independent sources were more convincing ($M = .42$) than sources who were part of a committee ($M = -.42$), and participants in the postargument condition were more convinced ($M = .48$) than those in the preargument condition ($M = -.48$).

However, each of these main effects must be interpreted in terms of the significant Sources \times Preargument/Postargument interaction, $F(1, 80) = 10.21, p < .05$ (see Table 1). Participants who learned that the sources were independent before they read the arguments were more convinced by these arguments ($M = .55$) than were participants who were informed that the sources

Table 1
Major Dependent Measures for Experiment 2

Condition	Dependent measure			
	Standardized attitude scores	Positive thoughts	Negative thoughts	Favorability thought index
Preargument-independent	0.55 _a	3.23 _a	0.71 _a	2.52 _a
Preargument-committee	-1.51 _b	1.28 _b	2.42 _b	-1.14 _b
Postargument-independent	0.29 _a	3.00 _a	1.19 _a	1.81 _a
Postargument-committee	0.68 _a	3.14 _a	0.90 _a	2.24 _a

Note. Means within a column not sharing a subscript are significantly different at $p < .05$ by the Tukey's honestly significant difference test.

had formed a committee prior to being exposed to the arguments ($M = -1.51, p < .05$). However, this difference was eliminated when participants learned, after reading the arguments, how the sources had worked. Participants who were told afterward that the sources had formed a committee were as convinced ($M = .68$) as those subjects who were told that the sources had worked independently ($M = .29, p > .20$). These postargument participants were as persuaded as participants exposed to the independent sources in the preargument condition ($p > .20$), and they were more persuaded than those in the committee-preargument condition ($p < .05$).

Thought listings. Participants did not differ by condition in the total number of thoughts they listed during the 2½-min period (overall $M = 4.92$). The patterns of results for positive and negative thoughts were consistent with the data for attitude measures. For positive thoughts, there were main effects for sources, $F(1, 80) = 5.04, p < .05$, and preargument/postargument, $F(1, 80) = 4.04, p < .05$, but these must be interpreted in terms of the significant Sources \times Preargument/Postargument interaction, $F(1, 80) = 6.76, p < .05$. As shown in Table 1, participants in the independent-sources-preargument condition and in the independent-sources-postargument and committee-postargument conditions generated equivalent numbers of positive thoughts ($ps > .20$), which was reliably more than the number generated in the committee-preargument condition ($ps < .05$).

For negative thoughts, only the interaction was reliable, $F(1, 80) = 7.76, p < .05$, but its pattern was consistent with that characterizing positive thoughts. As shown in Table 1, committee-preargument participants generated reliably more negative thoughts than did participants in any of the other three conditions ($ps < .05$), which did not differ among themselves ($ps > .20$).

Analysis of the thought-favorability index (favorable - unfavorable thoughts) revealed significant main effects for sources, $F(1, 80) = 6.43, p < .02$, and preargument/postargument, $F(1, 80) = 4.36, p < .05$, as well as a reliable interaction, $F(1, 80) = 10.29, p < .01$. Participants in the committee-preargument condition produced a less favorable profile of thoughts than did participants in any of the other three conditions ($ps <$

$.05$), which did not differ among themselves ($ps > .20$). The means are presented in Table 1.

Recall. Participants did not differ in their recall of the arguments. They remembered the gist of 2.24 of the three arguments.

Ancillary measures. Among the ancillary measures, participants were asked to rate the extent to which they felt that the sources had independently researched and written their reports. Consistent with the success of the source manipulation, participants in the independent-sources conditions reported that their sources had displayed greater independence ($M = 7.07$) than did participants in the committee conditions ($M = 5.80$), $F(1, 80) = 4.73, p < .05$. Note that these ratings were not affected by whether the participants learned about how the sources had worked before or after they read the arguments ($p > .20$).

As in Experiment 1, participants did not differ by condition in the number of good arguments they felt there were in favor of senior comprehensives ($M = 4.6$), nor did they differ in the percentage of their classmates they felt would agree with the proposal ($M = 54\%$).

Discussion

Consistent with the elaboration interpretation, the persuasiveness of multiple sources presenting multiple arguments was reduced only when the committee manipulation preceded exposure to the arguments. After exposure to the arguments, learning that the sources had formed a committee resulted in as much persuasion as that following from exposure to independent sources. Thus, it does not appear that simple inferences about the judgmental independence of the sources alone can account for the differences in persuasion (i.e., the committee manipulation does not appear to act as a discounting cue). It could well be, however, that inferences about independence do play a role by motivating more or less processing, which, in turn, depending on argument cogency, enhances or diminishes persuasive impact.⁴

We have focused on one aspect of the committee manipulation; that is, members of a committee may be seen as sharing a perspective, and this lack of independence in judgmental perspective may lead the subjects to process the messages less diligently. However, other aspects of the committee manipulation could also result in the elimination of the multiple source effects. Perhaps, as suggested by Wilder's (1977) notion of a gestalt, by labeling the multiple sources as a *committee*, they are all viewed as the same source. Subjects would, therefore, respond just as they do to single sources presenting multiple arguments. Alternatively, the subjects may be influenced by their perceptions of how committees work. They may feel that certain points of view are likely to be suppressed in committees, and so, the unanimity expressed by the sources may be the re-

⁴ As in Experiment 1, covariance analyses were also performed on these data. When the favorability thought index was used as the covariate, the previously reliable interaction effect for the attitude measure was no longer significant, $F(1, 79) = 2.75, p = .10$. However, when the attitude measure was used as the covariate, the interaction on the thought index remained reliable, $F(1, 79) = 4.27, p < .05$. Again, this suggested that thoughts mediated attitudes rather than vice versa.

sult of an active campaign to bring recalcitrant committee members into line, rather than an expression of a shared perspective. If participants believed this, they may think less about the arguments because they could not be sure that the views represented the sources' true feelings. For example, participants could feel that independent sources may have been more diligent in forming their opinions than sources who are members of a committee, who share the responsibility for adopting a position on the issue. Because less thought went into it, the committee members' joint position may be less worthy of thought than the positions of the sources who arrived at their conclusions independently.

Experiment 3

To test the possibility that it is the shared perspectives aspect of the committee manipulation that accounts for the reduction of the persuasive advantage of multiple sources rather than the perception of a gestalt or assumptions about how committees work, we conducted a final experiment. In this study, we informed participants in two conditions that the students had formed a committee, but we attempted to manipulate the participants' perceptions concerning the composition of the committees. In the *shared perspectives* condition, participants were told that the committee members "were selected to be as similar as possible so as to promote a congenial atmosphere among the committee members." In the *diverse perspectives* condition, participants were told that the committee members "were selected to represent as many different perspectives on campus as possible so as to generate a diversity of viewpoints on the committee." In a third condition, the sources were independent.

If simply labeling sources "a committee" or "assumptions about how committees work" (e.g., shared responsibility leads to less effort) accounts for the committee effect, there should be no difference in the amount of persuasion generated by exposure to the committee conditions, each of which should lead to less persuasion than the independent sources condition. However, if the inferences concerning independence in informational perspectives are responsible for the effect, the committee selected to represent a diversity of viewpoints should be more persuasive than the shared perspectives group.

Method

Participants. The participants were 50 Northeastern undergraduates who earned extra course credit for their participation. These students were tested individually and were randomly assigned to one of three conditions: independent sources, shared perspectives committee, or diverse perspectives committee.

Procedure. All participants read the same introduction as in the first two experiments, which explained that opinions had been solicited about senior comprehensive exams. In the independent sources condition, participants then read:

So far we have contacted four undergraduate students from Northeastern University and asked each of them to consider the senior comprehensives proposal. Today we would like you to read randomly selected portions of the students' reports to obtain your reactions.

In the shared perspectives condition, participants read:

So far, we have contacted four undergraduates from Northeastern University and asked them to form a committee to consider the senior comprehensives proposal. The members of the committee were selected to be as similar as possible so as to promote a congenial atmosphere among the committee members. Today we would like you to read randomly selected portions of the committee's report to obtain your reactions.

In the diverse perspectives condition, participants read:

So far, we have contacted four undergraduate students from Northeastern University and asked them to form a committee to consider the senior comprehensives proposal. The members of this committee were selected to represent as many different perspectives on campus as possible so as to generate a diversity of viewpoints on the committee. Today we would like you to read randomly selected portions of the committee's report to obtain your reactions.

Participants then read four arguments in favor of senior comprehensives. Three of the arguments were the same as those used in the previous two experiments. The fourth was an elaboration of the notion that the quality of undergraduate teaching would be improved. Each argument appeared on a separate sheet preceded by a face sheet. In the independent sources condition, this face sheet simply stated: "The argument you will read on the following page was written by _____." Each argument was attributed to one of four men. The order of the names and arguments was randomized for each participant.

In the shared perspectives and diverse perspectives conditions, the face sheet read: "The argument you will read on the following page was recorded by _____, a member of the committee who is a(n) _____ major." In the shared perspectives condition, the sources were all from the same major (English, education, marketing, or physics), whereas in the diverse perspectives condition each of the majors appeared. The order of arguments and sources was randomized for each participant. The major selected was randomly determined in the shared perspectives condition, and the order in which the majors appeared was randomly determined in the diverse perspectives condition.

The same dependent measures were used as in the previous studies. A manipulation check for the perspectives manipulation, which was added to the ancillary measures, asked participants to rate to what extent the sources brought to the task a variety of different viewpoints and perspectives. To determine what sorts of inferences the participants had made concerning the committee process, participants were asked to what extent the position adopted represented the students' true position, to what extent they believed the writers worked together in researching and writing their arguments, and the amount of effort the writers individually put into researching and writing their arguments.

Results

Attitude measures. A one-way ANOVA performed on the standardized and summed attitude measures revealed a significant effect, $F(2, 47) = 13.7, p < .01$. Exposure to committee members who were characterized as having diverse perspectives resulted in as much persuasion ($M = 1.16$) as did exposure to independent sources ($M = .42, p > .20$), both of which generated reliably more persuasion than did exposure to a committee with a shared perspective ($M = -1.44, ps < .05$).

Thought listings. Participants did not differ by condition in the total number of thoughts generated (overall $M = 4.7$). However, participants exposed to independent sources ($M = 2.53$) or the diverse perspectives committee ($M = 2.65$) generated reliably more positive thoughts than did participants exposed to the shared perspectives committee ($M = 1.05$), $F(2, 47) = 5.1, p < .01$. The effect for negative thoughts was not reliable, $F(2,$

47) = 3.2, $p < .06$; however, its pattern was consistent with that for positive thoughts. Participants who read the arguments attributed to the shared perspectives committee generated more negative thoughts ($M = 2.61$) than did participants exposed to either independent sources ($M = 1.53$) or the diverse perspectives committee ($M = 1.41$). On the thought-favorability index (favorable – unfavorable thoughts), participants in the independent sources ($M = 1.00$) and diverse perspectives committee conditions ($M = 1.24$) generated a more favorable thought profile than did participants exposed to the shared perspectives committee ($M = -1.56$, $ps < .05$), $F(2, 47) = 6.36$, $p < .01$.

Recall. Participants did not differ in their recall of the arguments. They remembered the gist of 2.3 of the four arguments.

Ancillary measures. Among the ancillary measures, participants were asked to rate the extent to which the students brought to the task a variety of different viewpoints and perspectives. Participants exposed to the arguments attributed to the diverse perspectives committee ($M = 5.23$) and to independent sources ($M = 5.33$) reported that the students brought a variety of viewpoints to the task to a greater extent than did participants in the shared perspectives condition ($M = 3.28$, $ps < .05$), $F(2, 47) = 3.37$, $p < .05$. Participants did not differ in the extent to which they felt the writers worked together in researching and writing the arguments, the extent to which they felt that the position adopted represented the writers' true attitudes, or the amount of effort the writers individually put into researching and writing the arguments. Overall, participants felt that 49% of their classmates would support the proposal and that there were 5.1 good arguments.

Discussion

These findings are consistent with the notion that the lack of independence in judgmental perspective accounts, at least in part, for the finding that the committee manipulation eliminates the multiple source effect. A committee composed of members with diverse perspectives was just as persuasive as independent sources.⁵

These findings are inconsistent with the notion that simply identifying a set of sources as a *committee* (an entity) would be sufficient to eliminate the persuasive advantage of multiple sources. People must also assume the committee members share a common perspective. Analysis of the ancillary measures also fails to provide support for other possibilities. For example, participants did not differ by condition in the extent to which they felt that the views expressed were the sources' true attitude positions. Thus, it does not appear that the participants inferred that on committees, reluctant members may be chivied into line, and thus, the views they express may not be their true ones. Nor does it appear that participants felt that the sources on committees put less effort into researching and writing the arguments, as might be expected in a situation where responsibility is shared (Latané, Williams, & Harkins, 1979; Petty et al., 1980).

General Discussion

The present research has provided additional support for our view that increasing the number of sources who present a per-

suasive message can affect agreement by enhancing elaboration of the issue-relevant arguments provided (Harkins & Petty, 1983). In three studies, subjects were more persuaded when strong arguments were presented by multiple sources than when the same strong arguments were presented by a single source. Importantly, this effect occurred even though both sets of subjects made the same inferences about the number of people overall who supported the position and the number of reasonable arguments that existed in support of the advocacy. This result, along with our previous research (cf. Harkins & Petty, 1981a, 1981b) suggests that the multiple source effect is not due to simple source or argument cues enhancing persuasion in the absence of issue-relevant thinking. Although recent research clearly indicates that simple source (e.g., Chaiken, 1980; Petty, Cacioppo, & Goldman, 1981) and message (e.g. Petty & Cacioppo, 1984; Wood, Kallgren, & Priesler, 1985) cues are capable of affecting agreement, these effects are most likely when people lack the requisite motivation or ability, or both, to process the issue-relevant arguments (Eagly & Chaiken, 1984; Petty & Cacioppo, 1981, 1986a, 1986b).

The present research goes beyond replicating our previous finding that multiple sources can affect persuasion by affecting argument processing, and it begins to address the question of why multiple sources increase the motivation to think about an issue. The three studies reported here are most congruent with the view that increasing the number of sources presenting arguments increases peoples' motivation to process the arguments because of the greater potential utility in doing so. Information from one source presents only one perspective based on only one person's knowledge. However, information from multiple sources is based on independent pools of knowledge and is likely to represent multiple perspectives. Given the large number of cognitive tasks that people confront daily and given peoples' limited cognitive resources, choices must be made about which stimuli deserve careful scrutiny and which are less worthy of thought. If arguments from multiple sources are perceived as representing independent perspectives on an issue, then this information is more worthy of diligent consideration than information from only one perspective. Consistent with this view, the persuasive advantage of multiple sources was eliminated in Experiment 1 when the multiple sources were described as belonging to a committee. Importantly, in Experiment 2, we observed that it was essential for message recipients to learn that the multiple sources were part of a committee *before* message exposure if this knowledge was to eliminate the persuasive advantage of multiple sources. This result, of course, is consistent

⁵ As in Experiments 1 and 2, covariance analyses were performed on these data. Using the favorability thought index as the covariate produced a large reduction in the magnitude of the attitude effect: from, $F(2, 47) = 13.70$, $p < .01$, to, $F(2, 46) = 6.68$, $p < .01$. The magnitude of the thought effect was also reduced, but still reliable, $F(2, 46) = 4.21$, $p < .05$. Although both effects remained reliable, it was the case that the attitude effect was reduced by one half when thoughts were covaried, whereas the thought effect was reduced by one third when attitudes were covaried. Although these covariance analyses were not as definitive as those in Experiments 1 and 2 (see Footnotes 3 and 4), the overall results were more consistent with the view that thoughts mediated attitudes, rather than the reverse.

with our view that the committee manipulation reduces message processing. When the sources have formed a committee, they become more similar to a single source in that single sources and committees may represent more limited perspectives than do multiple independent sources. Finally, in Experiment 3, we saw that if subjects were led to believe that the committee members represented very different perspectives, then no reduction in processing occurred as a result of the sources belonging to an identifiable group. Again, this study supports the view that the power of multiple sources lies in their perceived informational independence.

In addition to addressing the empirical and theoretical questions of when and why multiple sources affect persuasion, there are a number of quite practical implications of this research. For example, in a criminal trial, a defense attorney may have to decide how many character witnesses to call to support the defendant. The multiple source effect indicates that it would be better to have three people present three positive traits about the defendant than to have one person present all three traits. However, the present research emphasizes the importance of having the jurors view the multiple witnesses as independent sources of information rather than having them all labeled as part of the "defense team" or as belonging to the defendant's family or group of friends. To the extent that the multiple sources are viewed as nonindependent or as representing very similar perspectives, they may be no more effective than a single source presenting the same information.

References

- Cacioppo, J., Harkins, S., & Petty, R. (1981). The nature of attitudes and cognitive responses and their relationships to behavior. In R. Petty, T. Ostrom, & T. Brock (Eds.), *Cognitive responses in persuasion* (pp. 31-54). Hillsdale, NJ: Erlbaum.
- Cacioppo, J., & Petty, R. (1985). Central and peripheral routes to persuasion: The role of message repetition. In A. Mitchell & L. Alwitt (Eds.), *Psychological processes and advertising effects* (pp. 91-111). Hillsdale, NJ: Erlbaum.
- Calder, B., Insko, C., & Yandell, B. (1974). The relation of cognitive and memorial processes to persuasion in a simulated jury trial. *Journal of Applied Social Psychology, 4*, 62-93.
- Chaiken, S. (1980). Heuristic versus systematic information processing and the use of source versus message cues in persuasion. *Journal of Personality and Social Psychology, 39*, 752-756.
- Eagly, A., & Chaiken, S. (1984). Cognitive theories of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 17, pp. 267-359). New York: Academic Press.
- Goethals, G., & Nelson, E. (1973). Similarity in the influence process: The belief-value distinction. *Journal of Personality and Social Psychology, 25*, 117-122.
- Gruder, C., Cook, T., Hennigan, K., Flay, B., Alessis, C., & Halamaj, J. (1978). Empirical tests of the absolute sleeper effect predicted from the discounting cue hypothesis. *Journal of Personality and Social Psychology, 36*, 1061-1074.
- Harkins, S., & Petty, R. (1981a). The effects of source magnification of cognitive effort on attitudes: An information-processing view. *Journal of Personality and Social Psychology, 40*, 401-413.
- Harkins, S., & Petty, R. (1981b). The multiple source effect in persuasion: The effects of distraction. *Personality and Social Psychology Bulletin, 7*, 627-635.
- Harkins, S., & Petty, R. (1983). Social context effects in persuasion: The effects of multiple sources and multiple targets. In P. Paulus (Ed.), *Basic group process* (pp. 149-175). New York: Springer-Verlag.
- Hovland, C., Lumsdaine, A., & Sheffield, F. (1949). *Experiments on mass communication*. Princeton, NJ: Princeton University Press.
- Hovland, C., & Weiss, W. (1951). The influence of source credibility on communication effectiveness. *Public Opinion Quarterly, 15*, 635-650.
- Insko, C., Turnbull, W., & Yandell, B. (1974). Facilitating and inhibiting effects of distraction on attitude change. *Sociometry, 37*, 508-528.
- Kirk, R. (1982). *Experimental design*. Belmont, CA: Wadsworth.
- Krech, D., Crutchfield, R., & Ballachey, E. (1962). *Individual in society*. New York: McGraw-Hill.
- Latané, B., Williams, K., & Harkins, S. (1979). Many hands make light the work: The causes and consequences of social loafing. *Journal of Personality and Social Psychology, 37*, 822-832.
- Petty, R., & Cacioppo, J. (1981). *Attitudes and persuasion: Classic and contemporary approaches*. Dubuque, IA: Wm. C. Brown.
- Petty, R., & Cacioppo, J. (1984). The effects of involvement on responses to argument quantity and quality: Central and peripheral routes to persuasion. *Journal of Personality and Social Psychology, 46*, 69-81.
- Petty, R., & Cacioppo, J. (1986a). *Communication and persuasion: Central and peripheral routes to attitude change*. New York: Springer-Verlag.
- Petty, R., & Cacioppo, J. (1986b). The elaboration likelihood model of persuasion. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 19, pp. 123-205). New York: Academic Press.
- Petty, R., Cacioppo, J., & Goldman, R. (1981). Personal involvement as a determinant of argument-based persuasion. *Journal of Personality and Social Psychology, 41*, 847-855.
- Petty, R., Harkins, S., & Williams, K. (1980). The effects of group diffusion of cognitive effort on attitudes: An information-processing view. *Journal of Personality and Social Psychology, 38*, 81-92.
- Pratkanis, A., & Greenwald, A. (1985). A reliable sleeper effect in persuasion: Implications for opinion change theory and research. In L. Alwitt & A. Mitchell (Eds.), *Psychological processes and advertising effects* (pp. 157-173). Hillsdale, NJ: Erlbaum.
- Reckman, R., & Goethals, G. (1973). Deviancy and group orientation as determinants of group composition preferences. *Sociometry, 36*, 419-423.
- Wilder, D. (1977). Perception of groups, size of opposition, and social influence. *Journal of Experimental Social Psychology, 13*, 253-268.
- Wood, W., Kallgren, C., & Priesler, R. (1985). Access to attitude relevant information in memory as a determinant of persuasion. *Journal of Experimental Social Psychology, 21*, 73-85.

Received August 22, 1985

Revision received June 23, 1986 ■