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# Communication and Group Perception: Extending the ‘Saying is Believing’ Effect

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The saying-is-believing (SIB) effect occurs when tailoring a message to suit an audience influences a communicator’s subsequent memories and impressions about the communication topic. Previous studies were restricted to one-person audiences and individuals as the communication topic. The present studies explored the SIB effect with multiple-person audiences and groups as the communication topic. In Study 1, the SIB effect occurred with a 1-person, but not a 3-person, audience. In Study 2, the SIB effect occurred with a 3-person audience when the audience explicitly validated communicators’ messages. These findings demonstrate the generalizability of the SIB effect to group contexts, provide further evidence for a shared reality interpretation of this effect, and suggest a potentially important mechanism underlying stereotype development.

**KEYWORDS** communication, group perception, saying is believing, shared reality, stereotype development

THE saying-is-believing (SIB) effect occurs when a message tailored to a particular audience influences a communicator’s subsequent memory and impression of the message topic. In a typical SIB study (Higgins & McCann, 1984; Higgins & Rholes, 1978), a participant is given information about a target person (e.g. Donald) and instructed to describe Donald to another person (the audience) who ostensibly either likes or dislikes him. The audience’s task is to identify Donald from among a number of people whom the audience knows.

One important finding in SIB studies is that participants communicate messages that are consistent with their audience’s opinion. That is, participants communicating to an audience

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who likes Donald convey a more positive impression of him than do those communicating to an audience who dislikes Donald. Such *audience tuning* (Higgins, 1992; cf., Zajonc, 1960) is consistent with substantial research showing that communicators take their audience's perspective into account when designing messages (Clark & Marshall, 1981; Clark & Schaefer, 1989; Fussell & Krauss, 1989; Grice, 1975; Rommetveit, 1976). More intriguing is the effect of audience tuning on communicators' memories and impressions of Donald. Participants communicating to an audience who likes Donald typically have more favorable memories and impressions of him than do those communicating to an audience who dislikes Donald. Importantly, the effect of the audience's opinion on communicators' subsequent memories and impressions depends on the content of their messages. These memories and impressions are distorted in the direction of the audience's opinion only to the extent that communicators tuned their original message to that opinion.

The SIB effect, which has been replicated many times (Echterhoff, Higgins, & Groll, 2005; Echterhoff, Higgins, Kopietz, & Groll, 2008; Higgins & McCann, 1984; Higgins & Rholes, 1978; McCann, Higgins, & Fondacaro, 1991; Sedikides, 1990), provides a powerful demonstration of how communicating to a one-person audience affects memories and impressions of a target person. But does the SIB effect also operate in group contexts? That is, do communicators show the SIB effect after sending messages to audiences composed of several people rather than a single person? Moreover, do communicators show the SIB effect when the target of their communication is a group rather than an individual? These questions are investigated in the present studies.

### Communicating to a group

The prevailing explanation of the SIB effect in studies using one-person audiences is based on the notion of shared reality (Echterhoff et al., 2005).<sup>1</sup> According to the shared reality perspective, obtaining social support for one's subjective

experiences provides validity for those experiences (Hardin & Higgins, 1996; Higgins, 1992; Levine & Higgins, 2001). The shared reality perspective provides an explanation for the SIB effect by suggesting that communicators obtain social validation for their messages when those messages are shared with an audience. This validation causes communicators to view their messages as unbiased information about the target, even though the messages were in fact biased through audience tuning. Therefore, when communicators recall the original target information or report their impressions of the target, they rely on their messages more than on the original information. This results in the audience's opinion having an indirect effect on communicators' memories and impressions, an effect that is mediated by the content of their messages. That is, the audience's opinion affects communicators' messages, which in turn shape their memories and impressions about the target.

Given that all previous research on the SIB effect has utilized a single-person audience, it is not known whether the same audience tuning and cognitive distortions would occur if communicators sent messages to larger audiences. One hypothesis, based on the shared reality perspective, is that the SIB effect will be as strong, or even stronger, in this case. As explained earlier, the crucial feature of the shared reality account of the SIB effect is that the audience validates the communicator's message. Recent evidence indicates that when a one-person audience fails to provide such validation, the SIB effect does not occur (Echterhoff et al., 2005). If participants communicating with a multiple-person audience perceive that their message is validated, then the SIB effect should occur in that situation as well. In fact, it may be even stronger than in the one-person audience case, because validation from several people is likely to provide more subjective support than is validation from a single person. This may occur because a view advocated by several people is less likely to be attributed to a personal idiosyncrasy or bias than is a view advocated by a single person, which in turn should lend it greater weight (cf. Goethals & Darley, 1977). Evidence that people believe

there is a high degree of social consensus for their opinions (Krueger, 1998; Ross, Greene, & House, 1977) also suggests that the subjective support provided by others' agreement depends, at least in part, on how many others are involved (cf. Gerard & Orive, 1987). Finally, the notion that shared reality is developed and maintained in group contexts is consistent with a broad range of work on such diverse phenomena as social identity and self-categorization (Hogg & Abrams, 1988; Tajfel & Turner, 1979), group decision making (Davis, 1973; Stasser & Titus, 1985), group beliefs (Bar-Tal, 1990), social representations (Moscovici, 1984), transactive memory (Moreland, 1999), and shared mental models (Mohammed & Dumville, 2001; for reviews, see Levine & Higgins, 2001; Tindale, Meisenhelder, Dykema-Engblade, & Hogg, 2001).

An alternative hypothesis is that increased audience size will cause communicators to adopt the audience's opinion directly, thereby eliminating the SIB effect. This could occur if communicators perceive the opinion of multiple audience members as highly credible and therefore accept the audience's opinion as valid. In cases of such 'informational influence' (Deutsch & Gerard, 1955; see also Wood, 1999), communicators' messages and their memories and impressions of the target would be shaped by the audience's opinion. Importantly, however, the impact of the audience's opinion on memories and impressions would be direct, rather than mediated by communicators' messages. In this case, there is no need for communicators to rely on their messages when thinking about the target, because they can rely directly on the audience's opinion for their information. The first goal of the current research is to test these two competing hypotheses by assessing whether the SIB effect occurs when audience size is increased from one person to three people.

### Communicating about a group

The second goal of the present research is to determine if the SIB effect extends to situations in which the message topic is a group rather than an individual. As noted earlier,

communicators in previous SIB studies always received and transmitted information about a single individual. If the SIB effect can also be shown to occur when communicators receive and transmit information about a group, then the SIB paradigm may become an important tool for studying how group perceptions in general and group stereotypes in particular develop through communication.

Evidence indicating that the SIB effect occurs in group perception would extend a growing body of research on the communication of stereotypes (Kashima, 2000; Lyons & Kashima, 2003; Maass, 1999; Ruscher, 2001; Wigboldus, Semin, & Spears, 2000). It is clear from this research that interpersonal communication is an important means by which stereotypes develop and persist. For example, overhearing another person make racist remarks can enhance a listener's tendency to express racist opinions (Blanchard, Crandall, Brigham, & Vaughn, 1994; Greenberg & Pyszczynski, 1985; Simon & Greenberg, 1996). In addition, discussing a group, particularly with members of a salient ingroup, increases stereotyping (Brauer, Judd, & Jacquelin, 2001; Haslam, Oakes, Reynolds, & Turner, 1999; Haslam et al., 1998; Ruscher, 1998; Sani & Thompson, 2001; Thompson, Judd, & Park, 2000, Study 2). Finally, stereotype consensus is linked to communication in that easily communicated traits are more likely to persist in stereotypes (Schaller, Conway, & Tanchuk, 2002).

Most studies on the communication of stereotypes have focused on how existing stereotypes are discussed by communicators. By contrast, relatively little attention has been given to how someone with no stereotype of a group comes to adopt the stereotype held by a communicative partner. Research on how stereotypes develop through communication using the SIB paradigm is thus timely. This is particularly true because the desire to create or maintain shared reality, which we view as the critical determinant of the SIB effect, has been shown to play an important role in stereotype development and maintenance (Lyons & Kashima, 2003; Ruscher, Hammer, & Hammer, 1996; Sechrist & Stangor, 2001; Stangor, Sechrist, & Jost, 2001; see also Hardin & Higgins, 1996).

## Study 1

### Overview

The goals of Study 1 were to determine whether the SIB effect would occur when: (i) the audience consisted of several people rather than a single person; and (ii) the communication topic was a group rather than an individual. In this study, communicators received information about an unfamiliar target group and then described that group to either a 1-person or 3-person audience that allegedly either liked or disliked the group. After a brief delay, communicators recalled as much as they could about the target group information in a free recall format. They also rated their overall impression of the group on a rating scale and described their impressions of the group in their own words.

### Method

**Participants** Eighty-seven participants (41 females and 46 males) were recruited from the introductory psychology subject pool of a large urban university. Participants were randomly assigned to the four conditions of a 2 (audience opinion: positive vs. negative)  $\times$  2 (audience size: 1 person vs. 3 people) between-subjects experimental design. Participants were run individually and received partial course credit for their participation. Each session took approximately 45 minutes.

**Materials** Information about the target group was patterned closely after that used to describe target individuals in previous SIB studies (Echterhoff et al., 2005b; Higgins & Rholes, 1978; McCann & Hancock, 1983; Sedikides, 1990), but modified so that the characteristics described a group rather than an individual. Four characteristics used in recent studies (Echterhoff et al., 2005a, 2005b) were adapted for use in the current study (see Appendix). Characteristics were designed to be neither clearly negative nor positive. The ambiguous nature of these characteristics was validated in previous research (Sedikides, 1990).

### Procedure

*Introduction and informed consent* Participants were initially informed that the study involved

communication and group perception. They were told that they would read information about a group and then send a message about that group via a computer network to an audience in another room. Next, participants read and signed an informed consent form.

*Cover story* The cover story and procedure were adapted from previous SIB studies to meet the needs of the current study. Participants were told that, as part of a separate study, researchers had videotaped several small groups of friends interacting in various settings. The audience for the current study ostensibly had been watching videotapes of four of these groups before the participant arrived. The participant's task was to read information compiled by the research team about one of the four groups and then send a description of that group to the audience over a computer network. The audience's task was to identify the group the participant described from among the four groups they had watched.

*Audience size manipulation* Several times while describing the task, the experimenter referred to the audience as consisting of either one person or three people. This information was also repeated in written instructions presented to participants prior to beginning the task.

*Audience opinion manipulation* Prior to presenting the target group information to participants, the experimenter introduced the audience opinion manipulation by mentioning that the audience either liked or disliked the target group, referred to as Group B. In the 1-person audience condition, the experimenter said the following:

By the way, since the other participant has watched the videotape of Group B, they have developed their own impression of the group: The ratings that person provided indicate that they [seem to like—don't seem to like] Group B and believe the group [has—doesn't have] many good qualities.

In the 3-person audience condition, the manipulation was presented as follows:

By the way, since the other participants have watched the videotape of Group B, they have each developed

their own impression of the group: The ratings that each of them provided indicate that they all three [seem to like—don't seem to like] Group B and believe the group [has—doesn't have] many good qualities.

*Communication task and follow-up measures* The communication task was presented via a computer program. Instructions tailored to the participants' audience size condition were presented on the first screen of the program. The target description was presented on the second screen. After reading the target description, participants proceeded to the next screen, which prompted them to type and send a message describing the information they had just read about the target group.

Next, participants spent approximately 10 minutes completing a crossword puzzle, which was used to allow the decay of short-term memory for information about the target group. Participants then used the computer to answer questions about the target group. They were told that their responses for the remainder of the experiment would be kept private (i.e. would not be shared with their audience). Participants were asked to recall the original description of the target group and report their impressions of it. For the recall task, participants were instructed to reconstruct the description as best they could, trying to use the exact words and sequence of information. The impressions measure consisted of two components. First, participants were asked to rate their general liking for the group on a rating scale ranging from 1 (*not at all*) to 10 (*very much*). Second, participants were asked to type a few sentences that describe their personal impressions of the group members. The order of completing the recall and impression measures was counterbalanced across participants.

To assess the success of the manipulations, participants were asked to recall how many people were in their audience and whether the audience liked or disliked the target group.<sup>2</sup> Participants were then debriefed and dismissed from the experiment.

## Results

**Manipulation checks** Of the 87 participants, 85 (98%) correctly identified the size of their audience, and 73 (84%) correctly identified their

audience's opinion of the target group. Thus, both manipulations were successful.

**Coding** Two independent coders blind to condition coded the message, recall, and impression passages written by participants. The coders broke down each passage into segments that roughly mapped on to the original target information. Each segment was then coded as containing negative or positive distortion of small, moderate, or extreme magnitude. The distortion ratings for each segment were combined into an overall score for the passage ranging from  $-5$  (*extreme negative distortion*) to  $+5$  (*extreme positive distortion*). Intercoder reliability was acceptable for messages ( $r(87) = .92$ ), recall ( $r(87) = .73$ ), and impressions ( $r(87) = .93$ ), so the ratings from the two coders were averaged. The average message and recall codes served as dependent measures in the analyses. For impressions, the standardized average code and the standardized rating of participants' overall impression of the group were highly correlated ( $r(87) = .71$ ). They were therefore averaged, and this combined score served as the measure of impressions in the analyses.

**Audience tuning** The extent to which participants tailored their messages to their audience's opinion was assessed by conducting a 2 (audience opinion)  $\times$  2 (audience size) between-subjects analysis of variance (ANOVA) with message valence as the dependent variable.<sup>3</sup> This analysis revealed a main effect of audience opinion, such that messages written for positive audiences ( $M = .81$ ,  $SD = 1.23$ ) were more positive than messages written for negative audiences ( $M = -.53$ ,  $SD = 1.55$ ),  $F(1, 83) = 19.78$ ,  $p < .001$ ,  $\eta^2 = .19$ . Neither the main effect of audience size nor the interaction was significant,  $F$  values  $< 1.11$ ,  $p$  values  $> .29$ . These results indicate that audience tuning occurred and was similar in magnitude for 1- and 3-person audiences.

**Recall and impressions** A 2 (audience opinion)  $\times$  2 (audience size) between-subjects ANOVA with recall valence as the dependent variable was conducted to assess whether the extent of recall bias varied by audience opinion and size. There was a significant main effect

of audience opinion on recall, such that participants who communicated to a positive audience had more positive recall of the target group ( $M = .68, SD = .76$ ) than did those who communicated to a negative audience ( $M = .16, SD = .66$ ),  $F(1, 82) = 11.94, p < .01, \eta^2 = .13$ . There was also a main effect of audience size, such that participants who communicated to a 1-person audience had more positive recall ( $M = .58, SD = .87$ ) than did those who communicated to a 3-person audience ( $M = .24, SD = .58$ ),  $F(1, 82) = 5.01, p < .05, \eta^2 = .06$ . The interaction between audience opinion and size was not significant,  $F < 1$ , indicating that the extent of recall bias in the direction of the audience's opinion was similar across 1- and 3-person audiences.

The same analysis was repeated with impressions as the dependent variable. There was a significant main effect of audience opinion on impressions, such that participants who communicated to a positive audience had more positive impressions of the target group ( $M = .40, SD = .85$ ) than did those who communicated to a negative audience ( $M = -.44, SD = .78$ ),  $F(1, 83) = 22.83, p < .001, \eta^2 = .22$ . Neither the main effect of audience size nor the interaction was significant,  $F$  values  $< 1.31$ ,  $p$  values  $> .25$ . As with the results for recall, the extent to which impressions were biased in the direction of the audience's opinion was similar across 1- and 3-person audiences.

The earlier analyses on valence of recall and impressions do not shed light on whether the SIB effect occurred in the 1- and 3-person audience conditions. Rather, it is necessary to conduct path analyses to identify whether message valence mediated the relationship between audience opinion and communicators' subsequent cognitions (i.e. recall and impressions) about the group within each audience size condition. Path analyses for 1- and 3-person audiences were therefore examined separately, as is typically done in studies examining moderators of the SIB effect (Higgins & McCann, 1984; McCann & Hancock, 1983; Todorov, 2002).

*1-person audience* Whether the SIB effect occurred in the 1-person audience condition, as

it did in prior studies using an individual, rather than a group as the target, was examined first. The SIB effect exists when the relationships between the audience's opinion and communicators' subsequent cognitions about the target (i.e. recall and impressions) are mediated by the valence of communicators' messages to the audience.

Kenny, Kashy, and Bolger (1998) outlined four steps to test mediation. These are: (i) demonstrating a significant relationship between the independent variable (audience's opinion) and the dependent variable (recall or impression), (ii) demonstrating that the independent variable significantly predicts the mediator (message valence), (iii) demonstrating that the mediator significantly predicts the dependent variable when controlling for the independent variable, and (4) demonstrating that the relationship between the independent and dependent variables is eliminated when controlling for the mediator. They noted, however, that step 4 is only necessary when full mediation is predicted. If partial mediation is present, the relationship between the independent and dependent variables could be reduced, but still remain significant. Partial mediation is sufficient to demonstrate the SIB effect, which predicts only that controlling for message valence substantially reduces the relationship between audience opinion and communicators' subsequent cognitions. In addition, Kenny et al. (1998) argued that step 1 is not required for mediation to be present. Consistent with recent developments in methods for testing mediation (see Collins, Graham, & Flaherty, 1998; Shrout & Bolger, 2002), Kenny et al. (1998) asserted that, 'Step 1 is not required, but a path from the initial variable to the outcome is implied if Steps 2 and 3 are met. So the essential steps in establishing mediation are Steps 2 and 3' (p. 260). Therefore, in the current research, all four steps are conducted, but emphasis is placed on steps 2 and 3, in line with Kenny et al.'s recommendations.

In the 1-person audience condition, the direct effect of audience opinion on recall (step 1) was marginally significant,  $\beta = .29, t(41) = 1.92, p = .06$ , and the effect of audience opinion on message (step 2) was significant,  $\beta = .34,$

$t(41) = 2.30, p < .05$  (see Figure 1). Furthermore, in a regression analysis in which both message and audience opinion were included as predictors of recall, message was significant (step 3),  $\beta = .43, t(40) = 2.94, p < .01$ , whereas audience opinion was not (step 4),  $\beta = .14, t(40) = .98, ns$ . A Sobel test (Sobel, 1982) examining whether controlling for message significantly reduced the relationship between audience opinion and recall was marginally significant,  $Z = 1.81, p < .07$ . These results pro-

vide some evidence that the SIB effect occurred for recall with a 1-person audience using a group as the message topic, thus replicating the previous literature while extending it to a group as the target of communication instead of an individual.

Stronger evidence was obtained for the SIB effect for impressions (see Figure 1). The effect of audience opinion on impressions was significant,  $\beta = .40, t(41) = 2.82, p < .01$ , as was the effect of audience opinion on message (noted

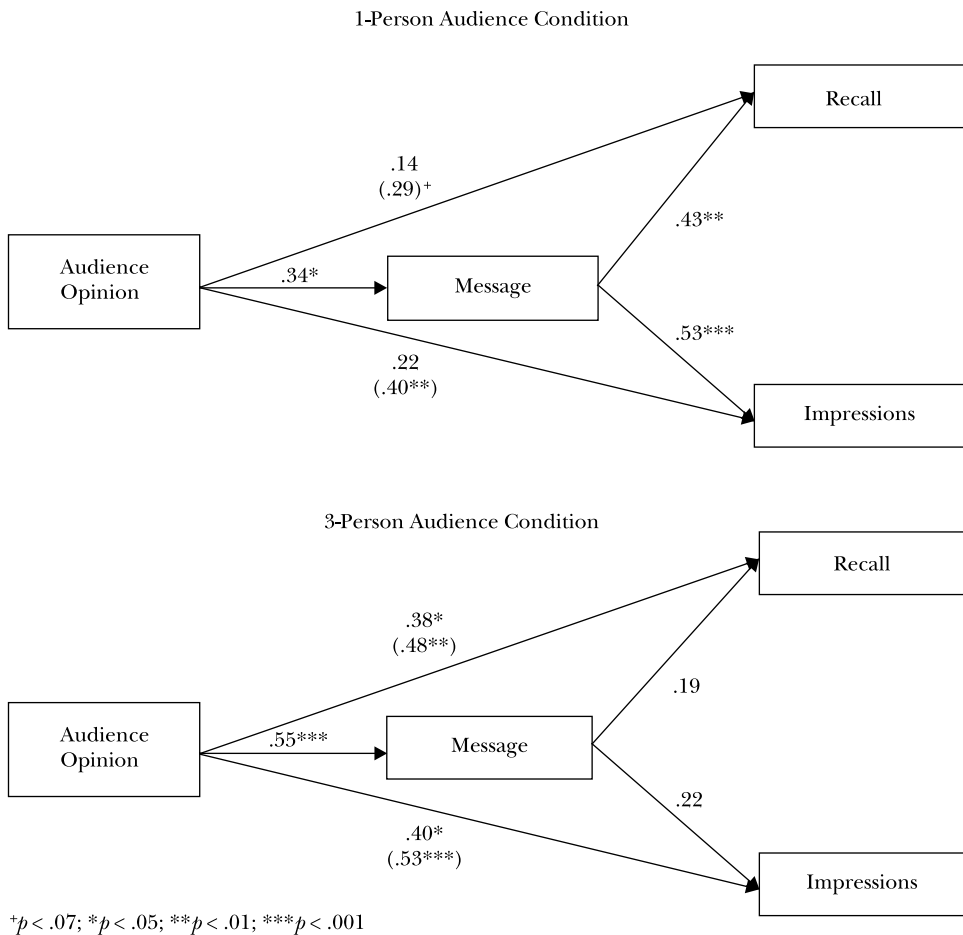


Figure 1. Standardized beta coefficients for path analyses in 1- and 3-person audience conditions. Direct effects of audience opinion on recall and impressions, not controlling for the effect of message, are given in parentheses. Effects of message on recall and impressions are controlling for audience opinion. Paths for recall and impressions were estimated in separate analyses.



earlier). In a regression analysis in which both message and audience opinion were included as predictors of impressions, message significantly predicted impressions,  $\beta = .53$ ,  $t(40) = 4.12$ ,  $p < .001$ , but audience opinion did not,  $\beta = .22$ ,  $t(40) = 1.74$ , *ns*. A Sobel test revealed that controlling for message significantly reduced the relationship between audience opinion and impressions,  $Z = 2.33$ ,  $p < .05$ . The SIB effect was therefore obtained in the 1-person condition for impressions as well as recall, again replicating the previous literature while extending it to a group as the target of communication instead of an individual.

*3-person audience* Mediation analyses were also performed in the 3-person audience condition (see Figure 1). The effect of audience opinion on recall (step 1) was significant,  $\beta = .48$ ,  $t(41) = 3.46$ ,  $p < .01$ , as was the effect of audience opinion on message (step 2),  $\beta = .55$ ,  $t(42) = 4.25$ ,  $p < .001$ . However, when both message and audience opinion were included as predictors of recall, message was *not* a significant predictor of recall (step 3),  $\beta = .19$ ,  $t(40) = 1.16$ , *ns*, while audience opinion remained a strong predictor (step 4),  $\beta = .38$ ,  $t(40) = 2.32$ ,  $p < .05$ . Given that message did not predict recall when audience opinion was controlled, the conditions of mediation set forth by Kenny et al. (1998) were not met. Therefore, the SIB effect was not obtained for recall in the 3-person audience condition. Instead, the audience's opinion *directly* affected communicators' subsequent memories without mediation by message valence.

The results for impressions mirrored the recall results (see Figure 1). Specifically, even though audience opinion predicted impressions,  $\beta = .53$ ,  $t(42) = 3.99$ ,  $p < .001$ , and message (noted earlier), message did not predict impressions while controlling for audience opinion,  $\beta = .22$ ,  $t(41) = 1.44$ , *ns*. Furthermore, the effect of audience opinion on impressions remained strong, even after controlling for message,  $\beta = .40$ ,  $t(41) = 2.59$ ,  $p < .05$ . Thus, once again, the audience's opinion *directly* affected communicators' subsequent impressions without mediation by message valence.

## Discussion

One goal of Study 1 was to determine whether the SIB effect would occur when the topic of communication was a group rather than an individual. Such an effect was indeed obtained in the 1-person audience condition, demonstrating that communicators' tendency to tune their message to their audience's attitude can influence their memories and impressions of unfamiliar groups with ambiguous (i.e. neither strongly positive nor negative) characteristics. This finding suggests a new and potentially important mechanism by which people develop stereotypes of groups. Some implications of this discovery are discussed later.

Another goal of Study 1 was to determine whether the SIB effect would occur when the audience consisted of several people rather than a single individual. In contrast to the 1-person audience condition, we did not obtain the SIB effect in the 3-person audience condition. In the 3-person audience condition, communicators' messages did not mediate the relationship between the audience's attitude, on the one hand, and communicators' recall and impressions, on the other hand. Instead, there was a direct effect of audience attitude on communicators' recall and impressions. These findings are consistent with the possibility, discussed earlier, that communicators might perceive the opinion of multiple audience members as highly credible (i.e. high in epistemic authority) and therefore accept the audience's opinion as valid, thereby reducing their reliance on their audience-tuned messages as a source of information about the communication target. These findings represent another potential contribution to the literature on the SIB effect, in that they raise the possibility that this effect is sensitive to audience size given that unanimous groups are likely to have greater epistemic authority than a single individual.

These results are intriguing and raise the question of whether there are any conditions under which the SIB effect might occur with multiple-member audiences. Recent research testing implications of the shared reality interpretation of the SIB effect with 1-person audiences

suggests a factor that may influence the strength of this effect with multiple-person audiences as well. Echterhoff et al. (2005) found that communicators' belief about the success of their message in creating shared reality with their audience was an important determinant of the SIB effect. Specifically, Echterhoff et al. manipulated message success by providing communicators with feedback indicating that the audience either did or did not correctly identify the person described in communicators' messages. In this study, the SIB effect was eliminated in the failure feedback condition.

The default assumption with a 1-person audience (unless explicitly disconfirmed) is that the communicator's message was in fact understood by the audience (i.e. a success) and hence the communicator and audience achieved shared reality about the topic (Echterhoff et al., 2005). This might not be true for many 3-person audiences, however. Indeed in Study 1, 30% of participants (13 of 44) in the 3-person audience condition indicated that they did *not* believe all members of the audience correctly identified the target group. This contrasts with only 7% of participants (3 of 43) in the 1-person audience condition who did not believe the audience correctly identified the target group,  $\chi^2(1, N = 87) = 7.38, p < .01$ . It is possible, then, that uncertainty about successful establishment of shared reality with the audience contributed to the absence of the SIB effect in the 3-person audience condition of Study 1.

To examine this possibility, we explored whether the SIB effect was stronger for participants who believed that the entire audience correctly identified the target group than for participants who did not hold this belief. Specifically, we conducted two regression analyses testing whether the interaction between message valence and belief in audience correctness predicted recall and impressions. Each regression model also contained the main effects of audience opinion, audience size, belief in audience correctness, and message valence. The interaction between belief in audience correctness and message valence significantly predicted recall ( $t(80) = 2.26, p < .05$ ), indicating that the effect of message valence on recall was indeed greater for those

who believed the entire audience correctly identified the target group than for those who did not hold this belief. A similar pattern was observed for impressions, although the interaction term did not reach significance,  $t(81) = 1.40, p = .16$ .

Consistent with prior work (Echterhoff et al., 2005), this analysis suggests that communicators must believe that audience members correctly identified the target group on the basis of their message in order for the SIB effect to occur. The purpose of Study 2 was to test the hypothesis that the SIB effect will occur with a 3-person audience as long as communicators are assured that all members of the audience correctly identified the target group. If uncertainty about the establishment of a shared reality with the audience was the key reason why the SIB effect did not occur in the 3-person audience condition of Study 1, then the SIB effect should emerge in the 3-person audience condition of Study 2, where all communicators were told their message was understood by all members of the audience.

## Study 2

### Method

**Participants** Ninety-four participants (72 females and 22 males) were recruited from the introductory psychology subject pool of a large urban university. Participants were run individually and received partial course credit for participating. Each session took approximately 45 minutes.

**Procedure** The procedure for Study 2 was identical to that used in Study 1 except for the following modifications. First, all audiences were portrayed as consisting of three people. Second, participants were informed that the audience correctly identified the group that participants described in their message. This information was provided after the filler task, before participants' memories and impressions of the target group were assessed. Third, the manipulation check for audience opinion asked participants to rate the extent to which the audience liked or disliked the target group on a scale of 1 (*disliked very much*) to 7 (*liked very much*).<sup>4</sup>

**Results**

**Manipulation check** Positive audiences ( $M = 5.68, SD = 1.05$ ) received higher liking ratings for the target group than did negative audiences ( $M = 2.55, SD = 1.04$ ),  $t(92) = 14.56, p < .001, \eta^2 = .70$ . The audience opinion manipulation was thus successful.

**Coding** Measures of message, recall, and impression valence were created using the procedure from Study 1. Intercoder reliability was acceptable for each measure: messages,  $r(94) = .88$ ; recall,  $r(94) = .74$ ; and impressions,  $r(94) = .93$ .<sup>5</sup>

**Audience tuning** Degree of audience tuning across conditions was assessed by conducting an independent samples *t* test comparing message valence for positive and negative audience opinion conditions. As in Study 1, messages written for positive audiences ( $M = .84, SD = 1.44$ ) were more positive than messages written for negative audiences ( $M = -.49, SD = 1.45$ ),  $t(92) = 4.46, p < .001, \eta^2 = .18$ . Audience tuning therefore occurred in Study 2.

**Testing for the SIB effect** Preliminary analyses were conducted on recall and impression scores to determine whether they varied by audience

opinion condition. Results indicated that participants who communicated to a positive audience had more positive recall of the target group ( $M = .37, SD = .75$ ) than did those who communicated to a negative audience ( $M = .03, SD = .79$ ),  $t(92) = 2.15, p < .05, \eta^2 = .05$ . In addition, participants who communicated to a positive audience had more positive impressions ( $M = .50, SD = .75$ ) than did those who communicated to a negative audience ( $M = -.50, SD = .86$ ),  $t(92) = 5.99, p < .001, \eta^2 = .28$ .

As in Study 1, path analyses were conducted on recall and impression scores to test for the presence of the SIB effect. Whether the SIB effect occurred for recall was assessed first (see Figure 2). The effect of audience opinion on recall (step 1) was significant,  $\beta = .22, t(92) = 2.15, p < .05$ , as was the effect of audience opinion on message (step 2),  $\beta = .42, t(92) = 4.46, p < .001$ . Furthermore, the effect of message on recall when controlling for audience opinion was significant (step 3),  $\beta = .38, t(91) = 3.59, p < .01$ . Finally, when controlling for message, the effect of audience opinion on recall was no longer significant,  $\beta = .06, t(91) = .55, ns$ . According to the Sobel test, the effect of audience opinion on recall was significantly reduced when controlling for message,  $Z = 2.80, p < .01$ . Thus, with the addition of the success feedback, the SIB

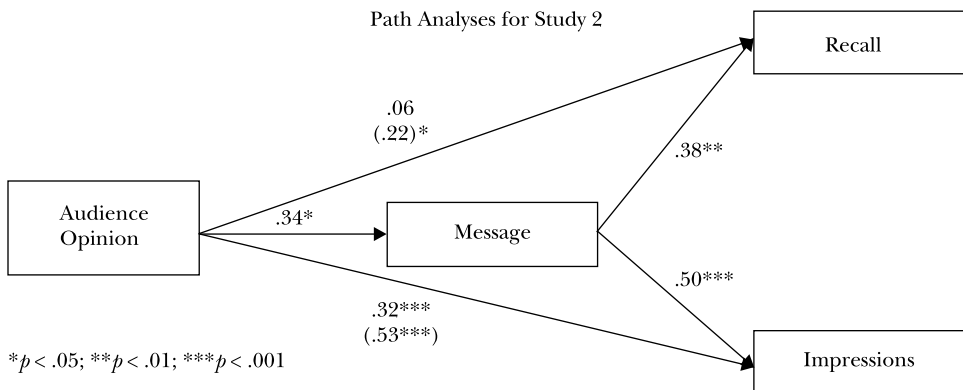


Figure 2. Standardized beta coefficients for path analyses in study 2. Direct effects of audience opinion on recall and impressions, not controlling for the effect of message, are given in parentheses. Effects of message on recall and impressions are controlling for audience opinion. Paths for recall and impressions were estimated in separate analyses.

effect was present for recall with a 3-person audience. This finding replicates the previous literature while extending the SIB effect to a group rather than an individual as the audience of the communication.

Parallel analyses were conducted for impressions (see Figure 2). First, there was a significant effect of audience opinion on impressions,  $\beta = .53$ ,  $t(92) = 5.99$ ,  $p < .001$ , and on message, as noted earlier. Furthermore, when both messages and audience opinion were included as predictors of impressions, each was significant: for messages,  $\beta = .50$ ,  $t(91) = 5.96$ ,  $p < .001$ ; for audience opinion,  $\beta = .32$ ,  $t(91) = 3.85$ ,  $p < .001$ . Because the effect of audience opinion on impressions remained significant when controlling for message, the criteria for full mediation were not met. However, a Sobel test revealed that the relationship between audience opinion and impressions was significantly reduced when controlling for message, indicating that message partially mediated the relationship,  $Z = 3.56$ ,  $p < .001$ . Thus, as in the case of recall, the SIB effect was also present for impressions with the 3-person audience. This finding, once again, replicates the previous literature while extending the SIB effect to a group rather than an individual as the audience of the communication.

### Discussion

The goal of Study 2 was to test the hypothesis that uncertainty regarding the establishment of shared reality with the audience may have contributed to the absence of the SIB effect in the 3-person audience condition of Study 1. If so, then explicitly informing communicators that all members of a 3-person audience understood their message should result in the re-emergence of the SIB effect. Consistent with this reasoning, when communicators received explicit feedback that all members of the audience understood their message in Study 2, the SIB effect was obtained for both recall and impressions. These findings demonstrate that a strong SIB effect *can* occur when communicators transmit messages to audiences of more than one person, as long as they receive explicit confirmation that the audience understood their message. Thus, when communicating to audiences of more than

one person, communicators do rely on their audience-tuned messages in thinking about the target if they believe that their messages were understood by the entire audience. These results are consistent with a shared reality interpretation of the SIB effect (Echterhoff et al., 2005; Higgins, 1999). In addition, Study 2 replicated Study 1 by demonstrating that the SIB effect can occur when the target of communication is a group rather than an individual.

### General discussion

The SIB effect occurs when tuning a message to suit an audience influences a communicator's subsequent memories and impressions about the communication topic (Higgins & Rholes, 1978). The present research was designed to explore whether the SIB effect would occur under two previously unexplored conditions: when the audience consisted of more than one person and when the topic of communication was a group.

In Study 1, consistent with prior studies, we obtained the SIB effect when communicators sent messages to an audience of one person. By contrast, this effect did not occur when communicators sent messages to an audience of three people. In the latter condition, the audience's opinion had a direct effect on communicators' memories and impressions of the communication target, indicating that communicators relied on the information provided by the audience's opinion rather than on the informational value of their own audience-tuned message. Almost one-third of the communicators in the 3-person audience condition expressed doubt that all members of the audience understood their message, which may have contributed to their failure to rely on their audience-tuned messages when later thinking about the target group.

In Study 2, we examined whether providing communicators with explicit feedback that all members of a 3-person audience understood their messages would lead them to rely on these messages when thinking about the target group, thereby producing the SIB effect. In contrast to Study 1, we obtained the SIB effect for both recall and impressions, providing yet more

support for a shared reality interpretation of the SIB effect.

The current research adapted basic features of the standard SIB paradigm to investigate the role of shared reality in producing the SIB effect when both the audience and communication target were groups rather than individuals. Although this paradigm has much to recommend it, there are potential benefits to studying the SIB effect using other methodologies. For example, as is typical in SIB research, communicators in the current studies were presented with a brief summary of the target's characteristics and then were asked to engage in one-way communication about those characteristics with an audience about whom they knew very little. It would be interesting to explore whether the SIB effect also occurs in richer communication environments, such as those in which communicators learn about a target first hand and then engage in two-way communication with audience members. In addition to exploring the SIB effect in richer communication environments, it might be profitable to examine additional audience characteristics that influence the strength of the SIB effect. For example, the SIB effect may be reduced or even eliminated if the audience's opinion about the target group is perceived as insincere (e.g. due to the audience's motivation to present itself as more favorable toward the target than it really is), and this reduction or elimination of the SIB effect may occur regardless of the size of the audience.

Our finding that the SIB effect can occur when the topic of communication is a group rather than an individual suggests a potentially powerful mechanism by which communication within a group can create or consolidate stereotypes about outgroups. Specifically, group members' knowledge that others within the group hold a stereotype about an outgroup may cause them to tune their communications about that group to their audience's position, which (at least under certain conditions) will produce the SIB effect. This, in turn, may cause the communicators either to adopt the stereotype (if they do not initially hold it) or to feel more confident about it (if they do hold it). Over time, this process of mutual tuning and saying-

is-believing may well produce group polarization regarding the stereotype (cf. Brauer et al., 2001; Ruscher, 1998).

An issue for future research is whether information about the target group should include characteristics of the group as a whole, as in the current studies, or characteristics of individual group members. Previous research has shown that people develop different kinds of stereotypes if they learn about individual members as opposed to the group as a whole. Specifically, learning about individual members, as opposed to the overall group, causes the group to be perceived as more variable (i.e. heterogeneous; Park & Hastie, 1987) and less stereotypic (Thompson et al., 2000). It would therefore be interesting to explore whether the SIB effect occurs when communicators have access to individual-level, as opposed to group-level, information. Research examining how people process information about individuals versus groups suggests that people can draw inferences about a group based on knowledge about individual group members, but this is more likely for groups that are higher in entitativity (Hamilton & Sherman, 1996; Hamilton, Sherman, & Lickel, 1998). Varying the entitativity of the target group as well as the type of information communicators have about the group (individual or group level) might thus yield useful information regarding the SIB effect.

Finally, regardless of whether the topic of communication involves an individual or a group, questions remain about the specific elements of social validation that are necessary to elicit the SIB effect. In previous work (Echterhoff et al., 2005) and in the current research, social validation was manipulated by informing communicators that their audience correctly identified the topic of communication based on communicators' messages, implying that the audience understood the information communicators were attempting to transmit. Learning that the information in one's message was successfully transmitted to the audience (i.e. was understood by the audience) is no doubt an important type of social validation. However, a different, and perhaps even more important, type of social validation might occur when an

audience explicitly accepts the content of the message as true. In existing studies of the SIB effect, communicators probably assume that the audience accepts, as well as understands, their message because the message was designed to match the audience's opinion. Thus, our own and other research probably confounds understanding and acceptance of the message as sources of social validation. Understanding the content of a communicator's message, however, does not require an audience to accept the message as true. Similarly, accepting a communicator's message as true does not require an audience to fully understand the message. Disentangling the effects of having one's message understood versus accepted by an audience is therefore important for understanding the conditions under which shared reality develops.

## Notes

1. For a discussion of other possible explanations for the SIB effect (e.g. cognitive dissonance, biased encoding of target information), see Echterhoff et al. (2005a).
2. Additional exploratory measures were collected but are not discussed because they are not germane to this article (see Hausmann, 2005).
3. All analyses were also conducted using gender of participants and the order in which they completed the recall and impression tasks as covariates. Including these covariates did not change the results of Study 1 or 2. Gender and task order are therefore not discussed further.
4. Audience member independence/interdependence was also explored in Study 2. Half the audiences were described as independent (i.e. working alone during the experiment), as had been done in Study 1. The other half were described as interdependent (i.e. watching the videotape of the target group together, discussing the tape, and making a joint decision). Analyses revealed that this manipulation did not affect the outcome variables, and the overall pattern of results was the same for the independent and interdependent audience conditions. Data were therefore collapsed across these conditions, and this variable is not discussed further.
5. As in Study 1, the standardized average code for impressions and the standardized rating of participants' overall impression of the group

were highly correlated ( $r(94) = .80$ ) and were therefore averaged.

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## Appendix

Descriptions used in target essay:

1. Once the members of this group make up their minds to do something it is as good as done no matter how long it might take or how difficult the going might be. Only rarely do they change their minds even when it might be better if they did.
2. The members of this group recently started making attempts to keep up to date with cultural knowledge. They read books about Europe, sat in a music appreciation workshop, and ate in fashion-able ethnic restaurants. In social situations, they often talk at length about foreign cultures and art.
3. In order to improve their lives, these group members try to save money. They use coupons, buy things on sale, and avoid donating money to charity or lending money to friends.
4. A lot of people enjoy this group's humor. The group members are in the habit of making jokes out of the blue. Often times in parties their humor is quick to address the faults that people have or the mistakes that people have made.