Audience-Tuning Effects on Memory: The Role of Shared Reality

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After tuning to an audience, communicators' own memories for the topic often reflect the biased view expressed in their messages. Three studies examined explanations for this bias. Memories for a target person were biased when feedback signaled the audience's successful identification of the target but not after failed identification (Experiment 1). Whereas communicators tuning to an in-group audience exhibited the bias, communicators tuning to an out-group audience did not (Experiment 2). These differences did not depend on communicators' mood but were mediated by communicators' trust in their audience's judgment about other people (Experiments 2 and 3). Message and memory were more closely associated for high than for low trusters. Apparently, audience-tuning effects depend on the communicators' experience of a shared reality.

Keywords: communication, audience tuning, memory, shared reality

Successful communication requires that communicators take into account each others' characteristics, such as the other's presumed knowledge, intentions, and attitudes (e.g., Clark & Marshall, 1981; Higgins, 1981; Krauss & Fussell, 1991; McCann & Higgins, 1992; Mead, 1934; Rommetveit, 1974). One of the ways in which communicators express such mutual appreciation is to adapt their messages to the audience, a phenomenon referred to as *audience design* (e.g., Clark & Murphy, 1982; Fussell & Krauss, 1989) or *audience tuning* (Higgins, 1992, 1999). For example, when a professor believes that another professor in her department likes a new graduate student, he or she is likely to recount the student's behavior in one of her classes in a relatively favorable light. It is intriguing that such processes of audience tuning not only affect the messages people transmit to their audience but also shape their subsequent representations and memories of the message topic (e.g., Chiu, Krauss, & Lau, 1998; Higgins & Rholes, 1978; Manis, Cornell, & Moore, 1974).

A striking example of such audience-tuning influences can be found in research on the "saying-is-believing" effect (Higgins & Rholes, 1978). In these studies, participants were asked to describe a target person on the basis of a short essay that contained evaluatively ambiguous behaviors. They were told that it was their audience's task to identify the target person on the basis of their message description of him. Before producing their message, participants were informed that their audience either liked or disliked the target person. This information about the audience's attitude triggered audience tuning: The communicators created evaluatively positive messages for an audience with a positive attitude and evaluatively negative messages for an audience with a negative attitude. It is important to note that the communicators' subsequent recollections of the original information about the target's behaviors were biased by the evaluative tone of their previous messages, even when they were first asked to recall the original information 2 weeks later. That is, communicators' memories for the topic still reflected the biased view they had previously expressed in their messages.

Several studies have replicated the finding that communicators end up believing and remembering what they said rather than what they originally learned about the target person's behaviors (Higgins & McCann, 1984; Higgins, McCann, & Fondacaro, 1982, 1991; Sedikides, 1990; Todorov, 2002; for reviews, see Higgins, 1992, 1999; McCann & Higgins, 1992). Given that the existence of the phenomenon has been established, the ensuing questions are as follows: When and why do communicators draw on their audience-congruent message rather than on the original passages when remembering the original information? What processes are responsible for this intriguing effect of communication on subsequent cognition? More than 25 years after the seminal demonstration of this phenomenon, the investigation of the underlying mechanisms still presents a challenge to both social and memory psycholo-

gists. Existing accounts have, for the most part, dealt with information processing before or during message production. We briefly outline these approaches before suggesting an alternative account that instead emphasizes social and interpersonal processes.

Explanations for the Memory Bias From Audience Tuning

Different explanations for the impact of audience tuning on communicators' subsequent memories have been discussed in the literature. Early studies (Schramm & Danielson, 1958; Zimmerman & Bauer, 1956) seemed to suggest that merely knowing the attitude of an anticipated audience affects what participants remember from an ambiguous stimulus text. However, Higgins and Rholes (1978) found that the saying-is-believing effect disappeared when participants did not actually produce the message they anticipated transmitting to their audience. This result indicated that participants' mere knowledge of the audience attitude is not itself sufficient to drive the effect (also see Higgins, 1992).

Other accounts have focused on information-processing mechanisms during message production, such as encoding organized by biased verbal labels (Higgins & Rholes, 1978) or selective rehearsal of the target information (Pasupathi, Stallworth, & Murdoch, 1998). From this perspective, the production of a biased message about a communication topic is responsible for the saying-is-believing effect, rendering the audience-congruent aspects of the original stimulus information more accessible than the audience-incongruent aspects. Such a view is consistent with prominent theoretical models (e.g., Higgins, 1996; Mussweiler, 2003) and numerous findings in social cognition (e.g., Bargh, Bond, Lombardi, & Tota, 1986; Higgins, Rholes, & Jones, 1977; Srull & Wyer, 1979), which testify to the important role of information activation and accessibility in responses to stimuli.

However, biased message production and selective rehearsal of audience-congruent information may not be sufficient for audience tuning to affect subsequent memories of the communication topic (here, the target person). It is conceivable that even though a communicator produces a biased account, he or she may not regard it as a reliable or valid representation of the target person. Imagine that after sending the audience-congruent message, the audience signals disagreement or does not seem to accept the message (see Clark & Brennan, 1991). In this case, the audience's behavior is apparently inconsistent with his or her attitude. After the audience has displayed such inconsistency concerning the evaluation of the target person, the communicator is left wondering whether the evaluative tone of the message reflects the actual characteristics of the target person. Thus, the audience-tailored view expressed in the message would cease to appear as reliable. Also, communicators may tune their messages to comply with rules of politeness, etiquette, or political correctness. For instance, White American communicators may feel they are obligated by societal norms to tune to a Black American addressee (Dovidio, Kawakami, & Gaertner, 2002; see also Dovidio, Gaertner, Kawakami, & Hodson, 2002). Learning that a Black addressee has a favorable attitude toward a third individual (a target person), Whites may perform audience tuning to express their courteous consideration of that attitude and to appear as polite and unprejudiced. In doing so, they overtly produce audience-tailored messages. However, White communicators may not trust or rely on their Black audience's view, possibly because of covert intergroup biases or unfavorable attitudes toward Blacks (see, e.g., Dovidio, Gaertner, et al., 2002). As a result, they would not regard their overt message as a valid account of the target person. In these two examples, the view a communicator voices about the target person may not appear to her or him as "real," either because of the audience's feedback, rendering the audience-tailored view unreliable, or because of the audience's perceived inaptness as a source of valid information about the target person. As a result, communicators' memories should not be biased by their audience-congruent messages to the same extent as in the original saying-is-believing studies.

What is crucial in these examples is the role of the communication partner (i.e., the audience) in the subjective representation of the biased message as reliable, valid, or "real." Drawing attention to this interpersonal dimension of reality construction, Higgins (1992, 1999) has argued that communicators often produce audience-congruent messages to form a representation that is shared with the audience. By virtue of being shared with another person, the message is experienced as a reliable or valid account of the target person. From this perspective, the intended and successful creation of a shared reality with the communication partner is a central mechanism driving the audience-tuning effect on subsequent representations of the communication topic (Hardin & Higgins, 1996). Representations of the target person, then, are biased by the previous production of audience-congruent messages to the extent that communicators experience a shared reality with their audience in the process of communication. The present research was designed to explore this account of the saying-is-believing effect for communicators' memories of a target person. In the next section, we briefly review relevant research that allows us to discern different preconditions, functions, and consequences of reality sharing relevant to the domain of our investigation.

Socially Shared Reality: Constructing Reliable and Valid Representations of the World

Research in the social sciences and social psychology is replete with theoretical accounts and empirical statements emphasizing the role of interpersonal processes in the creation of psychological reality (e.g., Bar-Tal, 2000; Cooley, 1902/1964; Festinger, 1950, 1954a, 1954b; Hardin & Higgins, 1996; Heider, 1958; Lau, Chiu, & Lee, 2001; Mead, 1934; Merton & Kitt, 1950; Newcomb, 1959; Resnick, Levine, & Teasley, 1991; Rommetveit, 1974; Schachter, 1959; Sherif, 1935, 1936; Zajonc & Adelmann, 1987; for an overview, see Thompson & Fine, 1999). For instance, Festinger (1950) argued that individual beliefs and opinions are experienced as valid when they are shared by others who are sufficiently similar to oneself. It appears that shared meaning construction is initiated when external reality is ambiguous and difficult to grasp, such as when no physical reality is available to determine the validity of one's beliefs (for empirical evidence, see, e.g., Byrne & Clore, 1967, and Byrne, Nelson, & Reeves, 1966).

A classic demonstration of reality sharing has been reported by Sherif (1936) in his work on the autokinetic effect. This effect refers to the compelling perceptual illusion that a fixed light in a completely darkened room appears to move in an erratic way, presumably because of humans' saccadic eye movements. Sherif's central finding was that when a group of participants came together in the lab, their judgments about the (nonexistent) movement of the light quickly converged on a shared norm. It is

important to note that significant variation among different group norms was observed, suggesting that the subjective view of reality was guided by whatever consensus happened to emerge, a process greatly independent from physical reality. Participants adhered to the shared norms even when they subsequently made their estimates in private. Also, the norms often persisted across different generations of participants, indicating that once a socially shared reality is achieved, it can be maintained with great stability.

Several other landmark approaches in social psychology have, more or less explicitly, assumed that human beings depend on one another as sources of information about countless aspects of the environment (e.g., Asch, 1952; Heider, 1958; Kelley, 1955; Lewin, 1947; Newcomb, 1959; Schachter, 1959). In some of the original and subsequent work, a distinction has been drawn between the process of constructing a view with the help of others versus verifying an existing view by checking it against the views of others (Fazio, 1979; Mettee & Smith, 1977; Newcomb, 1959). Newcomb (1959), for instance, distinguished between others as "suppliers of new information" and others as "confirmers or correctors of old information" (p. 386). Drawing an analogy to two main stages of the research process, Fazio (1979) suggested that the construction of representations corresponds to the exploratory stage whereas the confirmation corresponds to the hypothesis-testing stage. Thus, when people lack desired information about an entity, they refer to others for the construction of a valid view. Once people have developed a view, they refer to others mainly for the validation of that view. It is important to note that participants in saying-is-believing studies have not already formed an evaluative impression of the target person when they learn about the audience's attitude. Thus, the present research focused on the first stage, that is, processes of constructing a view of a target entity, rather than on verifying or cross-checking a previously established view.

Drawing on the rich social–psychological tradition, Hardin and Higgins (1996) have provided a comprehensive account of shared reality, covering a wide range of phenomena such as communication, self-regulation, stereotyping, attitude change, and group processes.[1] As in Festinger's (1950) early approach, Hardin and Higgins argued that the creation of a socially shared reality is a particular exigency when people experience uncertainty or ambivalence about a state or object. The authors used a methodological metaphor to illustrate the functions or motives of reality sharing: Shared reality serves to establish the *reliability* and *validity* of representations of the world. First, a shared reality provides representations that are assumed to be stable over the course of time. Once people have created a shared representation, they can expect that others will exhibit the established view on other occasions as well, that is, that an assessment of the world can be replicated and is, therefore, not capricious. Shared reality thus renders representations reliable. Second, when representations are socially shared, they are perceived as corresponding to a real aspect of the world. Thus, one can feel certain that one's representations reflect the actual properties of the objects to which they refer. In this case, just as in empirical research, representations can be regarded as valid.

Hardin and Higgins (1996) also called attention to an important interpersonal consequence of reality sharing (see Hardin & Conley, 2001). When people establish a shared reality with another person, they can trust the other's view of things, allowing them to predicate their own judgment and action, at least in part, on the

other's assessment of the world. Trust, as Rotter (1980) put it succinctly, allows people to expect "that the word, promise, oral or written statement of another individual can be relied on" (p. 1). Trusting or relying on the other can initiate the formation of a new relationship or maintain already existing relationships (Holmes & Rempel, 1989; Kelley & Thibaut, 1978; Rempel, Holmes, & Zanna, 1985). Thus, the benefit of a socially shared reality extends beyond the purely epistemic dimension (i.e., replacing uncertain representations with reliable and valid representations) to the extent that it also fosters interpersonal trust and reliance on each other's view of the world.

In sum, the work reviewed here indicates preconditions, functions, and consequences of reality sharing. As for the preconditions, a certain level of uncertainty or ambivalence concerning the target stimulus or entity is required to motivate the reality sharing process (Byrne et al., 1966; Festinger, 1950; Hardin & Higgins, 1996). Also, the account by Hardin and Higgins (1996) suggests that the process of shared reality creation may serve two main functions, that is, rendering representations or views of the world reliable and rendering these representations or views valid. Furthermore, an interpersonal consequence of reality sharing is the strengthening of trust and reliance between those participating in a shared reality.

The Present Research: The Role of Biased Message Production and Shared Reality in the Saying-Is-Believing Paradigm

The research presented in this article explored whether audience-tuning effects on memory depend solely on processes before or during message production (e.g., Pasupathi et al., 1998) or whether the experience of shared reality (e.g., Hardin & Higgins, 1996; Higgins, 1992) also plays an important role. Free recall was preferred to dependent measures such as impression, judgment, or favorability ratings because it is less obviously related to the evaluative dimension of the communication topic (i.e., the target person). Apparently, the ability to disregard inappropriate information in one's impression may be independent of one's recall of the original information (e.g., Devine & Ostrom, 1985; Wyer & Budesheim, 1987), such that a regulation of evaluative biases is more likely in overt judgment or impression than in memory reports.

In a series of three experiments, we used the standard saying-is-believing paradigm to create conditions favorable to the construction of a shared reality (i.e., uncertainty and ambivalence). To manipulate the communicators' experience of a shared reality with their audience, we designed situations in which the two central functions of shared reality (i.e., the reliability and the validity of the shared representation) could be fulfilled to different degrees. One manipulation (communication feedback: success vs. failure) was designed to affect the communicators' perception of whether the audience is a reliable provider of information about the communication topic (i.e., the target person). Another manipulation (audience's group membership: in-group vs. out-group) was used

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[1] Given that shared reality also comprises evaluative and emotional representations, it is not synonymous with the notion of "common ground" (e.g., Clark & Marshall, 1981), which refers predominantly to mutual knowledge and understanding.

to render the audience either a valid or an invalid source of relevant information. When the audience appears as either unreliable or invalid, so should the audience-congruent representation expressed in one's message.

The first manipulation of shared reality (communication success vs. failure) was used after message production. It was important to the goals of this research to determine whether failure feedback would reduce or even eliminate the audience-tuning effect on communicators' subsequent representations (Experiments 1 and 3). The timing of the manipulation ensured that all communicators would perform audience tuning under the same circumstances, ruling out the possibility of systematic differences in message production. An elimination of the audience-tuning effect would, then, suggest that mechanisms before or during message production are not sufficient to drive the audience-tuning effect on subsequent memory. It should be noted that producing a message biased in the direction of the audience's attitude (and the concomitant rehearsal and elaboration of biased information) may certainly be necessary for the occurrence of the effect (Higgins & Rholes, 1978).

Prior to the present research, it was by no means evident that audience-tuning effects on memory can be eliminated. First, several lines of research suggest that the verbal communication of stimuli should have a profound effect on subsequent memory. For instance, the verbalization of stimulus material should create associations with existing knowledge structures, leading to deeper elaboration and, thus, a greater retrievability of that information relative to nonverbalized aspects (Craik & Lockhart, 1972). Also, research on verbal overshadowing has demonstrated that memories may be based to a larger extent on the biased verbal descriptions of stimuli than on the initial representation of these stimuli (Carmichael, Hogan, & Walter, 1932; Schooler & Engstler-Schooler, 1990; see also Chiu et al., 1998). Second, well-established findings in memory research suggest that the message information should have a considerable retrieval advantage over the original target information, irrespective of the specific (verbal) representation format. To begin with, the message information should be more retrievable because of greater recency of activation (e.g., Ebbinghaus, 1885/1964). Also, the context and processes of retrieval (producing a written report) are more similar to the context and processes of message production than to the context and processes of reading the original target passages; this differential overlap of process and/or context should allow better retrieval of the message information (Eich, 1980; Morris, Bransford, & Franks, 1977; Tulving, 1983). Furthermore, communicators should find it easier to recall the self-generated message information than the other-generated initial target passages—because of the generation effect (Slamecka & Graf, 1978).

Finally, empirical evidence also suggests that it may be difficult to eliminate evaluative memory biases from prior audience tuning. In a recent study by Todorov (2002), some participants received a highly salient, explicit instruction to describe the target person in an audience-congruent way. Whereas the biasing effect on evaluative impressions was eliminated in this condition, the effect on memories was still present. Taken together, there are substantial theoretical and empirical grounds to assume that communicators can hardly avoid exhibiting the memory bias once they have produced an audience-congruent verbal description of the original information.

To foreshadow our findings, Experiment 1 showed that when the audience failed to identify the referent person described in the message (identification failure), the audience-tuning effect on memory was eliminated, whereas the usual effect was present when the audience succeeded at identifying the target (identification success). In Experiment 2, some communicators addressed out-group members, that is, an audience with whom they were unlikely to want to create a shared reality (e.g., Festinger, 1950; Higgins, 1999; Hogg & Abrams, 1993; Kruglanski, Shah, Pierro, & Mannetti, 2002; Shah, Kruglanski, & Thompson, 1998). Although audience-tuning to in-group members yielded the usual recall bias, tuning to out-group members did not. Using trust in the audience's judgment of other people as an interpersonal measure of shared reality, we found that such trust predicted the memory bias. These findings were replicated in a study that manipulated both communication success and audience's group membership (Experiment 3). As expected, message valence and memory valence were more closely associated for high than for low trusters.

Experiment 1

Participants in a referential communication study were told that it would be their audience's task to identify a male target person on the basis of their description of the target. It was pointed out that the audience knew the target and had developed his own impression of him. Thus, the audience apparently knew more about the target than the participants, creating an initial expectation that the audience could be a valid source of target-relevant information. Ten minutes after producing their (audience-congruent) message, participants were told that the audience either did or did not identify the target person on the basis of that message (communication feedback: success vs. failure). The manipulation was designed to affect the audience's perceived reliability as a source of information about the target person. As outlined in the introduction, attaining a reliable representation is one of the central functions or motives of shared reality creation (see Hardin & Higgins, 1996). In the failure feedback condition, the audience should cease to appear as a reliable source of target information. By the same token, the audience-congruent representation expressed in the message is rendered unreliable. It was assumed that in this condition the communicators' potential experience of a shared reality would be severely reduced, whereas it would be supported by the success feedback in the other condition.

If the audience-tuning effect on memory hinges on information-processing mechanisms that occur before or during message production (such as selective rehearsal or biased encoding), then postmessage feedback should not affect the magnitude of the effect. However, if the effect depends on the participants' experience of a shared reality, then the effect should be reduced or even eliminated when participants receive failure feedback, that is, when they learn that the audience did not identify the message referent on the basis of their audience-congruent message.

Method

Participants. Participants were 65 undergraduate students (48 females, 17 males) at the University of Cologne, Germany. The mean age was 26.3 years ($SD = 6.9$). All participants were tested individually and received a compensation of 10 euro (about U.S.$10 at the time) for participating.

Because we hypothesized that the usual difference in recall between the positive and negative audience attitude conditions would be eliminated

after failure feedback, we needed to control for the Type II error, that is, the probability of overlooking existing effects. Given the results of existing studies (e.g., Sedikides, 1990; Todorov, 2002), we expected the effect size d (standardized difference of means) to be around 1.2. Following the procedure suggested by Cohen (1988), we calculated an optimal sample size of 64 on the basis of the expected effect size and a threshold of $p < .05$ for both the Type I and Type II errors.

Design. The experiment was based on a 2×2 between-participants design. The two independent variables were audience attitude toward the target person (positive vs. negative) and feedback about the audience's identification of the target person (success vs. failure). Participants were assigned randomly to the experimental conditions. Overall message valence and overall recall valence were the dependent measures.

Materials and procedure. The procedure was patterned after the basic paradigm of existing saying-is-believing studies (e.g., Higgins & Rholes, 1978), with instructions in German instead of the original English. The experiment was ostensibly about interpersonal communication and perception. Participants were asked to read an essay about a student volunteer named Michael (the target person), who supposedly participated in a long-term research project on interpersonal perception. Before participants started reading, they were told that it would be their task to describe Michael to another student volunteer called Armin (the audience). Presumably, it was Armin's task to identify Michael as the referent of the communicator's message among a set of 30 other participants in the long-term research project.

To provide the participants with information about their audience's supposed attitude toward the target person, the experimenter told them in a casual, offhand manner,

> Since Armin [the audience] knows Michael [the target person] personally, he has developed his own impression of Michael: Our previous observations indicate that Armin actually seems to like [doesn't seem to like] Michael and believes Michael has [does not have] many good qualities.

Participants then read an essay about the target person's behaviors. The target essay was constructed on the basis of six evaluatively ambiguous passages taken from existing studies (Higgins & Rholes, 1978; Sedikides, 1990; Todorov, 2002) and translated into German. Each of the passages was designed to evoke a positive or negative trait label (e.g., adventurous vs. reckless) with equal likelihood (see Appendix). The evaluative ambiguity of the target passages was confirmed in pretests with 40 participants.

After reading the target passages, we asked participants to write their message description of the target person (Michael) without mentioning his name. After participants completed an unrelated 10-min filler task, the experimenter returned to provide each participant with feedback about whether the audience had correctly identified the target person. In the identification-success condition, participants were told that their audience had identified the target person on the basis of their message description. In the identification-failure condition, participants were told that their audience had not identified the target person on the basis of their message description.

Participants were then asked to recall the original target passages in a free recall format. The instructions for the recall task read as follows:

> At this point we would like you to recall the original information from the passages you read in the beginning about Michael. It is imperative that you try to remember as much as possible. Please try to use the exact words and sequence.

Then, we administered a manipulation check in which participants were asked to rate their audience's attitude toward the target person, on a 7-point scale from 1 (*negative*) to 7 (*positive*).

Measures. Two coders blind to the condition of the respective participant rated the overall valence of the message and the overall valence of the recall protocols on a bipolar 11-point scale, ranging from −5 (*extremely negative*) to +5 (*extremely positive*). Message and recall protocols were presented to the coders in random order, each coder receiving a different order, with the constraint that the two protocols from the same participant be separated by at least five other protocols. Coders broke down each protocol into passages corresponding to the passages in the target essay and assigned scores for positive or negative distortions to each passage. Using these scores for each protocol's passages, they then assigned an overall valence rating to each protocol. Correlations between the coders' ratings were sufficiently high (rs = .92 and .89 for message valence and recall valence, respectively, ps < .001). The means of the two coders' ratings served as the dependent measures in the subsequent analyses.

Results and Discussion

Manipulation check. Participants in the positive audience attitude condition rated their audience's attitude toward the target person as more positive ($M = 5.54$, $SD = 0.76$) than did participants in the negative audience attitude condition ($M = 1.96$, $SD = 0.76$), $F(1, 61) = 337.62$, $MSE = 199.03$, $p < .001$. Thus, participants were aware of their audience's attitude toward the target person. There was no significant interaction between audience attitude and identification feedback, $F(1, 61) < 1$, *ns*. This finding indicates that participants in the two feedback conditions did not differ in their perception of the audience's attitude.

Audience tuning. An important precondition for testing our hypotheses was that participants actually tuned to their audience, that is, that they produced messages congruent with their audience's attitude toward the target person. Clearly, this precondition was met. We found that participants produced more positive messages for an audience with a positive attitude ($M = 1.00$, $SD = 1.53$) than for an audience with a negative audience ($M = -0.86$, $SD = 1.56$), $F(1, 61) = 4.85$, $MSE = 56.70$, $p < .001$. Thus, participants did tune their messages to their audience. Because the interaction between audience attitude and identification feedback was statistically nonsignificant, $F(1, 61) = 1.30$, *ns*, there was no evidence that the amount of audience tuning differed between the identification-success and identification-failure condition. This was as expected, given that the feedback manipulation occurred after message production.

Audience-tuning effects on recall. The crucial finding was that participants' recall of the target person was biased in the direction of their audience's attitude only when they received success feedback (see Table 1). A 2×2 analysis of variance (ANOVA) revealed no significant main effect of identification feedback ($F < 1$, *ns*) but a significant main effect of audience attitude, $F(1, 61) = 8.33$, $MSE = 6.99$, $p < .01$, that was qualified by a significant

Table 1

Experiment 1: Recall Valence as a Function of Audience Attitude and Identification Feedback

| Identification feedback | Audience attitude | | | |
| | Positive | | Negative | |
	M	SD	M	SD
Success	0.84	1.03	−0.63	0.87
Failure	0.16	1.34	0.00	1.24

Note. Recall valence scores are the mean ratings of two independent coders on a bipolar 11-point scale ranging from −5 (*extremely negative*) to 5 (*extremely positive*).

interaction between audience attitude and identification feedback, $F(1, 61) = 5.44$, $p < .05$. After success feedback, participants in the positive attitude condition recalled more positive aspects about the target person than did participants in the negative attitude condition, $F(1, 61) = 13.41$, $p < .01$, as calculated with a planned contrast. When the identification had presumably failed, participants' recall of the original information did not differ reliably between the positive attitude condition and the negative attitude condition, $F(1, 61) < 1$, ns. Thus, the audience-tuning effect on recall valence was eliminated in this condition. Because we designed the identification-failure feedback to reduce the audience-tuning effect, we calculated the observed effect size from the data in the identification-success condition. The observed effect size ($d = 1.23$) reached the expected value ($d = 1.2$), so the Type II error was controlled at $p < .05$.

Apart from these comparisons of mean recall valence, we also examined the strength of the relation between message and recall valence separately for both identification feedback conditions. Given that participants' own personal evaluative reactions to the target person are likely to affect both the message and recall valence, a positive correlation would be expected in both feedback conditions. However, because failure feedback should induce participants to rely on their audience-congruent message to a lesser extent, we expected a lower correlation in this condition relative to the success feedback condition. Indeed, the correlation between message valence and recall valence was somewhat higher after identification success, $r(30) = .63$, $p < .001$, than after identification failure, $r(31) = .49$, $p < .01$, although the difference failed to attain statistical significance ($p = .22$).

In sum, Experiment 1 is the first study to demonstrate that the audience-tuning effect on memory can be eliminated when communicators are induced to question the successful creation of a shared reality with their audience. The influence on memory of having produced a biased message to suit the audience was eliminated when participants were led to believe that the audience's identification of the target person from their message had failed. Although the message was tailored to suit the audience's biased attitude, the audience's subsequent rejection of that message indicates inconsistency and, thus, a rather low reliability of the audience-congruent view. When representations established together with another person suffer from low reliability, a shared reality can hardly be created. After all, reliability of the shared view is assumed to be a central function of reality sharing (see Hardin & Higgins, 1996).

The findings also have implications concerning other extant accounts of audience-tuning effects on memory. Because communicators received the feedback after they had tuned to their audience and the size of the tuning was the same in the identification-failure condition as in the identification-success condition, processes during message production (see Higgins & Rholes, 1978; Pasupathi et al., 1998) cannot account for the difference in memory bias between the feedback conditions. Although audience-congruent message production may certainly be necessary for audience-tuning effects, it does not seem to be sufficient.

Although the results of this first experiment are certainly consistent with a shared reality account (Hardin & Higgins, 1996; Higgins, 1992), there are still potential doubts and problems to confront. First, evidence for the differential creation of a shared reality is rather indirect. Apart from operationalizing shared reality by means of an experimental manipulation, it was desirable to

obtain additional indications of the degrees to which a shared reality has been created in the experimental conditions. Second, the findings of Experiment 1 lend themselves to an alternative explanation: The feedback manipulation constitutes an explicit reinforcement, with feedback about identification failure operating as a negative consequence following the message that communicators have produced. On learning that the audience failed to identify the target person on the basis of the evaluatively biased message, communicators should be less likely to reproduce the same response or, to couch it in less behaviorist terms, to regard their message as a correct or acceptable representation of the referent.

To obtain evidence for the shared reality approach that is not easily explained by a reinforcement account, we wanted to design a manipulation of shared reality that cannot be construed as a type of positive or negative consequence following the audience-congruent message. When planning a second experiment, we drew on shared reality theory to devise such a manipulation. In a nutshell, we derived the prediction that participants tuning to an audience apparently belonging to their in-group should subsequently exhibit audience-congruent memories, whereas participants tuning to an out-group audience should not exhibit biased memories, or at least, should do so to a lesser extent. We briefly outline the reasoning and empirical background underlying this manipulation. (It should be noted that Experiment 3 yielded additional evidence inconsistent with a reinforcement account, using the same identification feedback manipulation used in Experiment 1.)

According to the shared reality account proffered by Hardin and Higgins (1996), a person with whom a shared reality is achieved should possess qualities that render her or him a source of information that is not only reliable but also valid concerning the target aspects of reality. A hallmark of such qualities may be sufficient similarity to the perceiver (Festinger, 1950; Suls, Martin, & Wheeler, 2000, 2002) or membership in the perceiver's in-group (Festinger, 1950; Higgins, 1999; Hogg & Abrams, 1993; Kruglanski et al., 2002; Shah et al., 1998).[2] More than 50 years ago,

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[2] We acknowledge that there are domains of social comparison and reality construction in which people may prefer dissimilar over similar others as sources of relevant information. Considerable debate has existed and still exists concerning Festinger's (1950, 1954a, 1954b) so-called "similarity hypothesis" (see, e.g., Kruglanski & Mayseless, 1990; Suls & Wheeler, 2000; Suls & Wills, 1991). However, we note that people seem to choose dissimilar others in social comparison predominantly in domains that lie outside our field of investigation. First, the preference of similar versus dissimilar others depends on the stage of reality sharing, that is, construction versus verification (see Fazio, 1979; Mettee & Smith, 1977). Whereas people interested in verification tend to prefer dissimilar comparison partners, people motivated by the initial construction of a judgment apparently favor similar others (Fazio, 1979). Second, the choice of dissimilar comparison standards seems to play a more prominent role in the evaluation of abilities and qualities of the self, such as one's physical or intellectual performance, than in the evaluation of beliefs and opinions (e.g., Suls et al., 2000, 2002). For the social comparison of opinions or beliefs, people seem to prefer the "similar expert," that is, a person who is sufficiently similar on fundamental attributes and a source of desired knowledge (Suls et al., 2000, 2002). Because our research focused on the construction (rather than verification) of beliefs concerning a third person (rather than self-related qualities), the similarity rather than the dissimilarity of comparison partners seems to be relevant in the present context.

Festinger (1950) lucidly argued that people do not rely on just any other person to create a shared view:

> An opinion, a belief, an attitude is "correct," "valid," and "proper" to the extent that it is anchored in a group of people with similar beliefs, opinions, and attitudes. This statement, however, cannot be generalized completely. It is clearly not necessary for the validity of someone's opinion that everyone else in the world think the way he does. It is only necessary that the members of that group to which he refers this opinion or attitude think the way he does. (pp. 272–273)

Drawing on Festinger's (1950) claim, we assumed that communicators in the saying-is-believing paradigm should be more likely to regard their audience-congruent message as valid when they address an in-group audience than when they address an out-group audience. By the same token, a shared reality should be established to a greater extent with an in-group than with an out-group audience. Although no empirical evidence exists concerning the differential effects of audience-tuning to in- versus out-group members, related research suggests that people prefer in-group members to out-group members as providers of valid information, that is, as sources of epistemic certainty (Kruglanski et al., 2002; Shah et al., 1998; also see Hogg & Abrams, 1993). For instance, Shah et al. (1998) demonstrated that the well established in-group bias (i.e., greater favoritism or loyalty expressed toward in- vs. out-group members) is driven to a substantial extent by the need for cognitive closure, that is, the desire for definite answers rather than uncertainty or ambiguity. The authors explicitly argued that "one function of in-groups is to furnish 'social reality' for their members based on group consensus" (p. 383). This notion is also supported by findings from an early study reported by Byrne and McGraw (1964), using the attitude-similarity-attraction paradigm (for a review see Byrne, 1971). Whereas consensual validation of attitudes by another person often enhances attraction to that person, Byrne and McGraw found that attraction does not increase when the validating individual belongs to a disfavored out-group. Furthermore, using an auditory equivalent of Sherif's (1935, 1936) autokinetic stimuli, Pollis (1967) found that participants who had established a judgmental norm together with a member of an existing in-group subsequently adhered to this norm to a greater extent than did participants who had formed norms together with a stranger (i.e., a non–in-group member). Apparently, representations or beliefs formed with in-group members were more "real" than those created with strangers. Also, the socially created norm was so potent in the in-group condition that these participants were subsequently much more likely to proselytize participants from the other condition into adopting their norms than vice versa.

Experiment 2

In Experiment 2, the same experimental paradigm as in the Experiment 1 was used to register the audience-tuning effect on recall. The experiment was designed with three main goals in mind. First, the shared reality account was explored by means of a manipulation whose potential impact could not be explained by the alternative reinforcement account applicable to the findings of Experiment 1. This manipulation concerned the audience's group membership: Participants communicating with an in-group audience should experience a shared reality with their audience to a greater extent than should participants communicating with an out-group audience. Thus, in the latter condition, the audience-tuning effect on memory should be reduced, or even eliminated, relative to the former condition. Second, a new measure was used to obtain evidence of shared reality creation going beyond the operationalization required to manipulate the independent variable. This measure addressed the interpersonal dimension of a shared reality, in addition to the epistemic dimension (Hardin & Conley, 2001; Hardin & Higgins, 1996). More precisely, to create a socially shared reality, communicators should feel they can rely on the other person for valid assessments of the world, allowing them to base their own judgment and action, at least in part, on the other's view. Thus, in the saying-is-believing paradigm, communicators experiencing a shared reality should feel they can trust their audience for valid assessments of other people. To measure this interpersonal consequence of a shared reality (see Hardin & Higgins, 1996), we asked participants to rate their trust in their audience's judgment about other people.

Third, we also explored whether differences in recall bias could be due to differences in participants' mood when communicating with an in-group versus an out-group audience. According to the bulk of research on intergroup bias, people favor in-group members over out-group members and they prefer to interact with the former rather than the latter. Thus, having to communicate with a disfavored (out-group) rather than a favored (in-group) audience may dampen one's current mood. If this was the case, the group membership manipulation would be confounded with participants' mood. In turn, a subdued mood in the out-group condition may cause the selective retrieval of mood-congruent (i.e., evaluatively negative) information relative to other kinds of information (Bower, 1981), or may, more specifically, inhibit the retrieval of evaluatively positive aspects (Isen, 1984). Similarly, a rather negative mood in that condition could be misattributed to the characteristics of the response object (i.e., the target person; see, e.g., Schwarz & Clore, 1996). Both processes could result in a negativity bias in the out-group condition, overriding possible differences in recall valence between the positive-attitude and the negative-attitude conditions. Furthermore, negative affective states may generally impair people's memory performance (e.g., Ellis & Ashbrook, 1988). In the present paradigm, then, participants in a bad mood may not recall the audience-congruent message information to the same extent as participants in a better mood, reducing the amount of evaluatively biased aspects in the recall protocols. (It should be noted that the effect of feedback found in Experiment 1 may be even more amenable to a mood explanation, an issue that was addressed in Experiment 3.) It was important, then, to measure communicators' mood.

Method

Participants. Participants were 66 students (46 females, 20 males) at the University of Cologne (mean age = 26.1 years, SD = 6.5). All participants were tested individually. Each participant received a compensation of 10 euro (about U.S.\$12 at the time) for his or her participation. As in the previous experiment, the optimal sample size was 64, given an expected effect size of d = 1.2 and $p < .05$ for the Type I and Type II errors.

Design. The experiment was based on a 2 × 2 between-participants design. The two independent variables were audience attitude (positive vs. negative) and audience's group membership (in-group vs. out-group). Participants were assigned randomly to the experimental conditions. The main dependent measures were message valence and recall valence. Participants' rating of trust in the audience's judgment of other people was

used as an additional dependent measure and as a potential mediator of an eventual effect of audience's group membership on recall bias. Participants' ratings of their current mood also served as a potential mediator and as a control measure.

Materials and procedure. The same materials and procedures were used as in Experiment 1, with the following exceptions. The addressee was introduced either as a student of the University of Cologne (in-group) or as a trainee from a nearby vocational school for hairdressers (out-group). The choice of this particular out-group was based on pretests in which university students were asked to produce messages for audiences belonging to one of several different out-groups (besides the hairdresser trainees, the out-groups included students from a competing university and students from a vocational school for furniture design). Pretest participants indicated how similar they felt to members of the respective out-group and how much they liked these members. Relatively low liking of and perceived similarity to a group's members are thought to indicate the perception of the group as an out-group (Deaux, 1996). Because the main purpose of Experiment 2 was to compare effects of audience tuning after communication with an in-group versus out-group audience, it was important to create conditions in which audience tuning would be likely to occur in both conditions. If communicators fail to tune to an audience, no audience-tuning effects can be expected in the first place. When the audience was a hairdresser trainee, the audience tuning remained strong, although the ratings of similarity to self and liking were lower than for any other pretested out-group. Thus, relative to the other potential out-groups, the group of hairdresser trainees was best suited for the present purpose.

The pretest participants, who received no explicit information about the target person's group membership, also indicated to which group they thought the target person belonged (*in-group* [i.e., university students], *out-group* [e.g., hairdresser trainee], or *do not know*). Communicators' a priori assumptions about the target person's group membership could potentially be relevant to explanations of differences in audience-tuning effects on recall. To begin with, it is conceivable that communicators would infer the target person's group membership from the audience's group membership. Communicators in the main study were told that both audience and target person were volunteers in the same research project and that the audience presumably knew the target person quite well. Thus, communicators in the out-group audience condition may surmise that the target person is likely to belong to the out-group as well. Also, messages about out-group targets could be perceived as less reliable or valid than messages about in-group targets, simply because the former are about someone who is rather different from oneself. Conversely, if communicators would predominantly assign the target person to the in-group, they may suspect that their out-group audience, by virtue of belonging to a different group, would not be a competent or valid source of information about the target person. Thus, if communicators in the out-group audience condition have clear-cut assumptions about the target person's group membership (be it in the in-group or out-group), they may regard their audience-tailored messages as relatively less valid. However, only a small minority (12%) of the pretest participants believed that the target person belonged to the out-group, whereas 38% of the pretest participants believed that the target person was a member of the in-group. It is important to note that 50% of the pretest participants indicated that they had no assumption about the target person's group membership.

Participants were told that their audience knew the target person quite well. In both conditions, the addressee was called "Armin." As in the standard paradigm of past studies, the participants received no feedback as to whether their audience had identified the target person. Just before the recall task, participants rated the extent to which they trusted their audience's social judgment. To embed the rating in a plausible context, we informed participants that they could participate in a follow-up study in which they would be asked to describe another target person. Participants indicated their rating of trust in response to the following probe: "Do you think that Armin is a person whose judgment about other people one can trust?"; ratings ranged from 1 (*not at all*) to 7 (*very much*). Next, partici-

pants were asked to indicate their current mood on a 7-point scale: "Please tell us about your current mood: Are you presently in a good or bad mood?"; responses ranged from 1 (*very bad*) to 7 (*very good*).

The manipulation checks were adapted to the procedure of this experiment: To establish that participants interpreted the lack of feedback as indicative of communication success, we ask participants whether they assumed that their audience had actually identified the target person on the basis of their description (*yes, target person was identified* or *no, target person was not identified*). As in the previous experiment, participants were asked to recall their audience's attitude toward the target person (*positive attitude*, *negative attitude*, or *do not know*). To confirm that the manipulation of the audience's group membership was effective, we asked participants to indicate on a 7-point scale how similar they felt to members of the in-group and to members of the out-group: "How similar do you feel to an average member of the group of [fellow university students/ hairdressing trainees]?"; responses ranged from 1 (*not similar at all*) to 7 *very similar*).

Measures. To obtain the valence scores for both message and recall protocols, we used the same coding procedure as in Experiment 1. Coder intercorrelations were sufficiently high (*r*s = .94 and .90 for message valence and recall valence, respectively, *p*s < .001) so that mean scores for message and recall valence could be calculated.

Results and Discussion

Manipulation checks. All participants correctly remembered their addressee's group membership. Sixty-four participants believed that their addressee had identified the target person on the basis of their description, and only 2 participants did not believe so, $\chi^2(1, N = 66) = 58.24, p < .001$. Thus, when no feedback about the success of the identification task was provided, participants overwhelmingly believed that their communication was successful. Finally, only 5 participants did not correctly remember their addressee's attitude toward the target person, whereas all other participants correctly remembered their audience's attitude, $\chi^2(2, N = 66) = 52.59, p < .001$. Finally, the participants, who were all university students, clearly felt more similar to in-group members, that is, fellow university students ($M = 3.77, SD = 1.50$), than to out-group members, that is, hairdresser trainees ($M = 2.38, SD = 1.18$), $t(63) = 7.04, p < .001$.

Audience tuning. An important precondition for all further analyses was that participants tuned not only to the in-group addressee but also to the out-group addressee. A 2×2 ANOVA revealed a significant main effect for audience attitude, $F(1, 62) = 54.11, MSE = 2.26, p < .001$, whereas the interaction between audience attitude and audience's group membership was not significant, $F(1, 62) = 1.72, ns$. When communicating with an in-group audience, participants formulated more positive messages for an audience with a positive attitude ($M = 1.59, SD = 1.46$) than did participants who communicated with an audience who had a negative attitude ($M = -1.62, SD = 1.83$), $t(31) = 5.56, p < .001$. This pattern was also found for the out-group audience: Participants wrote more positive messages for an audience with a positive attitude ($M = 1.59, SD = 1.36$) than for an audience with a negative attitude ($M = -0.65, SD = 1.31$), $t(31) = 4.83, p < .001$.

Audience-tuning effects on recall. As can be seen in Table 2, the difference between recall valence after tuning to an audience with a positive versus negative attitude was larger for participants tuning to an in-group audience than for participants tuning to an out-group audience. Thus, the audience-tuning effect on recall was larger after communication with an in-group audience than after communication with an out-group audience. A 2×2 ANOVA

revealed no significant main effect of audience's group membership, $F(1, 62) = 2.59$, $MSE = 1.47$, $p = .11$, but a significant main effect of audience attitude, $F(1, 62) = 13.40$, $p < .01$. This main effect was qualified by a significant interaction between audience attitude and audience's group membership, $F(1, 62) = 4.55$, $p < .05$. Planned contrasts showed that there was a significant effect of audience attitude only for participants who communicated with an in-group member, $F(1, 62) = 16.78$, $p < .001$. No effect of audience attitude was found for participants who communicated with an out-group member, $F(1, 62) = 1.17$, *ns*. The observed effect size for the in-group contrast was $d = 1.21$. Therefore, the Type II error level was controlled at $p < .05$.

Additional analyses were conducted to investigate possible mediators of this differential bias. On the one hand, differences in participants' recall might be due to differences in mood. For instance, a subdued mood in the out-group condition could forestall possible effects of audience attitude. However, recall valence was, if anything, slightly more positive in the out-group audience condition than in the in-group audience condition. This result does not support the possible contention that a dampened mood in the out-group condition led to a mood-congruent retrieval of mostly negative information, overriding potential differences between the positive-attitude and the negative-attitude conditions. The possibility of mood-related effects was more definitively ruled out using the mediation analysis reported below.

On the other hand, the differential recall bias could be due to differences in participants' experience of a shared reality. As outlined above, participants' trust in their audience's judgment of other people is considered an important interpersonal consequence of the shared reality experience. Trust was used as a measure of the extent to which participants felt they established a shared reality with their audience.

Ratings of trust and mood. Participants exhibited greater trust (see Table 3) in their audience's social judgment after communication with an in-group audience than after communication with an out-group audience. The statistical reliability of this difference was confirmed in a 2 × 2 ANOVA, which yielded a significant main effect for audience's group membership, $F(1, 62) = 3.99$, $MSE = 1.55$, $p < .05$. Neither audience attitude nor the interaction had a significant effect, $F(1, 62) = 1.52$, *ns*, and $F(1, 62) < 1$, *ns*, respectively. Thus, there was no indication that participants would exhibit lower trust in their addressee simply because he holds a negative attitude toward the target person.[3] Differences between participants' mood ratings in the in-group audience condition ($M = 5.00$, $SD = 1.25$) and in the out-group audience condition

Table 2

Experiment 2: Recall Valence as a Function of Audience Attitude and Audience's Group Membership

| Audience's group membership | Audience attitude | | | |
| | Positive | | Negative | |
	M	SD	M	SD
In-group	0.91	1.33	−0.82	0.93
Out-group	0.75	1.44	0.29	1.11

Note. Recall valence scores are the mean ratings of two independent coders on a bipolar 11-point scale ranging from −5 (*extremely negative*) to +5 (*extremely positive*).

Table 3

Experiment 2: Rating of Trust as a Function of Audience Attitude and Audience's Group Membership

| Audience's group membership | Audience attitude | | | |
| | Positive | | Negative | |
	M	SD	M	SD
In-group	4.81	1.22	4.24	1.03
Out-group	4.00	1.55	3.82	1.13

Note. Trust was measured on a 7-point rating scale, with higher values denoting higher trust in the audience's judgment of other people.

($M = 4.94$, $SD = 1.22$) were small and nonsignificant, $t(64) = .20$, *ns*. A 2 × 2 ANOVA with mood as the dependent variable yielded no statistically significant results.

The significantly higher ratings of trust in the in-group condition relative to the out-group condition are consistent with the idea that the differential recall bias found in these two conditions is due to differences in the participants' shared reality experience. However, apart from comparisons between means, a mediational analysis can be used to test more directly the extent to which trust accounts for the relation between audience's group membership and the size of the recall bias.

Mediational analysis. We followed the procedure recommended by Baron and Kenny (1986) to test whether the effect of audience's group membership on recall bias was mediated by trust in the audience's judgment (i.e., our measure of shared reality). We tested the four conditions of mediation suggested by Baron and Kenny: (1) The independent variable (i.e., audience's group membership) significantly predicts the dependent variable (i.e., recall bias); (2) the independent variable influences significantly the proposed mediator (i.e., trust); (3) the proposed mediator predicts significantly the dependent variable; and (4) when the proposed mediator and the independent variable are simultaneously entered in a regression analysis as predictors of the dependent variable, the influence of the proposed mediator remains significant, whereas the influence of the independent variable is significantly reduced.

For the mediational analysis, we calculated a unipolar measure of the audience-tuning effect on recall (recall bias), with higher values denoting a larger bias. To obtain that measure, we did not change recall valence scores in the positive audience attitude condition whereas we multiplied the scores in the negative audience attitude condition by −1. Thus, if a participant's recall was biased in the direction of the audience's attitude, then he or she received a positive score for recall bias. This unipolar measure of evaluative distortion had to be used because the mediator was a unipolar measure as well, with higher values indicating higher trust. Correlations between the bipolar measure of evaluative distortion (recall valence) and the unipolar trust measure were neither of interest for the present research nor could they be easily interpreted. As to the possible sequence of mediator and outcome variable, it is important to remind the reader that measures of trust were always obtained before the recall task.

The results of the complete mediational analysis are presented in Figure 1. As expected from the significant effect of audience's

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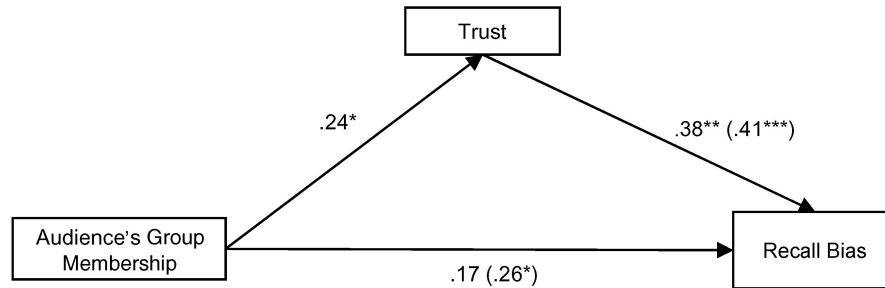[3] We thank an anonymous reviewer for pointing out that possibility.

Figure 1. Mediational analysis for Experiment 2 with audience's group membership as the independent variable, trust in the audience's judgment of other people as the mediator, and recall bias (unipolar measure) as the dependent variable. Path coefficients are standardized beta coefficients from (multiple) regression analyses. The numbers in parentheses represent the direct effect (bivariate beta coefficients) of one of the two predictors (i.e., audience's group membership or trust) on recall bias prior to the inclusion of the other predictor. *p < .05. **p < .01. ***p < .001.

group membership on recall bias in the above ANOVA, a first regression analysis revealed that recall was biased to a greater extent after communication with an in-group audience than after communication with an out-group audience, $\beta = .26$, $t(64) = 2.12$, $p < .05$ (Condition 1). As expected from the significant difference in trust between the in-group and the out-group condition, participants' trust was significantly higher when addressing an in-group audience than when addressing an out-group audience, $\beta = .24$, $t(64) = 1.98$, $p < .05$ (Condition 2). Also, participants exhibiting higher trust also exhibited a greater recall bias, $\beta = .41$, $t(64) = 3.64$, $p < .001$ (Condition 3). Most important, when audience's group membership and trust were included as predictors of recall bias, only trust predicted recall bias significantly, $\beta = .38$, $t(64) = 3.22$, $p < .01$, whereas the beta coefficient for audience's group membership was reduced to nonsignificance, $\beta = .17$, $t(64) = 1.43$, $p = .16$. The indirect effect of audience's group membership on recall bias via trust was marginally significant in a Sobel (1982) test of mediation ($z = 1.70$, $p < .09$; Condition 4). This pattern of findings suggests that the effect of audience's group membership on recall bias was at least partially mediated through the effect of participants' trust in the audience's judgment on recall bias.

An additional mediational analysis revealed no evidence whatsoever that the effect of audience's group membership on recall bias was mediated by participants' mood. Mood could not be predicted by audience's group membership, $\beta = .03$, $t(64) = 0.20$, $p = .84$, nor did mood predict recall bias, $\beta = -.09$, $t(64) = .74$, $p = .46$. The indirect effect of audience's group membership on recall bias via mood clearly failed to reach statistical significance in a Sobel test of mediation ($z = 0.72$, *ns*). In sum, for a possible mediation by mood, neither Conditions 2, 3, or 4 outlined by Baron and Kenny (1986) were met.

Differential correlations. As in Experiment 1, we calculated the correlation between message and recall valence for different subgroups. After communication with the in-group audience, we found a higher correlation, $r(31) = .67$, $p < .001$, than after communication with the out-group audience, $r(31) = .52$, $p < .01$. The difference did not reach conventional levels of statistical significance. More important, we compared the message and recall valence relationship for participants who reported high versus low ratings of trust. A median split was performed excluding all participants who reported trust scores equal to the median. We found a high and significant correlation for those participants who

reported higher trust scores, $r(17) = .70$, $p < .001$, and a moderate and nonsignificant correlation for participants who reported lower trust scores, $r(10) = .46$, *ns*. We did not detect a significant difference between these correlations ($p < .19$), however, which is possibly due to a relatively low testing power, given the small number of observations.

In sum, Experiment 2 yielded additional evidence consistent with a shared reality account of audience-tuning effects on memory (see Hardin & Higgins, 1996; Higgins, 1992). Whereas communicators tuning to an in-group audience subsequently exhibited the audience-congruent recall bias, communicators tuning to an out-group audience did not. An explanation invoking a differential reinforcement of the audience-congruent messages is apparently not applicable to the manipulation of shared reality used in this experiment. When we used trust in the audience's judgment of other people as an interpersonal measure of shared reality, we found that such trust mediated the impact of audience's group membership on the recall bias, whereas communicators' mood clearly did not. Also, correlations between message and recall valence were, if anything, higher for participants experiencing rather high trust than for participants reporting rather low trust. This finding is compatible with the idea that communicators experiencing a rather high degree of shared reality concerning their audience-congruent message are more willing to rely on their message in their subsequent recall of the target person's characteristics than communicators experiencing a relatively low degree of shared reality (see Higgins, 1992, 1999).

It should be noted that the lower audience-congruent recall bias in the out-group condition is unlikely to be due to communicators' assumptions about the target person's membership in the in- or the out-group. As described in the *Method* section, one may argue that communicators in the out-group condition regard messages about either out-group or in-group targets as less reliable or valid than messages about in-group targets. However, most pretest participants reported not having had a priori assumptions about the target person's group membership.

Experiment 3

Although neither a reinforcement nor a mood account appears as a viable explanation of the differential recall bias obtained with the group membership manipulation in Experiment 2, they may still

apply to the manipulation of shared reality used in our first experiment. As outlined above, feedback about identification failure could act as a negative consequence following the audience-congruent message, in which case communicators would be less inclined to regard their message as an acceptable representation of the target person. The audience's feedback, then, could be regarded as a type of external verification, in which success feedback verifies the view expressed in the message as acceptable, whereas failure feedback renders the view expressed in the message unacceptable. Such a process could be an important stage in the validation and maintenance of mental representation, following the initial formation of that representation before or during message production.

The reinforcement account implies that for feedback to be effective, communicators should regard their audience as a valid and reliable source of target-relevant information. Consequently, this account would not predict that communicators should trust their audience less after failure feedback. This prediction is contrary to that derived from the notion of shared reality favored in this article. As argued above, identification failure should be indicative of the audience's relatively low reliability as a source of target-relevant information. Thus, communicators who receive identification-failure feedback should not experience a shared reality to the same extent as communicators who receive identification-success (or no) feedback. The shared reality account would, then, predict lower ratings of trust in the audience's judgment after failure feedback than after success feedback. To test the viability of the reinforcement explanation and the shared reality account, in Experiment 3 we used both the feedback manipulation used in Experiment 1 and the measure of trust administered in Experiment 2. Including the latter measure also allowed us to examine whether trust in the audience's social judgment mediates the effect of identification feedback on recall bias.

The other main goal of Experiment 3 was to test a mood explanation of the feedback effect on recall bias found in Experiment 1. Although mood differences could not account for the findings of Experiment 2, we needed to investigate whether such differences could explain the effect of the feedback manipulation of shared reality used in Experiment 1. Indeed, a mood explanation seems, if anything, to be more applicable to the feedback manipulation than to the group membership manipulation: Participants' mood may be even worse when they learn that the audience has failed (vs. succeeded) to identify the target person from their message description than when they communicate with an out-group (vs. in-group) audience. As discussed earlier, negative affective states may have a detrimental effect on memory performance, possibly reducing the amount of evaluatively biased information participants are able to recall from their messages. Also, a negative mood may cause the selective retrieval of mood-congruent (i.e., evaluatively negative) information relative to evaluatively positive aspects (e.g., Bower, 1981; Isen, 1984), or it could be misattributed to the characteristics of the target person (see, e.g., Schwarz & Clore, 1996), overriding possible differences in recall valence between the positive-attitude and the negative-attitude conditions.

In principle, the memory-impairment and mood-congruency accounts are the same that could be advanced for the effect of the group membership manipulation in Experiment 2. However, the identification feedback manipulation is also amenable to yet another mood-based explanation, that is, one that invokes differences in mood state dependency (Bower, 1981): Memory performance may be worse when people's moods during encoding and retrieval differ than when their moods match (Bower, 1981; Eich & Metcalfe, 1989). Such effects of state-dependent memory are particularly pronounced for the test format used in our studies, that is, free recall (see Eich, 1980). One could argue that a relatively greater mood difference between message production and recall for identification failure than for identification success could impede retrieval of the message information, which, again, would reduce the impact of the biased message on communicators' memory.

In Experiment 3 we combined both the feedback and the group membership manipulation of shared reality in a single design. Crossing the two manipulations allowed us (a) to investigate whether the effects of both manipulations could be replicated in tests of simple main effects (given that there is no interaction between the two) and (b) to examine the effect of identification feedback for communication with an in-group audience and for communication with an out-group audience separately. We expected that the effect of identification feedback would be replicated within the in-group condition. In contrast, it was an open question how feedback would affect the dependent measures in communication with an out-group audience. On the one hand, if the validity of the out-group as a source of target-relevant information is sufficiently low, a shared reality may not be created even by explicit identification success. In this case, identification feedback would have no effect on recall bias or the trust measure. On the other hand, explicit success feedback may increase the perceived reliability of the audience as a source of target-relevant information. Hence, the experience of reliability gleaned from an explicit confirmation of identification success may permit the experience of a shared reality even in the out-group condition. In this case, identification feedback would affect recall bias and the trust measure in the out-group condition in the same direction as in the in-group condition. Also, if success feedback permits a shared reality for both the in- and the out-group, a main effect of audience's group membership would not be expected in an overall analysis including both feedback conditions.

Method

Participants. Participants were 127 students (101 female, 26 male) at the University of Cologne (mean age = 25.4 years, SD = 6.5), who received a compensation of 10 euro (about U.S.\$12 at the time) for their participation. The optimal sample size was 16 for each cell of the experimental design, yielding a total sample size of 128, given an expected effect size of d = 1.2 and $p < .05$ for the Type I and the Type II errors.

Design. The experiment was based on a $2 \times 2 \times 2$ between-participants design. The three independent variables were audience attitude (positive vs. negative), identification feedback (success vs. failure), and audience's group membership (in- vs. out-group). Participants were assigned randomly to the experimental conditions. The same dependent variables and potential mediators were measured as in Experiment 2.

Materials and procedure. In this experiment, the shared reality manipulations from Experiment 1 (identification feedback) and from Experiment 2 (audience's group membership) were used. As in Experiment 2, the audience was introduced as being a fellow student at the University of Cologne (in-group) or a student of a nearby vocational school for hairdressers (out-group). Ten minutes after message production, all participants received the explicit identification feedback (failure vs. success). Participants were told that their addressee either identified or did not identify the target person on the basis of their message. Participants were

asked to indicate their trust in their audience's judgment as well as their current mood after they had received identification feedback. As an additional manipulation check, participants were asked whether they had received identification feedback (*yes* or *no*) and, if yes, what kind of feedback they had received (*success feedback* or *failure feedback*). Accordingly, the manipulation check concerning participants' assumptions about identification success used in Experiment 2 was excluded. Otherwise, the procedure and materials were identical to those of Experiment 2.

Measures. The same coding procedure as in the previous experiments was used to obtain valence scores for both the message and the recall protocols. Coder intercorrelations were sufficiently high (rs = .90 and .84 for message and recall, respectively, ps < .001) so that mean scores for message valence and recall valence could be calculated.

Results and Discussion

Manipulation checks. All participants correctly remembered their addressee's group membership (university student vs. hairdresser). Participants, who were all university students, also felt more similar to the in-group ($M = 4.00$, $SD = 1.34$) than to the out-group ($M = 2.52$, $SD = 1.14$), $t(125) = 10.78$, $p < .001$. All participants remembered that they had received feedback about whether their audience had identified the target person, and all participants correctly remembered the specific kind of feedback (success or failure). Finally, 123 of the 127 participants correctly recalled their audience's attitude, $\chi^2(2, N = 127) = 114.34$, $p < .001$.

Audience tuning. Participants produced more positive messages when their audience supposedly had a positive attitude toward the target person ($M = 1.28$, $SD = 1.45$) than when their audience had a negative attitude toward the target person ($M = -1.25$, $SD = 1.40$), $t(125) = 10.01$, $p < .001$. A $2 \times 2 \times 2$ ANOVA with message valence as the dependent measure yielded a significant main effect for audience attitude, $F(1, 119) = 99.54$, $MSE = 2.04$, $p < .001$. No other significant main effects or interactions were found. It is important to note that all interactions that included audience attitude (i.e., Audience Attitude × Group Membership, Audience Attitude × Feedback, and Audience Attitude × Group Membership × Feedback) were statistically nonsignificant (all Fs < 1, ns). These findings indicate that participants tuned to their audience and that audience tuning did not differ between the conditions of the other two independent variables.

Audience-tuning effects on recall. Table 4 (left panel, Audience attitude) contains the mean scores of participants' recall valence separately for the eight experimental conditions. After communication with an in-group addressee, only participants who received a successful identification feedback produced recall protocols congruent with the audience's attitude toward the target person, whereas those participants who received failure feedback did not. A similar yet weaker pattern was found for participants who communicated with an out-group member: After receiving success feedback, participants in this condition produced more audience-congruent recall protocols than did participants who received failure feedback. A $2 \times 2 \times 2$ ANOVA yielded a significant main effect for audience attitude, $F(1, 119) = 10.13$, $MSE = 1.67$, $p < .01$, which was qualified by a significant interaction between audience attitude and identification feedback, $F(1, 119) = 8.37$, $p < .01$. No other main effect or interaction was statistically reliable (all Fs < 1.6, all ps >.20).

The simple main effect of audience attitude in the in-group condition was significant, $F(1, 119) = 10.22$, $p < .01$, whereas the same simple main effect was nonsignificant in the out-group condition, $F(1, 119) = 1.76$, ns. Also, the simple main effect of audience attitude in the identification-success condition was significant, $F(1, 119) = 18.32$, $p < .001$, whereas the corresponding simple main effect in the identification-failure condition was not significant, $F(1, 119) < 1$, ns. Thus, the differential audience-tuning effect on recall valence established in Experiments 1 and 2 were replicated in the pattern of simple main effects in the present experiment.

More specifically, the audience-tuning effect on memory was highly significant after receiving success feedback in the in-group condition, $F(1, 119) = 18.02$, $p < .001$, as calculated with a planned contrast. For this contrast, the effect size was $d = 1.4$, exceeding the expected effect size of 1.2 by a substantial margin. Thus, even given that the optimal size ($N = 128$) was not fully reached (the actual sample size was 127), the Type II error was controlled at a level of $p < .05$. No other contrast for the effect of audience attitude was statistically reliable, except for a marginally significant audience-tuning effect in the identification-success/out-group condition, $F(1, 119) = 3.34$, $p < .07$ (for a summary of the analyses, see Table 4, right panel, Planned contrasts).

Table 4

Experiment 3: Recall Valence as a Function of Audience Attitude, Audience's Group Membership, and Identification Feedback and Results of Planned Contrasts Between the Positive and Negative Audience-Attitude Conditions

Audience's group membership and identification feedback	Audience attitude				Planned contrasts	
	Positive		Negative			
	M	SD	M	SD	$F(1,119)$	d
In-group						
Success	1.22	1.34	-0.72	1.44	18.02	1.40
Failure	-0.13	1.12	-0.24	1.38	0.06	0.08
Out-group						
Success	0.28	1.56	-0.57	1.21	3.34	0.62
Failure	-0.13	0.81	-0.16	1.29	0.002	0.02

Note. Recall valence scores are the mean ratings of two independent coders on a bipolar 11-point scale ranging from −5 (*extremely negative*) to 5 (*extremely positive*). The effect size (d) is the standardized difference of means.

AUDIENCE-TUNING EFFECTS ON MEMORY

Ratings of trust and mood.   In the in-group condition, ratings of trust (see Table 5) were higher after identification success than after identification failure, $t(63) = 5.01$, $p < .001$. Thus, as expected, it appears that participants in the in-group condition experienced a shared reality to a greater extent when they received success feedback than when they received failure feedback. It is interesting that the same pattern was obtained in the out-group condition, in which trust was higher after identification success than after failure, $t(60) = 4.24$, $p < .001$. As in Experiment 2, we also calculated a 2 × 2 × 2 ANOVA with trust as the dependent variable. We found a highly significant main effect for feedback, $F(1, 119) = 43.72$, $MSE = 0.96$ $p < .001$; a significant audience Attitude × Feedback interaction, $F(1, 119) = 9.14$, $p < .01$; and no significant main effect for audience's group membership, $F(1, 119) = 1.22$, *ns*. It is important to note that no significant main effect was found for audience attitude, $F(1, 119) < 1$, *ns*. Thus, as in Experiment 2, there was no indication that participants felt lower trust in their addressee simply because he exhibited a negative attitude toward the target person.[4] We also calculated a 2 × 2 × 2 ANOVA with mood as the dependent variable that yielded no significant results whatsoever (all $Fs < 1$).

Mediational analysis.   As in Experiment 2, a mediational analysis was conducted to investigate whether any effect of the experimental manipulations on recall bias was mediated by participants' mood or their trust in the audience's judgment. Again, there was no evidence that mood mediated the influence of the manipulations on recall bias. Most important, in a regression analysis with identification feedback, audience's group membership, and mood as predictors and recall bias as criterion, mood did not reliably predict recall bias, $\beta = .12$, $t(125) = 1.32$, *ns*. As expected, identification feedback had a significant effect on recall bias, $\beta = .23$, $t(125) = 2.60$, $p < .05$, and audience's group membership did not predict recall bias, $\beta = .13$, $t(125) = 1.45$, *ns*. The indirect effect of both identification feedback and audience's group membership on recall bias via mood clearly failed to reach statistical significance in Sobel tests of mediation ($z = 1.12$, *ns*, and $z = 0.96$, *ns*, respectively.) In sum, for a possible mediation by mood, Conditions 3 and 4 outlined by Baron and Kenny (1986) were clearly not met. Given the lack of association between mood and recall bias, the relations between the experimental variables and mood were relatively unimportant; mood could be predicted by

identification feedback, $\beta = .19$, $t(125) = 2.20$, $p < .05$, but not by audience's group membership, $\beta = .12$, $t(125) = 1.39$, *ns*.

In contrast, as indicated in Figure 2, trust did mediate the influence of identification feedback on recall bias. Once again, we examined the four conditions for mediation outlined by Baron and Kenny (1986): A regression analysis with feedback and group membership as independent variables and recall bias as the dependent variable revealed a significant effect of identification feedback on recall bias, $\beta = .25$, $t(125) = 2.90$, $p < .01$ (Condition 1). As expected from the significant difference in trust, participants' trust was higher after receiving success feedback than after failure feedback, $\beta = .50$, $t(125) = 6.48$, $p < .001$ (Condition 2). Participants who exhibited greater trust also produced a larger recall bias, $\beta = .26$, $t(125) = 3.03$, $p < .01$ (Condition 3). Most important, when feedback, group membership, and trust were included as predictors of recall bias, only trust predicted recall bias significantly, $\beta = .20$, $t(125) = 1.98$, $p < .05$, whereas the beta coefficient for feedback was reduced to nonsignificance, $\beta = .15$, $t(125) = 1.54$, $p = .13$. A Sobel test of mediation yielded a significant result for the indirect effect of identification feedback on recall bias via trust ($z = 1.99$, $p < .05$; Condition 4). Therefore, all conditions for mediation outlined by Baron and Kenny (1986) were met.

Differential correlations.   As in the previous experiments, we calculated the correlation between message and recall valence. As in Experiment 2, we first performed a median split for trust (excluding participants who indicated values equal to the median) and thus separated participants who indicated relatively high trust scores from those who reported relatively low trust. Then we calculated the message-valence–recall-valence correlation for each group. For the high trusters we found a correlation of $r(28) = .44$,

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[4] It should be noted that the central findings of the ANOVA with trust as the dependent variable were the significant main effect for identification feedback and the nonsignificant main effect for audience attitude, the latter ruling out possible halo effects of the audience's (positive vs. negative) attitude on the communicators' impression of the audience (see Footnote 3). The significant interaction between audience attitude and identification feedback is of minor concern in this regard. One possible post hoc explanation for this interaction could invoke the differential violation of a positive expectancy by failure feedback in the positive as opposed to in the negative audience attitude condition. A positive expectancy concerning the target person, which would exist irrespective of the audience attitude manipulation, could be due to the fact that people generally wish to see in a positive light those who work with them on the same task or those who are involved in the same project (see, e.g., Klein & Kunda, 1992). Thus, because the target person in the saying-is-believing paradigm is a volunteer in the same research study as the participants, participants may generally be inclined to regard him positively. Consistent with this assumption, the overall mean valence of both message and recall concerning the target person in all three experiments reported in this article was slightly positive, collapsing across the positive and negative audience attitude conditions ($M = .06$ for message valence; $M = .07$ for recall valence; $N = 258$). The information about the audience's positive attitude may add to such a general positivity bias. Then, when participants in the positive audience attitude condition learn about the audience's failure to identify the target, they may experience that failure as even more inconsistent with the initial, audience-congruent view than did participants in the negative audience attitude condition. Thus, the audience's reliability as a source of target-relevant information would suffer to a greater extent when the audience has originally exhibited a positive rather than a negative attitude toward the target person.

Table 5

Experiment 3: Rating of Trust as a Function of Audience Attitude, Audience's Group Membership, and Identification Feedback

Audience's group membership and identification feedback	Audience attitude			
	Positive		Negative	
	M	SD	M	SD
In-group				
Success	4.81	0.91	4.19	0.75
Failure	3.19	0.91	3.59	0.87
Out-group				
Success	5.06	1.24	4.40	1.35
Failure	3.33	0.72	3.75	0.93

Note.   Trust was measured on a 7-point rating scale with higher values denoting higher trust in the audience's judgment of other people.
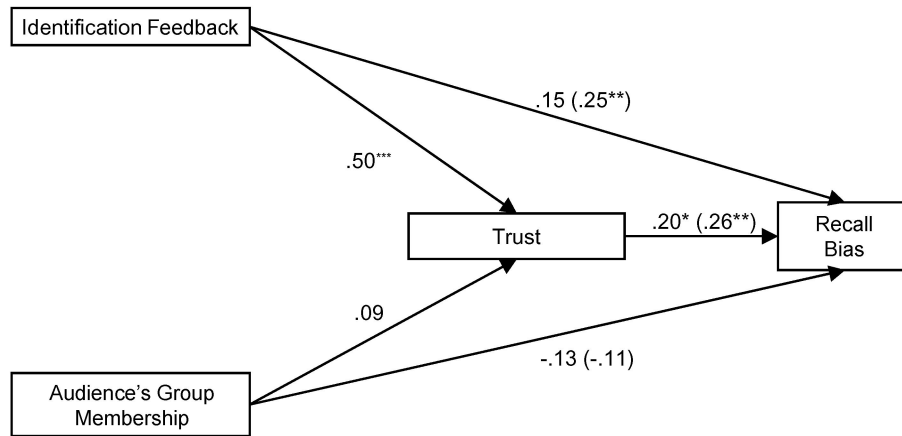
Figure 2. Mediational analysis for Experiment 3 with identification feedback and audience's group member-ship as independent variables, trust in the audience's judgment of other people as mediator, and recall bias (unipolar measure) as the dependent variable. Path coefficients are standardized beta coefficients from (multiple) regression analyses. The numbers in parentheses represent the direct effect (bivariate beta coefficients) of one of the three predictors (i.e., identification feedback, audience's group membership, or trust) on recall bias prior to the inclusion of the remaining predictors. $*p < .05$. $**p < .01$. $***p < .001$.

$p < .001$, whereas for the low trusters the correlation was close to zero, $r(30) = .01$, *ns*. The difference between those correlations was statistically significant ($p < .05$). Thus, it appears that par-ticipants experiencing a rather high degree of shared reality were more willing to rely on their audience-congruent message in their subsequent recall than were communicators experiencing a rela-tively low degree of shared reality (see Higgins, 1992, 1999).

In sum, Experiment 3 not only fully replicated the effect of the identification feedback manipulation on communicators' recall bias (Experiment 1) but also yielded additional evidence consistent with a shared reality account and inconsistent with two possible alternative explanations. It is important to note that the findings support neither a mood account nor a reinforcement explanation of the feedback effect. First, communicators' mood registered after the experimental manipulation did not differ between the condi-tions, nor was there any evidence that mood could predict the differential recall bias or mediate the effect of the feedback ma-nipulation on recall bias. Second, ratings of trust in the audience's judgment of other people were substantially lower after identifi-cation failure than after identification success. This result is in-consistent with a reinforcement account, which would not predict that communicators trust their audience less after failure feedback. After all, a reinforcement account is predicated on the notion that for feedback to be effective, communicators need to regard their audience as a valid and reliable source of target-relevant informa-tion. In contrast, the difference in trust is exactly what a shared reality account would predict (Hardin & Higgins, 1996; Higgins, 1992). From this perspective, identification failure indicated the audience's relatively low reliability as a source of target-relevant information, forestalling a central function of shared reality cre-ation and, thus, reducing the communicators' experience of a shared reality with their audience.

It is also notable that the effects of both the feedback and the group membership manipulation were replicated in tests of simple main effects. Whereas an effect of audience attitude on recall valence was found for identification success, no such effect was found for identification failure. Whereas an effect of audience

attitude on recall valence was found for communication with an in-group audience, no such effect was found for communication with an out-group audience.

It is interesting that whereas feedback significantly interacted with audience attitude in the omnibus ANOVA and significantly affected communicators' trust in the audience's judgment, audi-ence's group membership did not. Possibly, the explicit confirma-tion of identification success enhanced the experience of the au-dience's reliability as a source of target-relevant information in the out-group condition, dispersing the student communicators' poten-tial doubts that a shared reality can also be created with the hairdresser trainee. It appears, then, that the increased reliability resulting from explicit identification success was given more weight than was the lack of validity of the out-group audience as a source of target-relevant information. In other words, the per-ceived validity of the out-group was not sufficiently low to resist the effect of explicit success feedback and the resultant confirma-tion of the audience's reliability as a source of desired information. This may be due to the specific character of the out-group used in the present studies, that is, hairdresser trainees as perceived by university students. It is possible that the group membership ma-nipulation would be given greater weight when the intergroup difference is increased. This may be achieved by choosing an out-group that university students would perceive as more dissim-ilar than the group of trainees at a hairdressers' school.

Our mediational analysis confirmed the central role of the communicators' experience of a shared reality: Trust in the audi-ence's judgment of other people, a central consequence of shared reality creation (see Hardin & Conley, 2001; Hardin & Higgins, 1996), mediated the effect of identification feedback on recall bias. Also, correlations between message and recall valence were sig-nificantly higher for participants reporting rather high trust than for participants experiencing rather low trust. Apparently, participants experiencing greater trust relied on their audience-congruent mes-sages to a greater extent than did participants experiencing low levels of trust in their audience's judgment.

General Discussion

In our studies, the audience-tuning effect on memory depended on two critical factors. First, memories remained unbiased when the audience had presumably failed to identify the target person on the basis of the communicator's message, whereas memories were biased when the message had apparently allowed the audience to identify the target person (Experiments 1 and 3). Second, communicators did not have biased memories after communication with an audience who was an out-group member but they did when the audience was an in-group member (Experiment 2). It is important to note that audience tuning did not vary as a function of either success versus failure feedback or in-group versus out-group audience. Thus, differences in the amount of audience tuning cannot account for these differences in the audience-tuning effect on memory.

Furthermore, mediational analyses revealed that trust in the audience's judgment of other people significantly accounted for the relation between the effective experimental manipulations of shared reality and recall bias in Experiments 2 and 3. Trust is considered an important interpersonal consequence of creating a socially shared reality (Hardin & Higgins, 1996). Thus, the differential experience of a socially shared reality may be a central mechanism through which the overt experimental manipulation is able to influence the evaluative bias in communicators' recall (see Baron & Kenny, 1986). Also, across all three studies, a consistent pattern emerged concerning the associations between message and recall: The corresponding correlations were consistently higher when communicators were more likely to establish a shared reality with their audience (as indexed by either the experimental condition, or more appropriately, by their trust in their audience's judgment). This finding is compatible with the idea that memories in the saying-is-believing paradigm are biased by audience-congruent messages to the extent that participants believe that a shared reality with their audience has been created (Higgins, 1992, 1999).

Previous explanations of the audience-tuning effect on memory had, for the most part, focused on the role of information-processing mechanisms during message production. Pasupathi et al. (1998), for instance, invoked selective rehearsal to account for their finding that speakers remember more original items after they have recounted movie excerpts to attentive listeners than after addressing an inattentive listener. It is certainly commonplace in memory research that information that has been activated or primed is generally more likely to be recalled than is information that has not been rehearsed or primed. However, other findings suggest that the effect does not depend solely on selective priming during biased message production: In the study reported by Todorov (2002), audience-tuning effects disappeared when communicators were encouraged to attribute the evaluative bias in their message to contextual factors (such as an explicit tuning instruction) rather than to the "true" characteristics of the target person. However, because the experimental manipulation was used before participants wrote their messages, the cognitive processes during message production, for example, depth of processing (Craik & Lockhart, 1972), may have differed between the experimental conditions. Our Experiments 1 and 3 ruled out such alternative interpretations because the feedback manipulation, which eliminated the audience-tuning effect, was used after communicators had already written their description of the target person.

Also, as we have discussed in more detail for each single experiment, neither differential reinforcement nor communicators' mood (e.g., Bower, 1981; Isen, 1984) could account for the differential recall bias obtained with our experimental manipulations. Experiment 3 yielded convincing evidence that was inconsistent with both a mood and a reinforcement explanation of the effect of identification feedback on communicators' recall bias. To be sure, research in related areas may seem to offer still other explanations of our findings. For example, the differential changes in communicators' target representations after overtly stating a biased view of the target readily conjure up the research traditions in cognitive dissonance (e.g., Festinger, 1957) and self-perception (e.g., Bem, 1967). However, our findings are not easily understood in terms of either dissonance or classical self-perception theory. First, failure feedback is a negative consequence following freely choosing to bias one's message in the direction of the audience. Such a negative consequence should, if anything, increase dissonance (between the biased message and the original target information) and lead to a stronger relation between message valence and memory valence. Clearly, the opposite finding was obtained (for further arguments against a dissonance account of audience-tuning effects, see Higgins, 1992). Second, concerning a self-perception account, the success or failure feedback cannot operate as a situational force producing the message in the first place—after all, the feedback manipulation was used subsequent to message production. In the original terms of Bem's (1967) theory, audience tuning should appear as similarly "unmanded" (i.e., not requiring external inducement) in both the success and the failure condition. Thus, in both feedback conditions, communicators should be similarly willing to infer their true attitude from their message. The self-perception account, therefore, cannot explain the differences obtained in recall bias and the differential message-recall correlations in the success versus the failure condition.[5]

Hence, our findings require an explanation that capitalizes on factors other than information-processing mechanisms during message production, reinforcement, mood differences, dissonance reduction, or inferences based on self-perception. We propose that our results can be conceptualized within the broader framework of shared reality and general principles that guide the activation and use of knowledge (e.g., Higgins, 1996). Such a comprehensive perspective suggests that highly accessible information may not always be used by people. Specifically, when people judge a piece of information as irrelevant or inappropriate to a task at hand, they may refrain from including it in their response. This notion is consistent with many different kinds of research that have demonstrated that the judged usability of activated information is an important precondition for the use of this information (e.g., Martin

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[5] It is interesting that more recent research on self-perception by Tice (1992) has pursued a line of reasoning that is closer to the shared reality account of audience-tuning effects than the classic work on self-perception. She demonstrated that exaggerated ("biased") behavior biases subsequent attitudes to a greater extent when it is publicly displayed than when it is performed in private. This finding is inconsistent with a purely attributional account of self-perception effects, which predicts that public behavior can be more easily discounted as "manded" (i.e., situationally induced) than private behavior. Going beyond an attributional view of self-inferences, Tice (1992) argues that the social performance of behavior supports or increases the subjective importance and "reality" of the behavior (also see Wicklund & Gollwitzer, 1982).

& Achee, 1992; Martin, Strack, & Stapel, 2001). When communicators experience their audience-tuned message as creating a shared reality with their audience, then that message would be judged as relevant and appropriate to use in the reconstructive memory process (see Higgins, 1996). This would not be the case, however, either when the message failed to create a shared reality (i.e., identification failure in Experiments 1 and 3) or when the audience does not possess the characteristics that qualify her or him as a source of target-relevant information (i.e., when communicating to an out-group member in Experiment 2).

From the perspective of information use, then, our findings suggest that communicators refrain from using audience-congruent information in their recall when their audience either fails to identify whom the message is about or belongs to an out-group. What is the common denominator underlying these two boundary conditions of audience-tuning effects? As we have argued, both feedback about referential success and the addressee's group membership allow different degrees of social reality to be shared between the communicators and their audience. From this perspective, the extent to which recall is biased by previous audience tuning depends on the relative presence or absence of a socially shared reality (Hardin & Higgins, 1996; Higgins, 1992, 1999; Levine & Higgins, 2001): Communicators' memories for the communication topic are biased by their audience-congruent message only when that audience-congruent message has become part of a social reality shared with their audience.

In the introduction, we outlined preconditions, functions, and consequences of a shared reality, which can be neatly applied to the present set of studies. First, just as in the original saying-is-believing paradigm (Higgins & Rholes, 1978), the original input information about the target person was intentionally designed to be experienced as ambivalent and, hence, uncertain. From the passages describing the target person's behavior one can infer, with equal likelihood, either positive or negative traits (e.g., thrifty or stingy). Thus, in the present experiments, a central precondition for seeking a shared reality was created. Clearly, because processes of shared reality creation are triggered by epistemic uncertainty, our research has investigated informational rather than normative influences of the audience on one's view of the target person (e.g., Deutsch & Gerard, 1955).

Second, our experimental manipulations allowed two primary functions of shared reality (reliability and validity of the target representation; see Hardin & Higgins, 1996) to be fulfilled to different degrees. The audience's failure to identify the target person on the basis of the audience-tailored message indicated that the audience and, by the same token, the audience-congruent representation espoused in the message were lacking reliability. In other words, the audience-congruent view was not replicated in subsequent communication. Because the view emerging in communication with the audience was not reliable, it could not be sufficiently valid either. Clearly, a socially shared reality could not be established. In contrast, the reliability of the audience's view and the audience-congruent view was never at stake in the successful identification condition, allowing a shared reality to emerge.

When the addressee was an out-group member, he was unlikely to possess the characteristics required to assist in the construction of a valid representation of the target person (Experiment 2). In this case, participants do not even start to construct their own, subjectively valid view in their audience-congruent message. The

lack of validity was at odds with the functions of a shared reality. In contrast, communicating with an in-group audience allowed the construction of a valid representation and the creation of a shared reality. Thus, Experiment 2 tapped preexisting differences in communicators' willingness to create a shared reality with others. Related research suggests that people rely on in-group rather than on out-group members as sources of valid information (e.g., Gorenflo & Crano, 1989; Hogg & Abrams, 1993; Kruglanski et al., 2002; Shah et al., 1998). Clearly, Experiment 2 revealed that audience tuning led to biased recall after communication with an in-group member (a fellow student) but that the effect was eliminated when participants communicated with a member of an out-group (a trainee from a hairdressing school).

Third, in Experiments 2 and 3, we obtained initial evidence concerning a central interpersonal consequence of a shared reality. Participants exhibited higher trust in their audience's judgment after successful communication feedback (i.e., when the audience-congruent view seemed reliable) than they did after failed communication (i.e., when the audience-congruent view seemed unreliable). When no feedback was provided and, thus, communication appeared to run smoothly, participants communicating with an in-group audience exhibited higher trust than did participants communicating with an out-group audience. The differential ratings of trust, although representing a fairly selective measure of shared reality, provided an exciting glimpse at the factors mediating the differential audience-tuning effect on memory.

On the basis of these considerations, it can be suspected how shared reality has operated in producing the saying-is-believing effect in many existing studies (e.g., Higgins & McCann, 1984; Higgins & Rholes, 1978; McCann, Higgins, & Fondacaro, 1991; Sedikides, 1990; Todorov, 2002). In these studies, no explicit feedback on communication success was provided. Findings from Experiment 2 suggest that without explicit failure feedback, the participants were likely to believe that their messages were understood and accepted by the audience (see Krauss & Fussell, 1996; Stalnaker, 1978). Therefore, there was no reason to question the reliability of the audience as a source of target information (or, by the same token, the reliability of the audience-congruent representation expressed in the message). Also, because participants in these studies communicated with fellow students at the same university (i.e., an in-group audience), the validity of the audience-congruent view was never in doubt. Thus, the participants could safely assume that the (audience-congruent) view reflected the actual characteristics of the target person. In sum, participants in existing studies were likely to experience a shared reality to a great extent, which should have rendered the audience-tailored messages both reliable and valid. Given the results of our research, such an experience of a shared reality could be responsible for audience-tuning effects on subsequent representations typically found in previous research.

Some of our findings appear to have interesting implications for research on intergroup bias. In Experiment 3, the feedback manipulation had a greater impact on participants' shared reality experience and recall bias than had the manipulation of the audience's group membership. This finding suggests that interventions may be possible to overcome the initial lack of validity resulting from the other person's out-group status. Thus, even members of out-groups may become accepted "coconstructors" of a socially shared reality when they act in a way that explicitly suggests their reliability as a source of desired information. Future research should,

first of all, establish the robustness of this effect and then investigate the underlying mechanisms in more detail.

Processes of social reality creation have been recognized by many scholars in social psychology (e.g., Festinger, 1950; Heider, 1958; Lau et al., 2001; Lyons & Kashima, 2003; Newcomb, 1959; Resnick et al., 1991; Schachter, 1959; Sherif, 1935, 1936; Zajonc & Adelmann, 1987). For instance, Schachter (1959) showed that people seek to affiliate with other people when they feel anxious about a forthcoming event, presumably because others provide a standard against which an individual can validate her or his own reactions. As this early research demonstrates, people may desire the company of others for the purpose of creating a shared understanding of a novel or disturbing situation. Although research such as Schachter's has emphasized the motives driving social sharing, others have focused on its interpersonal effects, such as attraction felt toward those with whom people share the same view (e.g., Byrne et al., 1966; for an overview, see Byrne, 1971).

The distinction between socially constructing versus socially verifying a representation (see Fazio, 1979; Mettee & Smith, 1977) is helpful to segment the diverse investigations on social sharing to some extent. Whereas some research has focused on how people invoke others to construct an initial or new representation or evaluation (e.g., the bulk of social comparison studies; see Mettee & Smith, 1977; Suls & Wheeler, 2000), other research has emphasized processes of verifying already existing views (e.g., the above-mentioned work on consensual validation by Byrne and collaborators, e.g., Byrne et al., 1966). As we have pointed out, our research within the saying-is-believing paradigm has primarily tapped the construction of a socially shared view. Arguably, the processes and conditions of social construction may substantially differ from those of social verification (Fazio, 1979; Mettee & Smith, 1977). For instance, disagreement from others may be less desirable once people have already expended the effort of forming their own view. In contrast, when people are still in the process of mentally constructing a view, they may be more interested in discovering why relevant others do not share the same view (Fazio, 1979). Also, expected disagreement from others may prevent people from constructing a definite and differentiated view in their communication with others, reducing "cognitive tuning" for the sake of subsequent audience tuning (Zajonc, 1960, Exp. 2). Expected disagreement at the stage of verification, on the other hand, may induce people to avoid interpersonal exchange altogether or to brace themselves for a defense of their view (see McGuire, 1964). Future research is needed to investigate more specifically whether and how the processes, functions, and consequences of creating a shared reality change when the focus shifts from socially constructing to socially verifying one's representations of the world.

Given the findings of our studies on social construction, the interpersonal consequence of shared reality looms large: Those with whom people establish a social reality will be preferred sources of future validation for vague or ambiguous information. Thus, a shared reality implies a social bond and can thus forge new or affirm existing relationships (see Hardin & Conley, 2001). Conversely, communicators' reluctance to engage in a socially shared reality with their audience can be interpreted as an intriguing form of implicit rejection or disregard (for an overview of different forms of rejection, see Leary, 2001). Although other forms of rejection are quite overt and explicit, such as discrimination against others or ostracism (Williams, 2001), the denial of a shared reality constitutes a lack of positive regard that need not

be reflected in overt withdrawal or other behavioral expressions of exclusion. Our studies suggest that when communicators eschew a socially shared reality with their audience, they may display overt signs of taking the audience into account through their audience tuning but covertly reject the significance of their interaction with the audience by treating their tuned message as irrelevant. Future research could use such covert rejection as a novel, implicit measure of feelings of rejection toward out-groups (cf. Fazio & Olson, 2003; Greenwald, McGhee, & Schwartz, 1998). That is, when communicators engage in audience tuning but later show no memory bias, this could be an implicit measure of their experiencing the audience as an out-group member.

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(*Appendix follows*)

Appendix

Target Essays Used in Experiments 1–3 (Evaluatively Ambiguous Passages)

Michael has his own standards of behaving. As a student, he would tell on fellow classmates whom he saw break school rules, like cheating on tests. In fact, he claimed to his friends that never once in his life has he thought about cheating. [*moral–self-righteous*]

Michael recently started making attempts to keep up to date with cultural knowledge. He read a book about Europe, sat in a music appreciation workshop, and eats in fashionable ethnic restaurants. When being with friends, he often talks at length about foreign cultures and art. [*cultivated–artificial*]

Michael spends a great amount of his time in search of what he likes to call excitement. He has 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. He has been injured, and even risked death, a number of times. [*adventurous–reckless*]

Other than business engagements, Michael's contacts with people are surprisingly limited. He feels he doesn't really need to rely on anyone. [*independent–aloof*]

Once Michael makes up his mind 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 does he change his mind even when it might be better if he did. [*persistent–stubborn*]

To improve his life Michael tries to save money. He uses coupons, buys things on sale, and avoids donating money to charity or lending money to friends. [*thrifty–stingy*]

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Note. The italicized word pairs in brackets at the end of each paragraph indicate the two opposite trait labels that can be derived from the passage. The passages were taken from existing studies and translated into German.