DEVELOPING GROUP PERCEPTIONS THROUGH COMMUNICATION: EXTENSIONS OF THE SAYING-IS-BELIEVING EFFECT

by

Leslie R. M. Hausmann

BS, Bowling Green State University, 1999

MS, University of Pittsburgh, 2001

Submitted to the Graduate Faculty of

Arts and Sciences in partial fulfillment

of the requirements for the degree of

Doctor of Philosophy

University of Pittsburgh

2005

UNIVERSITY OF PITTSBURGH

FACULTY OF ARTS AND SCIENCES

This dissertation was presented

by

Leslie R. M. Hausmann

It was defended on

May 27, 2005

and approved by

Larry E. Davis

Martin Greenberg

Janet W. Schofield

John Levine
Dissertation Director

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Leslie R. M. Hausmann, PhD

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When people communicate to an audience about a target, they tune their message to the audience's opinion. Moreover, their memory for and impressions of the target conform to the audience's opinion, and these effects are mediated by the degree of tuning. This "saying-is-believing" (SIB) effect has been explained in terms of communicators developing a shared reality about the target with their audience. The current research extends the SIB effect by (1) demonstrating that the SIB effect occurs when the topic of communication is a group rather than an individual, and (2) exploring the effect of audience size on the SIB effect. In Experiment 1, participants communicated about a target group to audiences consisting of either one person or three people who either liked or disliked the target group. Audience opinion about the target group affected participants' subsequent memories and impressions of the group through different paths, depending on audience size. In the one-person case, the effects of audience opinion on participants' memories and impressions of the target group were mediated by the favorability of participants' messages to the audience (the SIB effect). In contrast, in the three-person case, audience opinion had direct (i.e., unmediated) effects on participants' memories and impressions. The goal of Experiment 2 was to test whether the SIB effect would occur with a three-person audience under conditions designed to maximize emphasis on communicators' own messages and decrease the influence of the audience. When communicators received validation for their message from the three-person audience, the SIB effect occurred for impressions, but not for

memories. When communicators received validation for their message and the three-person audience consisted of an interdependent group rather than three individuals, however, the SIB effect occurred for both memories and impressions. Implications of these findings for a shared reality interpretation of the SIB effect are discussed.

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PREFACE

The successful completion of this research has been facilitated by the contributions of several people, to whom I would like to express my deep appreciation. My primary research advisor, John Levine, has been a tremendous guide throughout the research process. I am also grateful to the members of my committee (Larry E. Davis, Martin Greenberg, and Janet W. Schofield) for offering their thoughtful comments and suggestions regarding my research. I would like to express sincere thanks to E. Tory Higgins and Gerald Echterhoff for providing indispensable advice and theoretical input as I mastered the process of conducting research within the Saying-is-Believing paradigm. I would also like to thank Jessica Girlardo for her assistance with coding the data, and Reid Van Lehn for developing and maintaining the software used in this research.

I owe a special thanks to my family for their endless faith in my ability to succeed and for their encouragement throughout my graduate school career. Saving the best for last, I would like to thank the most important person in my life, Robert Hausmann, to whom I am indebted for his unwavering support of my pursuits in higher education. His boundless curiosity, his dedication to following-up on his curiosity, and his resolve never to stop learning has made him my biggest inspiration.

1. INTRODUCTION

The saying-is-believing (SIB) effect occurs when a message that is tailored to a particular audience influences a communicator's subsequent memory and impression of the topic of the message (Higgins & Rholes, 1978). The purpose of the current research is to extend what is known about this phenomenon in two ways. First, the SIB effect has only been demonstrated using individuals as the communication topic. The topic about which participants communicate in the present research is a group of people, thereby situating the research within the realm of how communication affects the development of stereotypes. Second, the SIB effect has previously been explored only in dyadic communication settings, whereas the current research explores how communicating with a larger audience affects communicators' memories and impressions. Before elaborating on these extensions of the SIB effect, I first review existing research on this phenomenon.

1.1. THE SAYING-IS-BELIEVING EFFECT

In a typical study demonstrating the SIB effect (e.g., Higgins & McCann, 1984; Higgins & Rholes, 1978), a participant is presented with information about a person (e.g., Donald). The participant is 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 robust finding from this research is that participants communicate messages that are consistent with what they believe is their audience's opinion. That is, participants communicating to an audience who likes Donald convey a more positive impression of him than do those who communicate to an audience who dislikes Donald. Such *audience tuning* (Higgins, 1992; cf. Zajonc, 1960) is consistent with copious research showing that communicators take their audience's perspective into account when designing communicative messages (e.g., Clark & Marshall, 1981; Clark & Schaefer, 1989; Fussell & Krauss, 1989; Grice, 1975; Rommetveit, 1976). More intriguing is the effect that audience tuning has on communicators' memories and impressions of the communication topic. In SIB studies, those who communicate to an audience who likes Donald typically have more favorable memories and impressions of him than do those who communicate to an audience who dislikes Donald. Importantly, the effect of the audience's opinion on communicators' subsequent memory and impressions of Donald depends on the content of communicators' messages about Donald. Communicators' memory and impressions of Donald are distorted in the direction of their audience's opinion only to the extent to which they tuned their original message to the opinion of their audience.

The SIB effect has been demonstrated in a number of studies (e.g., Echterhoff, Higgins, & Groll, 2005; Echterhoff, Higgins, & Groll, in press; Higgins & McCann, 1984; Higgins & Rholes, 1978; McCann & Hancock, 1983; McCann, Higgins, & Fondacaro, 1991; Todorov, 2002). It is a powerful effect in that it occurs even when an audience's position conflicts with the valence of person characteristics (e.g., adventurous, stingy) activated prior to message formulation (Sedikides, 1990). That is, when negative or positive person characteristics have

been primed in a communicator, the communicator still tunes his or her message to the audience and develops corresponding cognitions about the target, regardless of whether or not the audience's opinion matches the valence of the primed characteristics.

1.1.1. Shared reality explanation for the SIB effect

The predominant explanation for the SIB effect is based on the notion of shared reality (Hardin & Higgins, 1996), which posits that obtaining social support for one's subjective experiences provides validity for those experiences. Without such validation, one's subjective experiences remain ephemeral, and therefore unreliable, sources of knowledge. The idea that individuals use the views of others to establish meaning in the world is found in the work of philosophers (see Lincourt & Hare, 1973; Shott, 1976), sociologists (e.g., Blumer, 1969; Cooley, 1902; Mead, 1938), and psychologists (e.g., Asch, 1955; Farr & Moscovici, 1984; Festinger, 1954; James, 1890; Moscovici, 1976; Sherif, 1936). Aspects of the shared reality perspective are reminiscent of Festinger's (1954) theory of social comparison. Festinger suggested that people are strongly motivated to evaluate the correctness of their opinions and abilities, and they act on this motivation by seeking physical evidence whenever possible. When physical evidence is unavailable, people seek social evidence about their opinions and abilities by comparing themselves with similar others.

Shared reality differs from social comparison in regard to the importance people presumably place on physical versus social evidence. Social comparison theory places primacy on physical evidence, suggesting that social verification is only useful when physical evidence is unavailable. Shared reality, however, like some other perspectives (e.g., Moscovici, 1976),

rejects this hierarchical dualism of physical and social reality, suggesting instead that all perceptions of reality are socially constructed (see Hardin & Higgins, 1996, for a detailed account of the historical context of the shared reality perspective).

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. From the perspective of communicators, validation from the audience transforms their messages into valid, unbiased information about the target, even though the messages were actually biased through audience tuning. When communicators attempt to recall the original target information or report their impressions of the target, they rely on their messages more than on the original information because the messages have the benefit of being socially validated. According to the shared reality perspective, a communicator's message must be validated by an audience in order for that message to influence a communicator's subsequent cognitions about the target. If communicators fail to gain social validation for their message, their subsequent cognitions about the target should not be distorted in the direction of their audience's opinion.

Recent support for the shared reality explanation was obtained in research that manipulated audience validation of communicators' messages (Echterhoff et al., in press). Echterhoff and colleagues first manipulated message validation by providing their communicators with feedback indicating that the audience either did or did not correctly identify the person being described in communicators' messages. They found that the SIB effect occurred when communicators believed their audience successfully identified the target, but not when they believed their audience did not identify the target.

In a second study, Echterhoff et al. (in press) manipulated audience validation by having participants communicate to either an ingroup or outgroup audience. According to social comparison theory (Festinger, 1950, 1954), people look to other ingroup members, but not outgroup members, for social validation (cf. Abrams & Hogg, 1990; Tajfel & Turner, 1986). Therefore, people should only experience the SIB effect when communicating to an ingroup audience. As expected, Echterhoff et al. found that the SIB effect only occurred when people communicated to an ingroup audience, even though people tuned equally to ingroup and outgroup audiences.

In a third study, Echterhoff et al. (in press) crossed success feedback (success vs. failure) with audience group membership (ingroup vs. outgroup). They found that the effects of success feedback and audience group membership established in the first two studies were replicated. Moreover, the effect of audience group membership on the SIB effect did not interact with success feedback. This suggests that obtaining explicit feedback that one's message has been understood by one's audience is sufficient to induce the SIB effect, even when communicating with an outgroup member.

Echterhoff et al.'s (in press) research provides strong evidence for a shared reality explanation of the SIB effect. When audiences provide message validation, either in the form of explicit feedback or implicit support from an ingroup member, communicators' subsequent cognitions about the target are distorted in the direction of their audience's attitude. In contrast, no memory distortion occurs when social validation is denied.

1.1.2. Alternative explanations for the SIB effect

In providing evidence for a shared reality explanation of the SIB effect, Echterhoff et al.'s (in press) research simultaneously casts doubt on several alternative explanations for this effect (see

reviews by Echterhoff et al., 2005, in press; Higgins, 1992). Many of these explanations assume that communication produces biased information processing. For example, an early explanation for the SIB effect focused on verbal encoding of the target information (Higgins & Rholes, 1978). According to this view, creating a biased message about the communication topic causes information to be verbally encoded in a distorted way, and this verbally encoded representation is more accessible in memory than the original information. Similar explanations focus on how creating a biased communication facilitates selective rehearsal of information, resulting in better memory for the rehearsed information (Pasupathi, Stallworth, & Murdoch, 1998; Tversky & Marsh, 2000).

Echterhoff et al.'s (in press) research undercuts these and other explanations that focus on information processing before or during message production. In Echterhoff et al.'s studies, all communicators tuned to the same extent, but only those who received success feedback from the audience or communicated with an ingroup member experienced memory distortion. Moreover, for the study in which only success/failure feedback was manipulated, the manipulation was introduced *after* communicators produced their message, thus prohibiting any differences between conditions in information processing during message production.

Echterhoff et al.'s research also casts doubt on the possibility that simply knowing the audience's opinion produces the SIB effect. One could argue that the audience's opinion provides additional information about the communication topic, and communicators therefore interpret the information in a way that is consistent with the audience's opinion. If so, this could account for why both communicators' messages and subsequent cognitions are distorted in the direction of the audience's opinion. Early research provided evidence against this possibility by exposing some participants to an audience's opinion but not having them communicate with the

audience (Higgins & Rholes, 1978). Participants who knew their audience's opinion but did not communicate with the audience did not experience memory distortion for the communication topic. Similarly, communicators in Echterhoff et al.'s (in press) first study who knew their audience's opinion but did not obtain social validation for their message did not experience memory distortion. It appears, therefore, that the SIB effect is not due to simple conformity on the part of communicators.

Explanations for the SIB effect focusing on dissonance reduction or self-perception have also been proposed. A cognitive dissonance (Festinger, 1962) explanation assumes that communicators experience dissonance when they distort information about the communication topic to match the audience's opinion. When later required to report their own memories and impressions of the topic, communicators report cognitions that are consistent with their distorted messages in order to reduce dissonance. A self-perception (Bem, 1967) account of the SIB effect suggests that when communicators are asked to report their cognitions about the communication topic, they consult their previous messages about the topic to determine their cognitions. Although a self-perception explanation makes sense when communicators are reporting their personal impressions of the topic, it does not provide a plausible explanation for why communicators' *memory* for the topic is distorted, given that communicators should not need to examine their own behavior to determine the original information about the communication topic.

Echterhoff et al.'s (in press) data and research by Higgins and McCann (1984) are inconsistent with the cognitive dissonance and self-perception explanations of the SIB effect. Echterhoff et al. (in press) point out that if communicators experience any cognitive dissonance in the SIB paradigm, the dissonance should be especially pronounced for those who receive

failure feedback, which should produce a stronger SIB effect in that condition. However, the SIB effect did not occur in the failure condition, making a cognitive dissonance explanation unlikely. Evidence that cognitive dissonance and self-perception explanations are inadequate also comes from research examining the operation of the SIB effect over time. Research measuring communicators' cognitions about the communication topic after short (10 minutes) and long (10-14 days) time delays has found that the correlation between communicators' messages and memories for the target information increases over time (Higgins & McCann, 1984). If pressure to reduce dissonance and/or propensity to rely on one's own behavior as information were driving the SIB effect, the effect should be stronger when communicators' messages were most salient, that is, after a short time delay. Thus, neither the cognitive dissonance nor self-perception explanation can account for why the SIB effect grows stronger as time passes.

In sum, explanations that emphasize information processing, conformity, cognitive dissonance, or self-perception have a difficult time accounting for existing data on the SIB effect. The shared reality account, however, remains a highly plausible explanation.

1.2. EXTENDING THE SIB EFFECT

The current research was designed to extend the literature on the SIB effect by investigating two previously unexplored circumstances in which the SIB effect may occur: (1) when communication concerns a group rather than an individual and (2) when communication is directed to a group of people rather than to a single person.

1.2.1. Communicating about a group in the SIB paradigm

Communicators in previous SIB studies received and transmitted information about a single individual. Consequently, the relevance of the SIB effect has been limited to communicating and

developing beliefs about individuals. It would be worthwhile, therefore, to determine if the SIB effect also applies to the perception of groups. Given that there are differences in the way people form impressions of individuals versus groups (Hamilton & Sherman, 1996), determining whether the SIB effect occurs when the communication topic is a group is an important prerequisite for utilizing the SIB paradigm to study how stereotypes 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 (see Ruscher, 2001 for a review). It is clear from this research that interpersonal communication is an important means by which stereotypes develop and persist. For example, discussing a group, especially with members of a salient ingroup, increases stereotype consensus (Haslam, Oakes, Reynolds, & Turner, 1999; Haslam et al., 1998; Sani & Thompson, 2001; Thompson, Judd, & Park, 2000). Furthermore, stereotype consensus is linked to communication in that traits that are most easily communicated are those that persist in stereotypes (Schaller, Conway, & Tanchuk, 2002).

Most of the relevant studies on the communication of stereotypes have focused on how existing stereotypes are discussed by communicators. In contrast, only a few studies have focused on how someone with no stereotype of a group comes to adopt the stereotype held by a communicative partner (Brauer, Judd, & Jacquelin, 2001; Schaller & Conway, 1999; Schaller et al., 2002; Thompson et al., 2000). Exploring how stereotypes develop through communication using the SIB paradigm would thus contribute to our knowledge of the factors that affect stereotype development. To provide a context for studying stereotype development using the SIB paradigm, three lines of research on stereotypes and communication will be reviewed.

1.2.1.1. Linguistic biases and stereotype perpetuation

One relevant line of research has focused on the level of abstraction people use to discuss ingroups and outgroups (see Maass, 1999, for a review). This research is based on the Linguistic Category Model developed by Semin and Fiedler (Semin & Fiedler, 1988, 1991), which describes four linguistic categories: descriptive action verbs (e.g., push), interpretive action verbs (e.g., harm), state verbs (e.g., hate), and adjectives (e.g., hateful). These categories fall along a concreteness-abstractness continuum, with different levels of abstraction having different consequences for understanding communication. Specifically, as one moves from concrete (descriptive action verbs) to abstract (adjectives) categories, communication becomes less informative about the situation in which the target acts and more informative about the target's enduring characteristics. In other words, more concrete categories are interpreted as pertaining to a particular situation in which the target acts (e.g., Tommy kissed his mother), whereas more abstract categories are interpreted as pertaining to enduring characteristics of the target (Tommy is loving).

Using this model, Maass, Salvi, Arcuri, and Semin (1989) focused on the level of abstractness used in communicating about ingroups and outgroups. Their Linguistic Intergroup Bias (LIB) model predicts that positive behaviors exhibited by ingroups and negative behaviors exhibited by outgroups will be discussed in abstract terms, whereas negative ingroup behaviors and positive outgroup behaviors will be discussed in concrete terms. These predictions have been supported in numerous studies using a variety of groups (see Maass, 1999; Maass et al., 1989). In a similar vein, Harasty (1997) showed that highly inclusive statements about outgroups are more

often negative than positive, whereas less inclusive statements about outgroups are equally negative and positive. Thus, when outgroups are discussed, inclusive (i.e., abstract) statements are also likely to be negative.

Two explanations for the LIB have been proposed (Maass, 1999; Maass et al., 1989). According to the social identity explanation, people display the LIB to enhance or protect their social identity. In contrast, the expectancy explanation suggests that people discuss expected behaviors in abstract terms and unexpected behaviors in concrete terms. Prior expectations may produce the LIB because positive ingroup and negative outgroup behaviors are often in line with expectations, whereas negative ingroup and positive outgroup behaviors are not. Evidence for both of these explanations has been found. For example, in support of the social identity explanation, Maass, Ceccarelli, and Rudin (1996) demonstrated that the LIB is more prominently displayed in reference to a hostile than a friendly outgroup and that people who display the LIB also experience higher self-esteem. In a second study, Maass et al. (1996) found evidence for both the social identity and expectancy explanations. Consistent with the social identity explanation, the LIB was more pronounced when an ingroup was derogated by an outgroup than when a superordinate group containing both the ingroup and outgroup was threatened by a shared outgroup. Consistent with the expectancy explanation, there was a tendency in all conditions for typical behaviors to be described in more abstract terms than atypical behaviors (see Rubini & Semin, 1994, for corroborating evidence). These results suggest that social identity and expectancies are both useful in explaining the LIB.

The tendency for expected behaviors to be characterized more abstractly than unexpected behaviors, termed the Linguistic Expectancy Bias (LEB, Wigboldus, Semin, & Spears, 2000), appears to contribute to the perpetuation of cultural stereotypes about social groups. Specifically,

Wigboldus et al. found that people used more abstract language when describing men and women who acted in ways consistent, rather than inconsistent, with gender stereotypes. After having participants read each others' descriptions, the researchers found that descriptions of stereotype-consistent targets elicited more dispositional inferences than did descriptions of stereotype-inconsistent targets. Moreover, this relationship was mediated by the level of abstraction used to describe the target. That is, communicators used more abstract language when describing stereotype-consistent targets, and this abstraction led to more dispositional inferences (also see Ruscher & Duval, 1998). This is consistent with research by Maass et al. (1989), which demonstrated that people perceive abstract information about a target to be more informative than concrete information and that people rate behaviors described in abstract (vs. concrete) terms as more likely to be repeated in the future, although the latter effect was limited to undesirable behaviors.

Research on the LIB and the LEB thus highlights important linguistic mechanisms by which existing stereotypes can be perpetuated through communication. A related line of research, discussed next, has investigated how stereotypes are retained as information about groups is communicated from person to person.

1.2.1.2. Stereotype perpetuation through communication chains

Early experiments on collective remembering established that information becomes distorted as it is passed from person to person. Bartlett (1932) developed the serial reproduction task to study this phenomenon. In this task, communicators encode a stimulus (usually a picture or a story) and convey that information to another person, who in turn conveys the information to yet

another person, and so on. Not surprisingly, Bartlett found that stories are transformed through the process of serial reproduction, losing much of their original detail and undergoing extensive distortion.

Allport and Postman (1947) identified three processes by which information becomes transformed through serial reproduction: leveling, sharpening, and assimilation. Leveling refers to the loss of details, whereas sharpening refers to the maintenance and enhancement of details. Information is not lost or retained randomly; rather, leveling and sharpening occur such that assimilation takes place. That is, the information is transformed by becoming assimilated to communicators' existing knowledge and expectations. Details that are inconsistent with communicators' perspective get leveled, whereas consistent information gets sharpened.

A classic demonstration of leveling, sharpening, and assimilation that is relevant to the current discussion was conducted by Allport and Postman (1947). These investigators presented communicators with a picture of two men, one White and one Black, engaged in conversation on a train. The White man had a razor tucked in his belt and was pointing his finger in the face of the Black man, who was standing with his hands raised to his waist. In more than half the serial reproduction chains, the information in the picture became distorted such that the Black man held the razor. Allport and Postman explained this tendency in terms of people assimilating the picture so that it was consistent with their stereotype that Black men often carry razors. This is a powerful demonstration of how stereotypes can be perpetuated through communication.

More recently, Lyons and Kashima used the serial reproduction task to conduct more systematic analyses of how stereotype-consistent and -inconsistent information is retained through multiple retellings of a story (Kashima, 2000; Lyons & Kashima, 2001, 2003). In their research, participants read and retold a story containing stereotype-consistent and -inconsistent

behaviors of members of a group, such as men and women (Kashima, 2000), football players (Lyons & Kashima, 2001), or a fictitious island community (Lyons & Kashima, 2003). The extent to which stereotype-consistent and -inconsistent behaviors were retained through multiple retellings of the story was assessed. Lyons and Kashima found that stereotype-consistent information was retained, whereas stereotype-inconsistent information was dropped, demonstrating that cultural stereotypes can be perpetuated through the transmission of stereotype-relevant information.

Some qualifying conditions exist, however, for the persistence of stereotype-consistent information through a story chain. Lyons and Kashima (2003) found that the effect disappeared when members of the communication chain did not have the same preexisting stereotype about the target group or when the stereotype conveyed in the story was largely rejected by the wider social community. These results highlight that having shared stereotypes and perceiving that one's stereotypes are shared are both important prerequisites for stereotypes to be perpetuated through communication chains.

Lyons and Kashima (2003) also found that the bias toward stereotype-consistent information disappeared from communication chains when communicators believed that the next person in the chain already shared the communicators' knowledge of the stereotyped group. In this case, communicators at all positions in the chain conveyed equal amounts of stereotype-consistent and -inconsistent information. This could be the result of communicators attempting to follow a basic communication norm to provide relevant information (Grice, 1975). Given that communicators' audiences already knew about the stereotypes of the target group, communicators might have focused on sharing details of the story that were inconsistent with the stereotype because that information was more interesting and informative.

Other research supports the idea that communicators focus on stereotype-inconsistent information when that information is unshared. For instance, groups in which stereotype-inconsistent information is concentrated in one member rather than equally dispersed among all members focus more heavily on stereotype-inconsistent information when discussing a social target, ultimately developing less stereotypic impressions of that target (Brauer et al., 2001; also see Klein, Jacobs, Gemoets, Licata, & Lambert, 2003). Similarly, dyads in which members have unique (unshared) information about a target member of a stereotyped group spend more time discussing stereotype-inconsistent information than do dyads in which members have the same (shared) information (Ruscher & Duval, 1998, Studies 1 & 3). Furthermore, people who are exposed to a conversation between dyad members with unique (vs. shared) information form less stereotypic impressions of the target (Ruscher & Duval, 1998, Studies 2 & 4).

The research reviewed in this section suggests that when stories about stereotyped groups are transmitted from person to person, oftentimes the stories become more and more consistent with the prevailing stereotype, thereby contributing to the perpetuation of that stereotype. However, under some circumstances this bias is prevented, or even reversed, in that communicators focus more on stereotype-inconsistent information. This may be a desirable occurrence because people exposed to stereotype-inconsistent communications about a group ultimately form less stereotypic views of that group. The research in this section therefore identifies a mechanism by which stereotypes are perpetuated by communication as well as a mechanism by which communication can lead to reduced stereotyping. The next section describes research that examines the role of specific types of motivations and how they can shape the stereotypes people form through communication.

1.2.1.3. Motivations that shape stereotypes through communication

Communicators can have a number of goals during conversation (Higgins, 1981). For example, in addition to following general norms of communication (e.g., conveying only necessary information to an audience, Grice, 1975), communicators can desire to reach a consensus with their communication partner(s), convey a certain impression of themselves, or influence their communication partner. The goals held by communicators are important to the extent that they influence the content of their messages to others (Douglas & Sutton, 2003; Rubini & Sigall, 2002). The effects of four important goals -- consensus, accuracy, desire to achieve cognitive closure, and impression management -- on communication concerning stereotypes of social groups have received research attention.

1.2.1.4. Consensus and accuracy motivation

The goals of consensus and accuracy have been investigated in two studies by Ruscher, Hammer, and Hammer (1996). In their first study, the researchers crossed consensus goals (think as individuals rather than striving for consensus vs. think as a team and reach consensus) and accuracy goals (accuracy instructions provided vs. not provided) in dyads that were communicating about members of two stereotyped groups, alcoholics and paraplegics. In their second study, they repeated the procedure for the consensus/no accuracy and consensus/accuracy conditions, except that accuracy was induced through an accountability manipulation in which participants were told that their ratings of the targets would be compared to ratings made by a psychiatrist. They found that consensus-oriented dyads (regardless of whether they also had a goal to be accurate) spent more time discussing and expressed more agreement regarding stereotype-consistent than stereotype-inconsistent information about the targets. Thus, a consensus goal focused the conversation on stereotypes rather than individuating information. In

contrast, accuracy-oriented dyads (regardless of whether they also had a goal to reach consensus) spent more time discussing stereotype-inconsistent than stereotype-consistent information. Furthermore, consensus/accuracy-oriented dyads agreed with stereotype-inconsistent information to a greater extent than did the consensus-only dyads, with the reverse being true for stereotype-consistent information. Finally, dyads that had both accuracy and consensus goals expressed more disagreement in general than did dyads that only had a consensus goal.

In addition to studying how communication goals affected conversation content, Ruscher et al. (1996) investigated how conversation content correlated with subsequent stereotypes of the target and impression disparity among dyad members. With regard to stereotypes, even though consensus-oriented dyads focused on stereotype-consistent information and accuracy-oriented dyads focused on stereotype-inconsistent information during their conversations, there were no differences between conditions in subsequent stereotypes. However, there was a positive correlation between discussion of stereotype-consistent information and subsequent stereotypic impressions of the target. With regard to impression disparity, consensus motivation alone tended to reduce impression disparity, whereas the combination of accuracy and consensus goals tended to increase disparity. Furthermore, emphasis on stereotype-consistent information during conversations was negatively correlated with impression disparity, especially for the alcoholic target. In total, these results suggest that consensus and accuracy goals can shape the content of communication about group members, which in turn can influence stereotypes and stereotype consensus, at least under some conditions.

1.2.1.5. Motivation for cognitive closure

Another motivation that has been explored in the context of communication about stereotypes is the need for cognitive closure, or an “individual’s desire for a firm answer to a question and an

aversion toward ambiguity" (Kruglanski & Webster, 1996, p. 264). The need for closure can be a stable personality characteristic or it can be induced situationally, for example by introducing time pressure or unpleasant noise into an environment. Need for closure has a number of consequences, including increased ingroup bias (Shah, Kruglanski, & Thompson, 1998), more reliance on stereotypes (Dijksterhuis, van Knippenberg, Kruglanski, & Schaper, 1996; Kruglanski & Freund, 1983), and, most relevant to the current discussion, increased display of the linguistic intergroup bias (Webster, Kruglanski, & Pattison, 1997). Webster et al. found that, whether need for closure was dispositional (Exp. 1) or situationally induced (Exp. 2), high need for closure was associated with using more abstract language when describing positive behaviors of an ingroup member and negative behaviors of an outgroup member. This research demonstrates that specific motivations of communicators can enhance existing linguistic biases that contribute to the perpetuation of stereotypes.

1.2.1.6. Impression management motivation

In addition to the desire for consensus, accuracy, and closure, communicators can be concerned about how others perceive them during communication. Schaller and Conway (1999) took an interesting approach to understanding the development of stereotypes by focusing on how impression management goals affect how people communicate about groups and the subsequent stereotypes they develop. Prior to communicating with a partner about an unfamiliar group, participants were told either that communicating positive traits about others was correlated with life success or that communicating negative traits was correlated with life success. Schaller and Conway found that participants who believed focusing on positive traits correlated with success included more positive traits in their description of a group than did participants in the negative

traits condition. Participants' subsequent stereotype of the group also reflected their descriptions of it, such that people who communicated about positive traits formed more positive stereotypes of the group than did those who communicated about negative traits.

Schaller and Conway's (1999) research provides a clear demonstration of how the desire to manage one's impression during communication can shape the stereotypes one develops. In the next section a different social motivation that is integral to the current research is discussed, namely, the motivation to achieve shared reality with others.

1.2.1.7. Motivation to achieve shared reality about groups

Viewing stereotyping from a shared reality perspective suggests that social validation should be very important for the survival of stereotypes (Hardin & Higgins, 1996). For example, to the extent that certain stereotypes lack social support, they should weaken and eventually disappear. Several lines of research have demonstrated that one's beliefs about social groups are closely linked to the perceived beliefs of others. For example, overhearing another person make racist remarks can make one's subsequently expressed opinions more racist (Blanchard, Crandall, Brigham, & Vaughn, 1994; Blanchard, Lilly, & Vaughn, 1991; Greenberg & Pyszczynski, 1985; Kirkland, Greenberg, & Pyszczynski, 1987; Simon & Greenberg, 1996). In contrast, research with children has shown that discussing racial issues with low-prejudiced friends can reduce prejudiced attitudes among those who are initially high in prejudice (Aboud & Doyle, 1996). Finally, knowing that an ingroup member has a positive relationship with a member of an outgroup can reduce unfavorable attitudes toward that outgroup (Liebkind & McAlister, 1999; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997).

Additional research by Stangor and colleagues examined the role of perceived social consensus in maintaining one's stereotypes. They found that believing there is consensus for

one's stereotypes makes them resistant to change, even in the face of allegedly scientific evidence refuting the stereotypes (Stangor, Sechrist, & Jost, 2001). Perceived consensus for one's stereotypes also leads to more accessible stereotypes and more prejudiced behaviors (Sechrist & Stangor, 2001). Thus, not only is perceived consensus important for the valence of one's stereotypes, it also influences one's resistance to stereotype change in light of non-consensus based evidence, the accessibility of stereotypes, and whether one is likely to act upon a stereotype in a given situation. These findings are consistent with a shared reality view of stereotyping and support one goal of the current research, namely to examine the development of stereotypes from a shared reality perspective.

1.2.2. Communicating to more than one person in the SIB paradigm

Research on the communication of stereotypes typically involves dyads, so little is known about how stereotypes develop through communication with multiple people (for exceptions see Brauer et al., 2001; Thompson et al., 2000). This issue is addressed by the second goal of the present research, which is to explore how audience size affects the degree to which people experience the SIB effect. Exploring the effect of audience size is also interesting with regard to the SIB literature because it adds to what is known about how audience characteristics affect the SIB effect. Aside from the effect of audience group membership explored in Echterhoff et al.'s (in press) recent work, only one other audience characteristic, status, has been investigated (Higgins & McCann, 1984). In that study, communicators who were either high or low in authoritarianism communicated messages to audiences who were either equal or higher in status. Results indicated that both low and high authoritarians tailored their messages to the attitudes of the equal-status audience, but only high authoritarians tailored their messages to the attitudes of the higher-status audience. The typical message-dependent distortions in memory and

impressions of the target occurred for both low and high authoritarians, but the correspondence between message distortions and subsequent memory and impressions was much stronger for high than low authoritarians. Higher-status audiences appeared to increase the magnitude of the SIB effect for people high in authoritarianism, thus demonstrating that audience status has important consequences for the SIB effect.

The current research explores the impact of another audience characteristic, size, by having participants in the SIB paradigm communicate with audiences consisting of either one or three people. Given that all previous research on the SIB effect has utilized a single-person audience, it is unclear whether the same tuning and cognitive distortion outcomes will occur when people communicate with larger audiences. Research on the area of competition, for instance, has shown systematic differences in the extent to which people are competitive with individuals versus groups (Insko & Schopler, 1998), suggesting that changing a one-on-one situation to a group situation can affect the way people respond to that situation. In the present study, two competing hypotheses are plausible regarding the impact of audience size on the SIB effect. One hypothesis is derived from the shared reality perspective, whereas the other is based on the operation of informational influence.

1.3. PREDICTIONS

According to the shared reality perspective, communicators who have a 1-person audience tailor a message about a target for their audience, who provides validation of that message (either implicitly or explicitly). Because of this validation, communicators gain increased confidence that their message is an accurate depiction of the target and thus rely on their biased message when they think about the target at a later time. This results in the audience's opinion having an

indirect effect on communicators' memories and impressions, mediated by the content of their messages. That is, the audience's opinion affects communicators' messages, which in turn shape communicators' memories and impressions. In the current research, it is predicted that communicators in the 1-person audience condition will experience this typical SIB effect.

The crucial component in the shared reality account of the SIB effect is that the audience validates the message; without validation, communicators do not experience audience-congruent memories and impressions about the target (Echterhoff et al., in press). If the degree of validation provided by the audience plays a similar role when the audience is composed of three people, then the SIB effect should be even stronger in that situation. This is because participants who communicate to three people should perceive more validation for their message than those who communicate to one person. This increased validation should make communicators more confident in the validity of their message, thereby causing them to rely more on their message as a source of information about the target. Thus, the indirect effect of a 3-person audience's opinion on communicators' memories and impressions should be particularly strong.

Predictions based on the shared reality perspective assume that (a) communicators will perceive more social validation for their message from a 3-person audience than a 1-person audience and (b) this increased validation will produce stronger message-mediated memory and impression effects. However, increasing audience size not only increases the degree of potential validation, but also the potential for communicators to adopt the audience's opinion directly. Communicators may perceive the opinion of three people as more credible than the opinion of one person and may therefore more readily accept the opinion of three people as factual. This could lead to a different pattern of results than is predicted by the shared reality perspective. If communicators accept the 3-person audience's opinion about the target as valid, both their

message and their private cognitions about the target would be expected to be shaped by the audience's opinion. This would lead to audience tuning as well as audience-congruent memory and impression distortion. Importantly, however, because communicators accept the opinion of the audience as factual, there should be direct, rather than a mediated, effects of the audience's opinion on communicators' memories and impressions of the target. In other words, 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. This is reminiscent of the social influence effects attributed to informational influence (Deutsch & Gerard, 1955; Levine & Russo, 1987; cf. Wood, 1999), which refers to influence based on the desire to be correct and the belief that the influence source is a more valid source of knowledge than oneself.[1]

[1] Informational influence is typically contrasted with normative influence, which refers to influence based on the desire to gain acceptance and/or avoid rejection and the belief that others are more likely to accept a person who agrees with them than one who disagrees. Given that the audience in the SIB paradigm has no power to punish the communicators if they do not conform to the audience's opinion, normative influence is not a plausible mechanism in the current research.

2. EXPERIMENT 1

2.1. OVERVIEW

There were two primary goals of Experiment 1. The first goal was to explore whether the SIB effect occurs when the topic of communication is a group. The second goal was to explore the effect of audience size on the SIB effect. Communicators received information about an unfamiliar group and then described that group to a 1- or 3-person audience that allegedly liked or disliked the group. After a brief delay, communicators recalled as much as they could about the original target information in a free recall format. They also rated their overall impression of the target group on a Likert scale and then described their impressions of the target group in their own words.

Audience size was manipulated by describing the audience as consisting of either one person or three people. The 1-person audience provided a test of whether the SIB effect would occur when communication took place under traditional SIB conditions (i.e., one-on-one communication) but the topic of communication was a group. The 3-person audience provided a test of how communicating with a larger audience would affect communicators' messages and subsequent cognitions about the group. A 3-person audience was chosen for the larger audience condition because research suggests that the impact of group size on conformity asymptotes at a group size of three (Asch, 1951; Rosenberg, 1961).

To maximize the potential impact of the 3-person audience, the members of the audience were described as independent. Specifically, it was emphasized that they were not interacting with one another and had each formed their own opinion of the target group. Previous research on social influence exerted by individuals versus groups has established that influence is determined not by the number of *people* one is facing, but rather by the number of *distinct social entities* (Wilder, 1977). Individuals who are presented as members of a group are less persuasive than the same number of independent individuals (Harkins & Petty, 1987; Wilder, 1977, 1978). This finding presumably occurs because a group is perceived as having fewer diverse perspectives and more overlapping knowledge than the same number of independent individuals (Harkins & Petty, 1987), rendering the opinion of groups less credible.

2.2. METHOD

2.2.1. 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) X 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.

2.2.2. Materials

Information about the target group was patterned closely after characteristics used to describe target individuals in previous SIB studies (Echterhoff et al., 2005; Higgins & Rholes, 1978; McCann & Hancock, 1983; Sedikides, 1990), but modified so that the characteristics described a group rather than an individual. Six characteristics used in recent studies (Echterhoff et al., 2005,

in press) were adapted for use in the current study. Each characteristic was designed to be neither clearly negative nor positive. Although the ambiguous tone of these characteristics was validated in previous research using an individual as the target (Sedikides, 1990), it was necessary to do additional pilot testing to determine whether they remained ambiguous when applied to a group.

This pilot testing occurred in two phases. First, 17 undergraduate students were asked to estimate the extent to which they would like or dislike groups that possessed each of the six characteristics, using an 11-point Likert scale ranging from -5 (*dislike very much*) to 5 (*like very much*; see Appendix A). In order for a characteristic to be considered ambiguous, its mean rating had to be neutral (i.e., not significantly different from zero, the midpoint of the Likert scale). All but two items (2 and 5) met this criterion (see Table 1).

For the second phase of pilot testing, the four characteristics that were identified as ambiguous during phase one were combined into a paragraph describing a single group (see Appendix B). This paragraph was distributed to 20 undergraduate students who had not participated in phase one. The overall tone of the paragraph was assessed by three 11-point Likert scale items measuring (a) the extent to which participants liked the group (-5 = *dislike very much*, 5 = *like very much*), (b) whether the paragraph conveyed something positive or negative about the group (-5 = *very negative*, 5 = *very positive*), and (c) participants' overall impression of the group (-5 = *very negative*, 5 = *very positive*). These items were very highly correlated (*alpha* = .94) and were therefore averaged into a single score. This score met the ambiguity criterion from phase one. That is, the average rating (M = -.12, SD = 1.19) did not differ significantly from zero, the midpoint of the combined scale, $t(19) = -.27$, *ns*. This paragraph thus served as the target group description in Experiments 1 and 2.

Table 1: Target Descriptions Pilot Tested for Ambiguity

Target Description	*t* test comparing mean rating to midpoint of scale (0)
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.	M = -.47, SD = 2.79 $t(16)$ = -.70, *ns*
2. The members of this group have their own standards of behaving. As students they would tell on fellow classmates whom they saw break school rules, like cheating on tests. In fact, they claimed that never once in their lives have they thought about cheating.	M = -2.76, SD = 1.79 $t(16)$ = -6.38, $p < .01$
3. 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 eat in fashionable ethnic restaurants. In social situations, they often talk at length about foreign cultures and art.	M = 1.24, SD = 2.46 $t(16)$ = 2.07, *ns*

Table 1 (continued)

Target Description	*t* test comparing mean rating to midpoint of scale (0)
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.	M = .29, SD = 2.59 $t(16)$ = .47, *ns*
5. These group members spend a great amount of their time in search of what they like to call excitement. They have already climbed Mt. McKinley, done some skydiving, shot the Colorado rapids in a kayak, driven in a demolition derby, and piloted a jet-powered boat -without knowing much about boats. They have been injured, and even risked death, a number of times.	M = 2.24, SD = 1.79 $t(16)$ = 5.16, $p < .01$
6. 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.	M = -.71, SD = 2.02 $t(16)$ = -1.44, *ns*

Note. Items 2 and 5 were clearly negative and positive, respectively. Hence, they were excluded from the final target description.

2.2.3. Procedure

2.2.3.1. Introduction and informed consent

After participants entered the lab, they were 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. To increase the realism of the audience, as participants walked to the lab, the experimenter opened the door of a room near the lab to "check in on" the audience.

2.2.3.2. Cover story

The cover story and procedure were adapted from previous SIB studies to meet the needs of the current study. As background for the experiment, participants were told that:

> "Our research group is interested in interpersonal relations in small groups. A number of small groups of students on campus have allowed us to study them over the past year. These groups are close-knit groups of friends who spend most of their time together outside of class. They even sometimes take classes together because they are interested in the same subjects. We have been able to learn a lot about these groups by observing them in various settings and videotaping some of their interactions."

2.2.3.3. Audience size manipulation

At this point, the audience size manipulation was introduced. As the participants' task was described, the experimenter referred to the audience as consisting of either one person or three people. In the script below, the brackets contain text that varied for 1- and 3-person audiences.

"I had [the person, the 3 people] down the hall come in an hour ago to watch the videotapes of four of these groups. [For the 3-person group only: They've been watching these tapes in separate cubicles in the other room and have not been interacting with one another.] [That person/they] finished watching the tapes just before you arrived and [has/have] gotten a good sense of what each group is like. What you are going to be doing today is reading about the members of just one of the groups they've been watching in the videos (experimenter pauses and looks at paper): Group B. I want to clarify that the information that you will read is based on the observations we, the researchers, have made of Group B. After you read about the group you will type a description of that group for [the other participant, the three other participants]. Then you will send that description to [the other participant, each of the other participants]. At that point, [they, each of them] will [For the 3-person group only: independently] attempt to identify the group you described from among the four groups they are familiar with."

2.2.3.4. Audience opinion manipulation

Participants were then given an opportunity to ask questions about their task. When all questions had been answered (often there were none), the experimenter reiterated the audience size manipulation by saying, "To summarize, you will read about Group B, then send a description of that group to [the person, each of the people] down the hall, who will then attempt to identify the group you described." The experimenter then introduced the audience opinion manipulation by mentioning that the audience either liked or disliked 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 audience 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."

2.2.3.5. Computer task, part I

After the audience size and opinion manipulations were introduced, participants were moved to a computer that would present the target description and ostensibly transmit participants' typed messages to their audience. A computer program was written specifically for this purpose. Instructions tailored to the participants' audience size condition were presented on the first screen of the program. These were merely a summary of the oral instructions given by the experimenter and served to remind participants of the size of their audience. The target description was presented on the second screen of the program. When participants had finished reading the target description, they proceeded to the next screen, which prompted them to type a message describing the information they had just read about the target group. They were reminded that only the audience would see their message. When participants were finished typing their message, they clicked a button labeled "Send" and were then presented with a confirmation screen that indicated their message had been sent. Participants then notified the experimenter, who had been waiting outside, that they had sent their message.

2.2.3.6. Filler task and computer task, part II

At this point participants completed a 10-minute paper-and-pencil filler task consisting of a relatively easy crossword puzzle. The purpose of this task was to allow the decay of short-term memory for the information that participants had read about the target group. Participants then used the computer once again to answer questions about the target group. It was emphasized that their responses for the remainder of the experiment would be kept private (i.e., would not be shared with their audience). During the second part of the computer task, participants were asked to recall the original description of the target group and report their impressions of the group. 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 Likert scale ranging from 1 (*not at all*) to 10 (*very much*). Second, participants were asked to describe their personal impressions of the group members. The order in which participants completed the recall and impression measures was counterbalanced across participants.

2.2.3.7. Additional measures and manipulation checks

Five exploratory questions (see Appendix C) were used to assess (a) the extent to which participants felt they had enough information to form an impression of the target group (items 1 and 2), (b) participants' interest in interacting with their audience again (items 3 and 5), and (c) participants' belief that the judgment of their audience was trustworthy (item 4). Participants answered these questions after they completed part II of the computer task.

The manipulation checks for audience size and opinion were administered orally by the experimenter (see Appendix D). Participants were first asked to recall how many people were in their audience (item 1). Depending on their answer, the experimenter then asked the appropriate

audience opinion manipulation check question (items 2a-2c). To determine whether participants believed their audience fully comprehended their message, they were also asked how many members of their audience correctly identified the group participants described (item 3) as well as how confident participants were in their estimation of the audience's understanding (item 4). Finally, participants were asked to guess the gender of their audience (item 5).

2.2.3.8. Debriefing

Participants were debriefed about the purpose of the research and the experimental manipulations at the conclusion of the session, at which time they were also probed for suspicion. A two-pronged approach was used to check for suspicion. First, any spontaneous expressions of suspicion about the experiment (e.g., that the audience was not real) were noted. Second, in the event that participants did express suspicion, the experimenter probed to assess the time at which suspicion occurred (e.g., at the start of the experiment or while filling out the final questionnaire) and the depth of the suspicion (e.g., slight or strong). Upon completion of the debriefing, participants were awarded experimental credit, thanked, and dismissed.

2.3. RESULTS

2.3.1. Manipulation and suspicion 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.

Suspicion probes revealed that 13 participants were suspicious of the basic cover story of the experiment. Most of these people either did not believe that the audience was real or that the audience's opinion was genuine. These participants were excluded from the analyses, leaving 74 non-suspicious participants.

Participants were also asked to indicate how many members of their audience correctly identified the target group. This question served as a measure of the extent to which participants believed their message was understood by their audience. The vast majority of non-suspicious participants (85%) indicated that their entire audience guessed the correct target group. All those who thought at least part of their audience guessed incorrectly were in the 3-person audience condition. Given that the shared reality interpretation of the SIB effect depends on communicators believing that their audience understood their message, it is necessary that all participants hold this belief. Therefore, the 11 participants who indicated that their audience did not identify the target group correctly were also excluded from the analyses. The final data set for Experiment 1 thus contained 63 participants: 36 and 27 in the 1- and 3-person audience conditions, respectively.[2,3,4]

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[2] All analyses were conducted on both the restricted and the full data sets. The pattern of results was consistent for both data sets.

[3] Participants were also asked to rate their confidence in their estimate of the number of people in the audience who identified the target group correctly. A 2 (audience opinion) X 2 (audience size) between-subjects ANOVA revealed only a main effect of audience size, $F(1, 83) = 6.12$, $p < .05$. Participants who communicated to a 3-person audience expressed more confidence ($M = 5.50$, $SD = 1.15$) than those who communicated to a 1-person audience ($M = 4.84$, $SD = 1.34$).

[4] Participants were also asked to guess the gender of their audience. Just over half the participants (55%) made no assumption about the gender of their audience. Of those who did, both men and women tended to believe they were communicating with a predominantly female audience. Specifically, 12 out of 41 (29%) females believed their audience was predominantly female, compared to 4 (10%) who believed their audience was predominantly male and 25 (61%) who did not know. For male participants, 15 out of 45 (33%) believed their audience was predominantly female, compared to 8 (17%) who believed the audience was predominantly male and 22 (49%) who did not know.

2.3.2. 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 then combined into an overall score for the passage ranging from -5 (*extreme negative distortion*) to 5 (*extreme positive distortion*). Inter-coder 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 Likert scale 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. Correlations among the three measures are displayed in Table 2.

Table 2: Experiment 1 Correlations Among Message, Recall, and Impression Valence

	1-Person Audience (N = 36)		3-Person Audience (N = 27)	
	Recall	Impressions	Recall	Impressions
Message	.49**	.54**	.51**	.65***
Recall		.43**		.67***

Note. ** $p < .01$, ***$p < .001$

2.3.3. Audience tuning

The extent to which participants tailored their messages to their audience's opinion was assessed by conducting a 2 (audience opinion) X 2 (audience size) between-subjects ANOVA with message valence as the dependent variable.[5] This analysis revealed a main effect of audience opinion, such that messages written for positive audiences (M = .84, SD = .64) were more positive than messages written for negative audiences (M = -.68, SD = 1.50), $F(1, 58) = 25.28$, $p < .001$. Neither the main effect of audience size nor the interaction was significant, Fs < 1. These results indicate that audience tuning occurred in this study and was similar in magnitude for 1- and 3-person audiences.

2.3.4. Effects of audience size on recall and impressions

The competing predictions discussed earlier are best tested by examining the data for 1- and 3-person audiences separately, as has been done in previous studies examining moderators of the SIB effect (e.g., Higgins & McCann, 1984; McCann & Hancock, 1983; Todorov, 2002). Path analyses using multiple regression were conducted to identify the relationships among audience opinion, messages, recall, and impressions for each audience size.

2.3.4.1. 1-person audience

Because the 1-person audience condition replicated prior SIB studies (with the exception of using a group rather than an individual as the target), it was expected that the SIB effect would occur for the 1-person audience. The SIB effect exists when the relationships between the audience's opinion and communicators' subsequent cognitions about the target (i.e., memory and

[5] 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 Experiment 1 or 2. Gender and task order are therefore not discussed further.

impressions) are mediated by the valence of communicators' messages to the audience. Kenny, Kashy, and Bolger (1998) outlined four steps to test mediation. The first step is to demonstrate that the relationship between the independent variable (audience's opinion) and the dependent variable (memory distortion or impression) is significant. The second step is to demonstrate that the independent variable significantly predicts the mediator (message valance). The third step is to show that the mediator significantly predicts the dependent variable when controlling for the independent variable. Finally, the relationship between the independent and dependent variables should be eliminated when controlling for the mediator. In the event that steps 2 and 3 are met, Kenny et al. recommended that the Sobel test (Sobel, 1982) be conducted to assess whether the relationship between the independent and dependent variables is significantly reduced when controlling for the mediator.

Although Kenny et al. (1998) outlined four steps, they also pointed out that not all steps are necessary for mediation to be present. Specifically, step 4 is only necessary when full mediation is predicted. In the event that partial mediation is present, the relationship between the independent and dependent variables could be reduced, but still remain significant. In the present research, the SIB effect would be deemed present in the event of either partial or full mediation. The crucial feature of the SIB effect is that controlling for message valence substantially reduces the relationship between audience opinion and communicators' subsequent cognitions -- full mediation need not occur.

Furthermore, 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 (Collins, Graham, & Flaherty, 1998; Shrout & Bolger, 2002), Kenny et al. 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

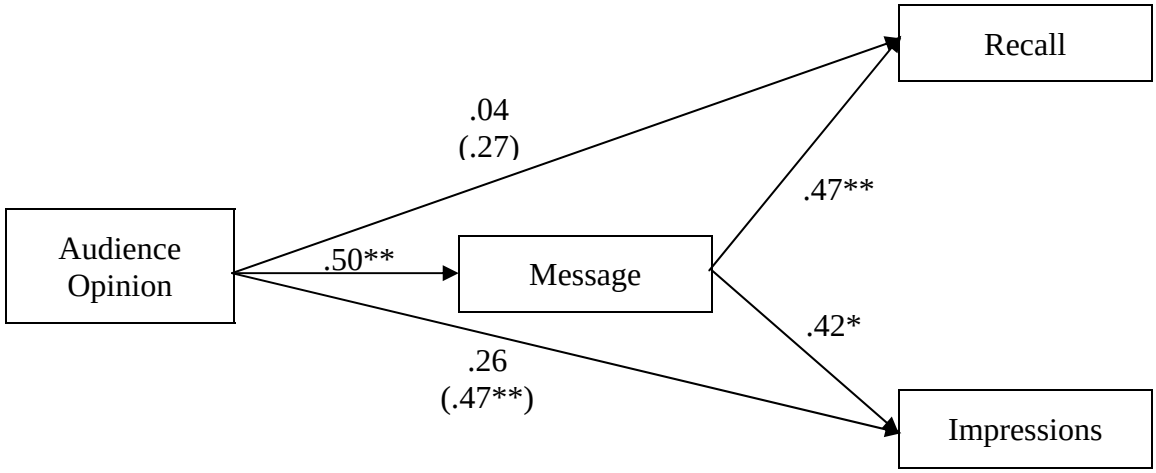
steps in establishing mediation are Steps 2 and 3" (p. 260). In the current research, all four steps are conducted, but emphasis is placed on steps 2 and 3, in line with Kenny et al.'s recommendations.

In the 1-person audience condition, the direct effect of audience opinion on recall (step 1) did not reach standard levels of significance, $\beta = .27$, $t(34) = 1.65$, $p = .11$ (see Figure 1). However, the effect of audience opinion on message (step 2) was significant, $\beta = .50$, $t(34) = 3.32$, $p < .01$. Furthermore, in a regression analysis in which both message and audience opinion were included as predictors of recall, message was significant (step 3), $\beta = .47$, $t(33) = 2.72$, $p < .01$, whereas audience opinion was not (step 4), $\beta = .04$, $t(33) = .22$, *ns*. A Sobel test revealed that controlling for message significantly reduced the relationship between audience opinion and recall, $Z = 2.10$, $p < .05$. Thus, the SIB effect was obtained with a 1-person audience using a group as the target.

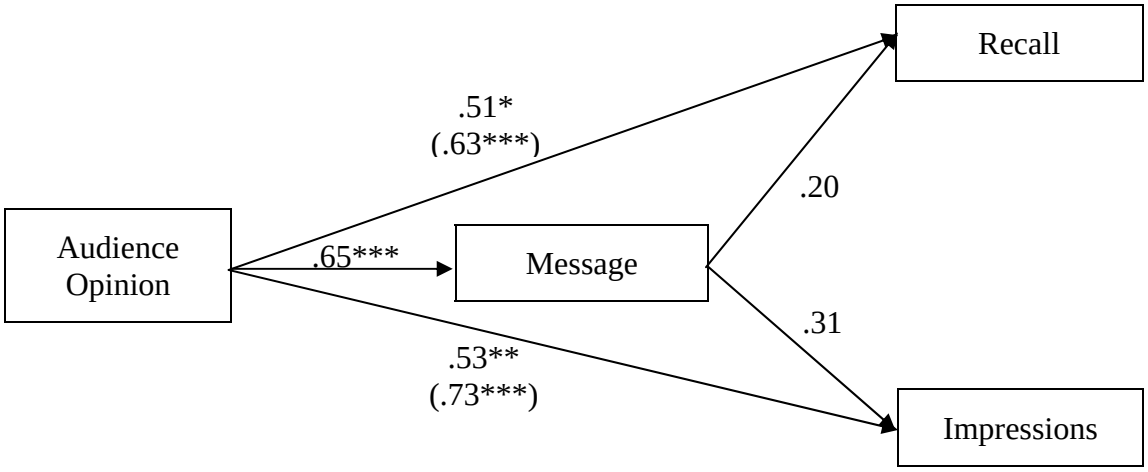
Similar results were found for impressions (see Figure 1). The effect of audience opinion on impressions was significant, $\beta = .47$, $t(34) = 3.08$, $p < .01$, as was the effect of audience opinion on message (noted above). In a regression analysis in which both message and audience opinion were included as predictors of impressions, message significantly predicted impressions, $\beta = .42$, $t(35) = 2.57$, $p < .05$, but audience opinion did not, $\beta = .26$, $t(35) = 1.62$, *ns*. A Sobel test revealed that controlling for message significantly reduced the relationship between audience opinion and impressions, $Z = 2.03$, $p < .05$. The SIB effect was therefore obtained in the 1-person condition for impressions as well as recall.

Figure 1: Experiment 1 Path Analyses

1-Person Audience Condition



3-Person Audience Condition



Experiment 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. *p < .05, **p < .01, ***p < .001

2.3.4.2. 3-person audience

Mediational analyses were also performed in the 3-person audience condition (see Figure 1). The effect of audience opinion on recall (step 1) was significant, $\beta = .63$, $t(23) = 3.95$, $p < .01$, as was the effect of audience opinion on message (step 2), $\beta = .65$, $t(25) = 4.24$, $p < .001$. However, when both message and audience opinion were included as predictors of recall, message was *not* a significant predictor of recall (step 3), $\beta = .20$, $t(23) = .96$, *ns*, while audience opinion remained a strong predictor (step 4), $\beta = .51$, $t(23) = 2.47$, $p < .05$. 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, contrary to the shared reality prediction that the SIB effect would be particularly strong in the 3-person audience condition, the SIB effect was absent from the 3-person audience condition. Instead, consistent with the alternative prediction that communicators would perceive the 3-person audience to be a factual source of information about the target, the audience's opinion affected communicators' messages as well as their subsequent memories, and the latter effect was *direct* rather than mediated by message valence.

The results for impressions mirrored the recall results (see Figure 1). Specifically, even though audience opinion predicted impressions, $\beta = .73$, $t(25) = 5.36$, $p < .001$, and message (noted above), message did not predict impressions while controlling for audience opinion, $\beta = .31$, $t(24) = 1.79$, *ns*. Furthermore, the effect of audience opinion on impressions remained strong, even after controlling for message, $\beta = .53$, $t(24) = 3.11$, $p < .01$.

2.3.4.3. Additional measures

Responses to each of the five exploratory questions were submitted to separate 2 (audience opinion) X 2 (audience size) between-subjects analyses of variance. Only three significant

effects emerged. First, participants who communicated to a positive audience (M = 5.73, SD = 1.29) rated the information about the target group as more sufficient than did participants who communicated to a negative audience (M = 4.91, SD = 1.47), $F(1, 59) = 6.77$, $p < .05$. Similarly, participants who communicated to a positive audience (M = 4.43, SD = 1.52) reported feeling that they were able to form a more complete impression of the target group based on the provided information than did participants who communicated to a negative audience (M = 3.70, SD = 1.43), $F(1, 59) = 4.85$, $p < .05$. Of more potential theoretical interest, communicators expressed greater trust in the 3-person audience (M = 4.78, SD = 1.53) than in the 1-person audience (M = 4.06, SD = 1.29), $F(1, 59) = 4.31$, $p < .05$.

2.4. DISCUSSION

Experiment 1 was designed to achieve two goals. The first goal was to determine whether the SIB effect would occur when the topic of communication was a group rather than an individual. In regard to this goal, the SIB effect was indeed found in the 1-person audience condition, thus demonstrating that the saying-is-believing paradigm is a useful tool for studying the development of stereotypes through communication.

The second goal of Experiment 1 was to explore the impact of audience size on the SIB effect. Based on the shared reality perspective, it was predicted that, compared to the 1-person audience, the 3-person audience would provide more social validation for communicators' messages and therefore produce a stronger SIB effect. However, this did not occur. Instead, in this condition the audience's opinion had direct, rather than message-mediated, effects on communicators' subsequent memories and impressions. This pattern of results is consistent with the alternative (informational influence) prediction that communicators would more readily

accept as valid the opinion of the 3-person audience than the opinion of the 1-person audience and would therefore rely directly on the 3-person audience's opinion rather than on their own message when thinking about the target group. Consistent with this view, communicators reported trusting the 3-person audience more than the 1-person audience.

The purpose of Experiment 2 was to investigate whether there are circumstances under which communicating with more than one person can produce the SIB effect. This effect would entail communicators relying on their messages, rather than directly on their audience's opinion, when producing their memories and impressions about the target.

One circumstance under which communicators might rely on their messages when communicating to a 3-person audience is when those messages have been strongly validated. As described earlier, Echterhoff et al.'s (in press) research demonstrated the power of social validation, in that communicators experienced the SIB effect when they received feedback that their audience successfully identified the target they were describing, but not when their audience identified the incorrect target. This suggests that providing explicit success feedback to people communicating to a 3-person audience might be sufficient to induce the SIB effect. Therefore, in Experiment 2, the 3-person condition from Experiment 1 was replicated with the exception that communicators were informed that their audience correctly identified the target they described in their messages. The purpose of this condition was to determine whether explicit success feedback would be strong enough to overpower the direct influence of a 3-person audience so that communicators would rely on their messages rather than the audience's opinion when generating memories and impressions of the target.

Because all participants retained in the analyses for Experiment 1 inferred that their entire audience understood their message, one might reason that receiving explicit social validation for

one's message would not produce the SIB effect in the proposed 3-person audience condition, because the SIB effect did not occur in the parallel condition in Experiment 1. However, inferring social validation for one's message may be a very different experience than receiving explicit confirmation of one's message. The confidence that communicators have in the validity of their message may be substantially bolstered by explicit feedback. Indeed, without explicit feedback, several communicators in the 3-person audience condition in Experiment 1 expressed doubt that their entire audience understood their message. This suggests that it may be possible to increase communicators' confidence in their message in the 3-person audience condition by providing them with explicit success feedback.

Although success feedback has been shown to be an important determinant of the SIB effect for a 1-person audience, it was unclear if it would be adequate to counter the persuasive power of a 3-person audience. Although success feedback may increase the perceived validity of communicators' messages, it may not detract from the perceived trustworthiness of the audience. Indeed, it may even enhance this trustworthiness (see Echterhoff et al., in press). And, if communicators continue to perceive the 3-person audience as a credible authority regarding the target group, communicators may continue to rely on their audience's opinion rather than their own messages when thinking about the target after the communication. To address this possibility, it was desirable to combine the success feedback with a reduction in the perceived credibility of the audience.

Previous research has demonstrated that individuals are more influenced by multiple people who independently espouse a common opinion, as in the 3-person audience condition of Experiment 1, than by a single individual who holds the same opinion (Wilder, 1977). The difference in persuasiveness likely results from perceivers assuming that multiple people hold

more diverse perspectives than individuals and draw upon different bodies of knowledge when creating their opinions (Harkins & Petty, 1987). Thus, the shared opinion of multiple people receives more attention than the opinion of a single person. Indeed, as noted earlier, describing multiple people in a way that decreases the perceived independence of their perspectives eliminates the advantage they have over a single person in a persuasion context (Harkins & Petty, 1987; Wilder, 1977, 1978, 1990). One way to decrease perceived independence, and thus decrease persuasiveness, is to describe multiple people as members of a group rather than as independent individuals. Individuals who are presented as members of a group have been shown to be less persuasive than the same number of independent individuals (Harkins & Petty, 1987; Wilder, 1977).

In Experiment 1, the 3-person audience allegedly consisted of independent individuals. As indicated previously, this condition was replicated in Experiment 2, with the exception that participants received explicit success feedback from the audience. To test the additive effect of reducing the credibility of the 3-person audience in Experiment 2, a second condition was included in which participants received success feedback from the audience *and* the audience was described as an interdependent group of three people who were working together on the experimental task (Harkins & Petty, 1987; Wilder, 1977). It was reasoned that describing the 3-person audience as an interdependent group would reduce its credibility and therefore encourage communicators to rely on their own messages about the target rather than the audience's opinion when thinking about the target, resulting in the SIB effect.

In sum, the purpose of Experiment 2 was to determine whether the SIB effect would occur with a 3-person audience (a) when audience members are *independent* and communicators

receive success feedback and/or (b) when audience members are *interdependent* and communicators receive success feedback. It was predicted that the likelihood of the SIB effect occurring would be greater in the latter than the former situation.

3. EXPERIMENT 2

3.1. METHOD

3.1.1. Participants

Ninety-four participants (72 females and 22 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) X 2 (audience interdependence: independent vs. interdependent) between-subjects experimental design. Participants were run individually and received partial course credit for participating. Each session took approximately 45 minutes.

3.1.2. Procedure

The procedure for Experiment 2 was identical to that used in Experiment 1 except for the following modifications. First, all audiences were portrayed as consisting of 3 people. Half the audiences were described as independent, as in Experiment 1, and half were described as interdependent. Specifically, the interdependent audiences were described as having watched the videotape of the target together and then having discussed the tape. It was also made clear that the interdependent audience would read participants' messages together and, as a team, guess which group was being described. Second, participants in Experiment 2 were informed that the

audience correctly identified the group participants described in their message. This information was provided after the filler task, before participants' memories and impressions of the target group were assessed.

In addition, a minor modification was introduced to reduce suspicion about the presence of the audience. In Experiment 1, the experimenter briefly stopped by a room on the way to the lab, allegedly to check on the audience. During debriefing several participants identified this act as suspicious, so this element was excluded from the protocol of Experiment 2. Instead, in Experiment 2 the experimenter gave participants the informed consent form and then excused herself for approximately 30 seconds, ostensibly to check on the other participants. Upon returning to the lab, the experimenter continued according to the procedure for Experiment 1.

The remaining changes involved modifications to the post-experimental survey, including manipulation checks and suspicion probes (Appendix E). For Experiment 2, the manipulation checks were administered in writing rather than orally. The manipulation check for audience opinion (item 6a) 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*). There were two manipulation checks for audience independence. The first question (item 7) asked whether the audience formed their impressions of the target by themselves as individuals or together as a group. The second question (item 8) asked participants to rate on a scale of 1 (*not at all*) to 7 (*very much*) the extent to which audience members influenced one another while forming their impressions of the target group.

Given that differential levels of trust were found for 1- and 3-person audiences in Experiment 1, an item measuring audience trust (item 2) was retained in the post-experimental survey for Experiment 2. In addition to this measure, several exploratory questions were added.

These assessed participants' perceived similarity with the audience (items 1, 3, and 4), perceived confidence in the impressions they formed of the target group (item 5), perceived competency of the audience (items 6b and 6c), perceived similarity among the audience members (items 9 and 10), and perceptions of how carefully the audience processed the information about the target group (item 11).

At the end of the post-experimental questionnaire, participants were asked to write down what they believed to be the purpose of the experiment as well as any additional questions or comments. Responses were then examined for suspicion about the experiment. Suspicion spontaneously expressed during the oral debriefing was also noted by the experimenter.

3.2. RESULTS

3.2.1. Manipulation and suspicion checks

As a manipulation check for audience opinion, communicators rated the extent to which the audience liked or disliked the target group. This item was submitted to a 2 (audience opinion) X 2 (audience interdependence) between-subjects ANOVA. Only the main effect of audience opinion was significant, $F(1, 90) = 216.05$, $p < .001$. Positive audiences ($M = 5.68$, $SD = 1.05$) received higher liking ratings than negative audiences ($M = 2.55$, $SD = 1.04$). The audience opinion manipulation therefore appeared to be successful.

To evaluate the effectiveness of the audience interdependence manipulation, participants were asked whether the members of their audience formed their impressions of the target by themselves as individuals or together as a group. Eighty-eight (94%) of the 94 participants answered this question correctly. As another measure of perceived interdependence, participants were asked to estimate the extent to which audience members influenced each others'

impressions of the target. A 2 X 2 ANOVA revealed that interdependent audiences (M = 5.38, SD = .89) were rated as influencing one another to a greater extent than independent audiences (M = 2.73, SD = 1.89), $F(1, 90) = 71.56$, $p < .001$. Neither the main effect of audience opinion nor the interaction was significant. The audience interdependence manipulation thus appeared to be successful.

Regarding suspicion, no participants correctly identified the purpose of the experiment. However, 4 (4%) participants expressed strong suspicion about the presence of the audience either in writing and/or during the debriefing. These participants were thus excluded from the analyses. Excluding these participants did not change the overall pattern of results reported for Experiment 2.

3.2.2. Coding

Measures of message, recall, and impression valence were created using the procedure from Experiment 1. Inter-coder reliability was acceptable for each type of passage: messages, $r(94) = .88$; recall, $r(94) = .74$; and impressions, $r(94) = .93$.[6] Correlations among the three measures are displayed in Table 3.

3.2.3. Audience tuning

Degree of audience tuning across conditions was assessed by conducting a 2 (audience opinion) X 2 (audience interdependence) between-subjects ANOVA with message valence as the dependent variable. As in Experiment 1, only the main effect of audience opinion was significant. Messages written for positive audiences (M = .87, SD = 1.47) were more positive

[6] As in Experiment 1, the standardized average code for impressions and the standardized Likert scale rating of participants' overall impression of the group were highly correlated [$r(94) = .80$] and were therefore averaged.

than messages written for negative audiences (M = -.50, SD = 1.45), $F(1, 86) = 19.67$, $p < .001$. Audience tuning therefore occurred in this study and was similar in magnitude for independent and interdependent audiences.

Table 3: Experiment 2 Correlations Among Message, Recall, and Impression Valence

	Independent Audience (N = 48)		Interdependent Audience (N = 42)	
	Recall	Impressions	Recall	Impressions
Message	.30*	.64***	.48**	.62***
Recall		.29*		.41**

Note. *$p < .05$, ** $p < .01$, ***$p < .001$

3.2.4. Testing for the SIB effect

The purpose of Experiment 2 was to determine whether the SIB effect would occur with a 3-person audience under certain circumstances, specifically when communicators received explicit validation of their message from three independent or interdependent people. As discussed earlier, the SIB effect is present when the effect of the audience's opinion on communicators' subsequent cognitions (i.e., recall and impressions of the target) is mediated by the message communicators share with the audience. Data for the independent and interdependent audience conditions were examined separately for the presence of the SIB effect following the guidelines suggested by Kenny et al. (1998) for establishing mediation.

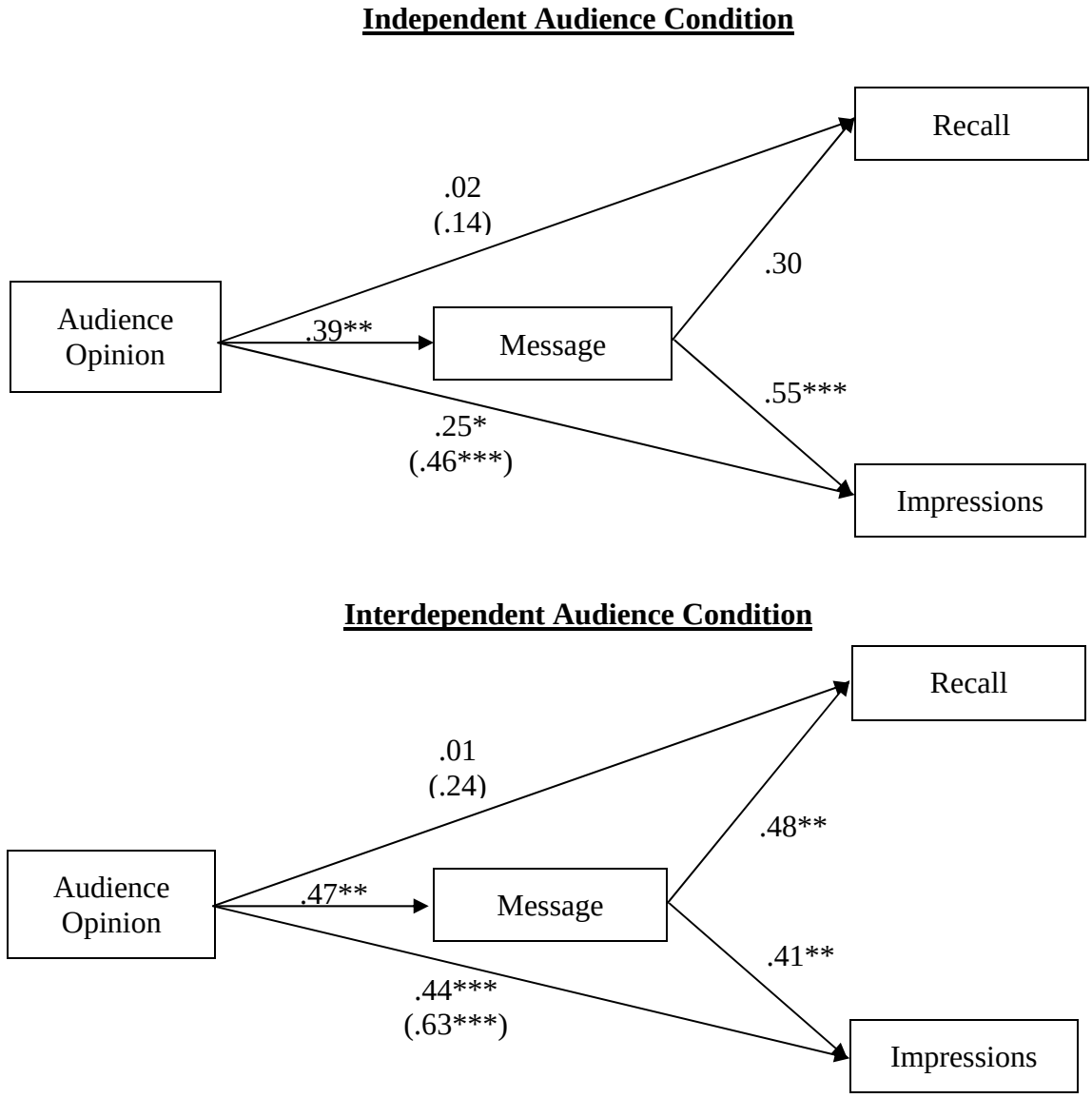
3.2.4.1. Independent audience condition

The independent audience condition was a replication of the 3-person audience condition from Experiment 1, with the exception that communicators were informed that audience members

correctly identified the target group described in communicators' messages. The recall data for this condition were examined first (see Figure 2). Although there was not a significant effect of audience opinion on recall (step 1 of mediation), $\beta = .14$, $t(46) = .93$, *ns*, there was a significant effect of audience opinion on message (step 2), $\beta = .39$, $t(46) = 2.83$, $p < .01$. However, when both message and audience opinion were included as predictors of recall (steps 3 and 4), neither variable significantly predicted recall: for message, $\beta = .30$, $t(45) = 1.92$, *ns*; for audience opinion, $\beta = .02$, $t(45) = 15$, *ns*. Thus, the SIB effect did not occur for recall in the 3-person independent audience condition.

Similar analyses were conducted for impressions (see Figure 2). First, there was a significant effect of audience opinion on impressions, $\beta = .46$, $t(46) = 3.49$, $p < .001$, and on message, as noted above. Furthermore, when both message and audience opinion were included as predictors of impressions, each was significant: for messages, $\beta = .55$, $t(45) = 4.62$, $p < .001$; for audience opinion, $\beta = .25$, $t(45) = 2.09$, $p < .05$. Because the effect of audience opinion on impressions continued to be significant when controlling for message, message did not fully mediate the relationship between audience opinion and impressions. However, the effect of audience opinion on impressions was significantly reduced when controlling for message, indicating partial mediation, $Z = 2.42$, $p < .05$. The SIB effect therefore occurred for impressions in the 3-person independent audience condition.

Figure 2: Experiment 2 Path Analyses



Experiment 2: Standardized beta coefficients for path analyses in independent and interdependent 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. *p < .05, **p < .01, ***p < .001

3.2.4.2. Interdependent audience condition

In the interdependent audience condition, the audience consisted of three people working together as a group, and communicators received feedback that the audience successfully identified the group described in communicators' messages. Whether the SIB effect occurred for recall was assessed first (see Figure 2). As in the independent audience condition, the effect of audience opinion on recall (step 1 of mediation) was not significant, $\beta = .24$, $t(40) = 1.54$, *ns*, but there was a significant effect of audience opinion on message (step 2), $\beta = .47$, $t(40) = 3.38$, $p < .01$. Furthermore, the effect of message on recall when controlling for audience opinion was significant (step 3), $\beta = .48$, $t(39) = 2.99$, $p < .01$. Finally, when controlling for message, the non-significant effect of audience opinion on recall was further reduced, $\beta = .01$, $t(40) = .08$, *ns*. According to the Sobel test, the effect of audience opinion on recall was significantly reduced when controlling for message, $Z = 2.24$, $p < .05$. Thus, the SIB effect was present for recall in the 3-person interdependent audience condition.

Similar analyses were conducted for impressions (see Figure 2). First, there was a significant effect of audience opinion on impressions, $\beta = .63$, $t(40) = 5.10$, $p < .001$, and on message, as noted above. Furthermore, when both messages and audience opinion were included as predictors of impressions, each was significant: for messages, $\beta = .41$, $t(39) = 3.28$, $p < .01$; for audience opinion, $\beta = .44$, $t(39) = 3.47$, $p < .001$. 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, $Z = 2.35$, $p < .05$. The SIB effect was therefore present for impressions in the 3-person interdependent audience condition.

3.2.4.3. Ancillary measures

Responses to each item from the post-experimental survey were submitted to a 2 (audience opinion) X 2 (audience interdependence) between-subjects ANOVA. There were no significant differences between independent and interdependent audiences for any of the items, nor were there any significant interactions. There were, however, three main effects of audience opinion. Specifically, communicators perceived the impressions of positive audiences ($M = 5.30$, $SD = 1.21$) to be more accurate than the impressions of negative audiences ($M = 4.60$, $SD = 1.25$), $F(1, 86) = 5.50$, $p < .05$. Similarly, positive audiences ($M = 5.49$, $SD = .99$) were perceived as more competent than negative audiences ($M = 4.72$, $SD = .95$), $F(1, 86) = 13.95$, $p < .001$, and as having processed the information about the target group more carefully [means (SD) = 5.33 (1.06) and 4.81 (1.25), respectively], $F(1, 86) = 4.24$, $p < .05$.

3.3. DISCUSSION

The goal of Experiment 2 was to test whether the SIB effect could occur for people communicating with a 3-person audience. Two conditions likely to facilitate the SIB effect were employed. First, some communicators received explicit feedback that an audience consisting of three independent people correctly identified the group communicators described in their message. Second, in addition to receiving success feedback, other communicators believed that their audience consisted of three people working together as a group as opposed to three isolated

individuals. The latter manipulation was intended to make the audience less influential (cf. Harkins & Petty, 1987; Wilder 1977, 1978), prompting communicators to rely on their own message, rather than on the audience's opinion, when thinking about the target.

The two conditions yielded somewhat different results. When success feedback was provided to communicators interacting with an independent 3-person audience, mixed evidence for the SIB effect was obtained. The effect was non-significant for the recall measure and was significant for impressions. In contrast, when success feedback was combined with an interdependent 3-person audience, a stronger pattern of results emerged. The SIB effect was present for both recall and impression measures. Taken together, these findings demonstrated that it is possible for communicators to experience the SIB effect when communicating to audiences larger than one person.

The somewhat stronger evidence for the SIB effect with interdependent than with independent audiences is consistent with past research showing that groups of people are less influential than the same number of independent individuals (e.g., Wilder, 1977). Although it has been suggested that the enhanced persuasiveness of independent individuals is due to differences in perceived credibility (Wilder, 1978) or homogeneity (Harkins & Petty, 1987; Wilder, 1990) between individuals and groups, no differences of this nature were found between the independent and interdependent audience conditions of the current study. Indeed, the post-experimental questionnaire revealed that communicators perceived the independent and interdependent audiences as comparably trustworthy, competent, and homogeneous. One possible explanation for the similar perceptions of the two audiences rests on the timing of the post-experimental questionnaire, which was administered after participants had communicated to their audience, received success feedback, and reported their memories and impressions of the

target group. At that point in the study, differences in perceptions of the two audiences that existed earlier might well have dissipated. The questionnaire was administered after the dependent measures had been collected to avoid sensitizing participants to the purpose of the experiment and risk altering the content of their messages and reported memories and impressions of the target.

4. GENERAL DISCUSSION

The current research expands the literature on the SIB effect in a number of important ways. First, it establishes that the SIB effect can occur when the topic of communication is a group rather than an individual, thus providing a useful paradigm for studying the development of stereotypes through communication. Second, it demonstrates that the SIB effect is sensitive to characteristics of the audience, namely audience size and independence/interdependence. Specifically, in the absence of explicit feedback from the audience, the SIB effect did not occur with an audience consisting of three independent people. Instead, the audience's opinion directly affected communicators' memories and impressions of the target. When communicators received success feedback from an audience of three independent people, mixed evidence for the SIB effect emerged. Although the SIB effect occurred for impressions, it did not occur for memories. Finally, strong evidence of the SIB effect occurred when communicators received success feedback from an audience consisting of three interdependent people. In this situation, the SIB effect occurred for both impressions and memories. Thus, whereas success feedback does not induce a reliable SIB effect when the audience consists of three independent people, such feedback does induce a reliable effect when the audience consists of three interdependent people, similar to the case in which the audience consists of a single individual.

The effect of audience interdependence in the absence of explicit success feedback would be an interesting issue to explore in future research. It is possible that describing a 3-person audience as interdependent is sufficient for inducing the SIB effect, in which case providing

explicit feedback from the audience would not be necessary. This possibility was not examined in Experiment 2 because the purpose of that study was to determine whether the SIB effect could occur with a 3-person audience under circumstances that have been shown to increase the likelihood of this effect, namely when participants receive explicit success feedback (Echterhoff et al., in press). Therefore, combining audience interdependence with success feedback, rather than testing its isolated effect, seemed most appropriate.

4.1. THEORETICAL IMPLICATIONS

Given that this research was stimulated by the shared reality explanation of the SIB effect, it may be useful to consider how the current findings pertain to the issue of whether the SIB effect is driven by the establishment of shared reality. One might argue that the results of Experiment 1 suggest that processes other than the development of shared reality are operating for people who communicate to 3-person (independent) audiences because the traditional SIB effect did not emerge in that condition. It seems that instead of actively developing a shared reality with the audience, as communicators in the 1-person audience condition appeared to do, communicators in the 3-person audience condition readily adopted the perspective of their audience as reality. However, this behavior could be viewed as reflecting one type of shared reality given that communicators and their audiences converged on the same perception of the target. So, rather than dismissing shared reality as relevant to the 3-person audience condition in Experiment 1, it is possible that shared reality was in fact achieved in that condition, but it was achieved more passively for these communicators than for those communicating with one person. In support of this possibility, when steps were taken in Experiment 2 to reduce the direct influence of the 3-person audience (i.e., by making the members interdependent) and to increase the importance of

communicators' messages (i.e., by providing success feedback from the audience), communicators experienced the SIB effect. Thus, people communicating to 3-person audiences can passively accept the reality of their audience, or they can actively develop shared reality when the circumstances call for it.

Germane to this discussion is the assumption that communicators in the SIB paradigm have the desire to be accurate in their descriptions and perceptions of the target group. Indeed, epistemic motivation is seen as an important reason people seek shared reality with others (Hardin & Conley, 2001; Hardin & Higgins, 1996). Communicators will therefore engage in actions that they believe increase their likelihood of being correct. In some cases that involves relying completely on their audience for information, and in other cases it involves constructing a version of reality in collaboration with their audience. Both cases were demonstrated in the current set of experiments.

4.2. FUTURE DIRECTIONS

The current experiments suggest several possibilities for future research. For instance, the issue of whether communicators develop shared reality with their audience through active or passive means brings to mind the distinctions between systematic and heuristic processing (Chaiken, 1980; Chen & Chaiken, 1999) and the central and peripheral routes to persuasion (Petty & Cacioppo, 1984). It could be that, with a 1-person audience, communicators engage in systematic processing of the target information, or follow the central route of persuasion. In contrast, due to their high degree of trustworthiness, 3-person audiences may induce heuristic processing in communicators, or prompt them to follow the peripheral route to persuasion. One way to test whether 1- and 3-person audiences are indeed prompting different types of information

processing strategies in communicators is to present communicators with descriptions of a target group that contain either weak or strong evidence that the audience's positive or negative opinion of the target is correct. For example, the weak description could contain four pieces of information, each of which could be interpreted as positive or negative, and the strong description could contain two pieces of ambiguous information and two that clearly confirm the audience's opinion of the target. If people communicating to 1-person audiences are engaging in systematic processing, they should only experience the SIB effect when the original target information strongly confirms the audience's opinion. If people communicating with 3-person audiences are engaging in heuristic processing, their memories and impressions of the target group should be directly affected by the audience's opinion regardless of whether the original target information weakly or strongly confirms the audience's opinion.

One potential weakness in the above reasoning comes from examining the target information used in the current set of studies (see Appendix B). Consistent with past research on the SIB effect (e.g., Echterhoff et al., in press), the target information in the current research was ambiguous, such that it could be evaluated in a positive or negative manner. This could be construed as weak evidence that the audience's opinion was correct, which means that communicators in the 1-person audience experienced the SIB effect when the evidence for the audience's opinion was weak, contrary to the prediction outlined above. To test the predictions in the previous paragraph, rather than presenting communicators with weak or strong evidence in favor of their audience's opinion, it may be necessary to present communicators with strong evidence that either supports or opposes their audience's opinion. For example, strong supportive evidence could consist of two ambiguous and two audience-consistent pieces of information about the group, whereas strong opposing evidence could consist of two ambiguous and two

audience-inconsistent pieces of information. If people communicating with a 1-person audience are engaging in systematic processing, they should only experience the SIB effect when confronted with evidence that supports, rather than refutes, their audience's opinion. When confronted with the opposing evidence, they should recognize the inconsistency between the audience's opinion and the target description and base their judgments of the target on the target description rather than on the audience's opinion. In contrast, if people communicating with a 3-person audience are engaging in heuristic processing, they should not attend to any inconsistency between the target description and the audience's opinion, and therefore experience direct effects of the audience's opinion when confronted with information that supports or opposes the audience's opinion.

An alternative way to test whether 1- and 3-person audiences elicit different paths to persuasion would be to introduce a task that induces high cognitive load while communicators process the information about the target. The ability to engage in systematic processing should be reduced in the presence of a high cognitive load, which means that communicators in the 1-person audience condition should experience direct effects of their audience's opinion rather than the typical SIB effect. Communicators in the 3-person audience condition, if they indeed engage in heuristic processing, should not be affected by the high cognitive load.

Two additional possibilities for future research are based on the assumption that people seek shared reality for the purpose of gaining knowledge about the world. First, if this assumption is true, the confidence of audience members with whom one communicates about a topic should affect the degree to which one values their input, with less confident people eliciting less tuning and a weaker SIB effect from communicators. Second, if people seek shared reality for knowledge purposes, then obtaining validation from everyone with whom one communicates

should generate more confidence in one's beliefs than obtaining validation from only some of the people with whom one communicates. This could be tested, for example, by having people communicate with four-person audiences and then providing feedback that all four people confirmed, all four disconfirmed, or two confirmed and two disconfirmed the communicator's perspective. The SIB effect should be stronger for communicators whose perspective is confirmed by more people.

Another line of future research could pursue additional steps to tailor the SIB paradigm for use in studying the development of stereotypes. The current research completed the crucial task of demonstrating that the SIB effect can occur when the topic of communication is a group rather than an individual, but there are several ways in which the task could be further modified to make it more useful in studying stereotype development. For example, an ideal goal would be to use the SIB paradigm to study how stereotypes about meaningful social groups, rather than unfamiliar fictitious groups, are affected by communicating to others with differing opinions. To accomplish this, the information communicators read about the target group would have to be modified so that it describes a meaningful social group (e.g., students at a rival school, a sorority or fraternity on campus, etc.). One issue to consider in modifying the target materials is whether the materials should describe characteristics of the group as a whole, as in the current study, or individual members of the group. Previous research has shown that people develop different kinds of stereotypes if they learn about individual members of a group as opposed to characteristics of the group as a whole. Specifically, learning about individual group members, as opposed to the overall group, results in perceiving a group to be more variable (i.e., heterogeneous; Park & Hastie, 1987) and more 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 that this is more likely to happen for groups that are seen as being more entitative (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) would thus be an interesting possibility for future research using the SIB paradigm.

In adapting the SIB paradigm for studying how communication affects beliefs about existing social groups, one will have to consider the role of communicators' existing beliefs about the target group. The current research has shown that participants in the SIB paradigm are affected by their audience's opinion about an unfamiliar group, but little is known about how they will behave when they have pre-existing beliefs about a target group. One possibility is that communicators will tune to the opinion of the audience out of politeness, whether or not they agree with the audience's opinion of the group. However, if the beliefs of communicators and audiences are discrepant, communicators may retain their pre-existing beliefs about the target even after tuning to the audience's opinion. This possibility could arise if communicators do not perceive audiences as trustworthy when they hold beliefs that are different from those of the communicators. Initial difference in beliefs about the target group could preclude communicators from seeking and developing a shared reality with the audience. Of course, in conjunction with communicators' prior beliefs, it is important to consider communicators' desire to form a shared reality with their audience. If the audience is particularly desirable in some way (e.g., high status, attractive), perhaps communicators will abandon prior beliefs about the target group in the effort to develop a shared reality with their audience.

Finally, when dealing with beliefs about meaningful social groups, one must also consider prevailing norms in the broader society about acceptable beliefs about the target group. Specifically, one must consider whether overtly negative beliefs about the group are sanctioned or discouraged by society. Getting communicators to experience the SIB effect when there are clear norms about what beliefs are acceptable to hold about the target group may prove to be difficult. For example, overt racism against African Americans is strongly discouraged in American society. If communicators are faced with talking about African Americans to an audience that clearly does not like this target group, communicators are faced with the decision either to develop a localized shared reality with their audience that is not acceptable by society's standards or to reject a shared reality with their audience in favor of acting in accordance with widespread norms. Although no research has yet been conducted to explore what choice most communicators would make in this situation, research on stereotype perpetuation via communication chains suggests that communicators may reject their audience in favor of society's norms. Specifically, Lyons and Kashima (2003) demonstrated that, when communicators believe that a stereotype of a group is endorsed by the surrounding community, they tend to transmit more stereotype-consistent than -inconsistent information about that group. In contrast, if communicators believe that the stereotype is rejected by the surrounding community, they tend to transmit more stereotype-inconsistent than -consistent information. This pattern of results occurs whether a communicator's immediate audience endorses or rejects the stereotype, which suggests that communicators favor widespread norms over the beliefs of their immediate audience.

One might also pursue a line of research that investigates the elements of social validation that are necessary to elicit the SIB effect. In previous (Echterhoff et al., in press) and

the current research, social validation was manipulated by informing communicators that their audience had identified the topic of communication based on communicators' descriptions, implying that the audience adequately understood communicators' messages. Learning that one's message is clear enough to be understood by an audience is one type of social validation. A different type of social validation is provided when an audience explicitly accepts the content of the message as true. In existing studies on the SIB effect, it is implied that the audience accepts as true the message provided by communicators because communicators tune their messages to match the opinion of the audience. Previous research thus confounds understanding and acceptance as sources of social validation. Understanding the content of a communicator's message, however, does not require that an audience accept the message. For example, an audience member could conceivably identify the target being described by a communicator (displaying understanding), but also express that the communicator's description of the target was overly positive or negative (displaying non-acceptance). In this case, non-acceptance of the message may prevent the SIB effect from occurring, even though the audience understood the message. Similarly, accepting a communicators' message as true does not require that an audience fully understand the message. For example, it is possible for an audience to express acceptance of a communicator's message as an accurate description, but then fail to identify the target that the communicator was attempting to describe. In this case, having acceptance of one's message may not produce the SIB effect because it was not accompanied by understanding. The independent effects of having one's message understood versus accepted by an audience have not yet been delineated. Examining this issue is critical for increasing what is understood about the circumstances under which shared reality is likely to develop.

APPENDIX A: PILOT SURVEY, PART 1

The purpose of this study is to learn about how people form impressions of social groups. You will be given information describing 6 different social groups and will be asked a question about each group.

Please work through the questionnaire carefully. If you have questions at any point, please raise your hand and I will help you.

Thank you for your participation.

Please provide the following information:

Age: _____

Gender: _____

Race/ethnicity: _____

How much would you probably like each of the six different groups of people described below? Indicate your judgment by circling a number below each group's description.

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.

How much would you probably like the group described above?

-5	-4	-3	-2	-1	0	1	2	3	4	5
dislike very much										like very much

2. The members of this group have their own standards of behaving. As students they would tell on fellow classmates whom they saw break school rules, like cheating on tests. In fact, they claimed that never once in their lives have they thought about cheating.

How much would you probably like the group described above?

-5	-4	-3	-2	-1	0	1	2	3	4	5
dislike very much										like very much

3. 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 eat in fashionable ethnic restaurants. In social situations, they often talk at length about foreign cultures and art.

How much would you probably like the group described above?

-5	-4	-3	-2	-1	0	1	2	3	4	5
dislike very much										like very much

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.

How much would you probably like the group described above?

-5	-4	-3	-2	-1	0	1	2	3	4	5
dislike very much										like very much

(continued on next page)

5. These group members spend a great amount of their time in search of what they like to call excitement. They have already climbed Mt. McKinley, done some skydiving, shot the Colorado rapids in a kayak, driven in a demolition derby, and piloted a jet-powered boat -without knowing much about boats. They have been injured, and even risked death, a number of times.

How much would you probably like the group described above?

-5	-4	-3	-2	-1	0	1	2	3	4	5
dislike very much										like very much

6. 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.

How much would you probably like the group described above?

-5	-4	-3	-2	-1	0	1	2	3	4	5
dislike very much										like very much

APPENDIX B: PILOT SURVEY, PART 2

We are researching how people form impressions of social groups. You will be given information describing a small group of friends and will be asked a few questions about the group.

Please work through the questionnaire carefully. We really appreciate your help with our research.

Thank you for your participation!

Please provide the following information:

Age: _____

Gender: _____

Race/ethnicity: _____

Below is a description of a small group of friends. Please read the description carefully and then answer the questions below. Indicate your answers by circling a number on the scale below each question.

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.

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 eat in fashionable ethnic restaurants. In social situations, they often talk at length about foreign cultures and art.

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.

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.

1. How much would you probably like the group described above?

-5	-4	-3	-2	-1	0	1	2	3	4	5
dislike very much										like very much

2. Does the description convey something positive or negative about the group?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative										very positive

3. What is your overall impression of the group?

-5	-4	-3	-2	-1	0	1	2	3	4	5
very negative										very positive

APPENDIX C: EXPERIMENT 1 QUESTIONNAIRE

Please answer the following questions.

1. Was the information you were given about Group B sufficient to write a description of Group B?

1	2	3	4	5	6	7
not sufficient at all						completely sufficient

2. Were you able to form a complete impression of Group B based on the information you were given?

1	2	3	4	5	6	7
not at all						very much

3. If you were going to do the study again but with information about a different group (for example, Group C or D), how much would you like to describe the new group to the same audience (who you sent the message to) from today's session?

1	2	3	4	5	6	7
not at all						very much

4. How much do you think you can trust the judgement of your audience (who you sent the message to) from today's session?

1	2	3	4	5	6	7
not at all						very much

5. How much would you like to meet your audience (who you sent the message to) from today's session?

1	2	3	4	5	6	7
not at all						very much

APPENDIX D: EXPERIMENT 1 MANIPULATION CHECKS

Questions to be asked orally by experimenter.

1. How many people were in the other room to receive your description of Group B? _____

2a. If answer to 1 = 1:
Did the person in the other room like or dislike Group B?

___ liked the group ___ disliked the group

2b. If answer to 1 = 2:
Did both people in the other room like Group B, both dislike Group B, or did one like Group B and one dislike Group B?

___ both liked the group
___ both disliked the group
___ one disliked the group but one liked the group

2c. If answer to 1 = 3:
Did all the people in the other room like Group B, all dislike Group B, or were their opinions split about Group B?

___ all three liked the group
___ all three disliked the group
___ split

If split: Did two people like Group B and one dislike Group B, or did two people dislike Group B and one like Group B?

___ two people liked the group, but one disliked the group
___ two people disliked the group, but one liked the group

3. Of the person/people in the other room, how many do you think correctly identified the group that you described as Group B?

___ 0 ___ 1 ___ 2 ___ 3

4. On a scale of 1 to 7 where 1 = not at all confident and 7 = very confident, how confident are you in your estimate of how many people correctly identified Group B?

1	2	3	4	5	6	7
not at all confident						very confident

5. If you had to guess the gender of the person or people in the other room, what would you guess?

___ male
___ female
___ one male, one female
___ two males, one female
___ two females, one male
___ don’t know

APPENDIX E: EXPERIMENT 2 QUESTIONNAIRE

Please answer the following questions.

1. To what extent do you think that you and the people in the other room have similar impressions of Group B?

1	2	3	4	5	6	7
Not at all similar						Very similar

2. How much do you think you can trust the judgment of the people in the other room?

1	2	3	4	5	6	7
Not at all						Very much

3. Before you arrived today, the people in the other room evaluated 3 additional groups (Groups A, C, and D). If you were to learn about those groups, how much do you think your impressions of those groups would be similar to those of the people in the other room?

1	2	3	4	5	6	7
Not at all similar						Very similar

4. To what extent do you think that you and the people in the other room have similar values in general?

1	2	3	4	5	6	7
Not at all						Very much

5. How confident do you feel that your impressions of Group B are accurate?

1	2	3	4	5	6	7
Not at all confident						Very confident

6. Before you arrived today, the people in the other room formed an impression of Group B.

a. To what extent did the people in the other room like or dislike Group B?

1	2	3	4	5	6	7
Disliked very much						Liked very much

b. How accurate do you think their impression of Group B is?

1	2	3	4	5	6	7
Not at all accurate						Very accurate

c. How competent do you think they are to evaluate Group B?

1	2	3	4	5	6	7
Not at all competent						Very competent

7. Did the people in the other room form their impressions of Group B by themselves as individuals or together as a group?

_____ By themselves as individuals
_____ Together as a group

8. To what extent do you think the people in the other room influenced one another when they formed their impression of Group B?

1	2	3	4	5	6	7
Not at all						Very much

9. How similar do you think the people in the other room are in the way they generally evaluate groups?

1	2	3	4	5	6	7
Not at all similar						Very similar

10. To what extent do you think the people in the other room share the same values?

1	2	3	4	5	6	7
Not at all						Very much

11. Before you arrived, the people in the other room watched a video of Group B. How carefully do you think they thought about this video when making their evaluations of Group B?

1	2	3	4	5	6	7
Not at all carefully						Very carefully

What do you think the purpose of this experiment was?

If you have any other questions or comments about the experiment, please write them below.

Please provide the following background information about yourself:

Age_____

Gender _____

Race/ethnicity:

____ Asian
____ Black/African American
____ Hispanic/Latino
____ White/Caucasian
____ Other (please specify) _____

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