# How Communication Goals Determine When Audience Tuning Biases Memory

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After tuning their message to suit their audience's attitude, communicators' own memories for the original information (e.g., a target person's behaviors) often reflect the biased view expressed in their message—producing an audience-congruent memory bias. Exploring the motivational circumstances of message production, the authors investigated whether this bias depends on the goals driving audience tuning. In 4 experiments, the memory bias was found to a greater extent when audience tuning served the creation of a shared reality than when it served alternative, nonshared reality goals (being polite toward a stigmatized-group audience; obtaining incentives; being entertaining; complying with a blatant demand). In addition, the authors found that these effects were mediated by the epistemic trust in the audience-congruent view but not by the rehearsal or accurate retrieval of the original input information, the ability to discriminate between the original and the message information, or a contrast away from extremely tuned messages. The central role of epistemic trust, a measure of the communicators' experience of shared reality, was supported in meta-analyses across the experiments.

*Keywords:* communication goals, memory, audience-tuning bias, socially shared reality, epistemic trust

Communicators take into account their audience's characteristics, such as the audience's knowledge or attitude on a topic (e.g., Clark & Marshall, 1981; Higgins, 1981; Krauss & Fussell, 1991), by tailoring their message to the audience—a process referred to as *audience design* (e.g., Clark & Murphy, 1982) or *audience tuning* (Higgins, 1992, 1999). It is intriguing that audience tuning not only affects the messages communicators transmit to their audience but also can bias the communicators' own subsequent memory of the message topic (e.g., Higgins, 1992; Higgins & Rholes, 1978). For example, when Nicole believes her fellow student Thomas likes a new professor, she is likely not only to recount the professor's favorable behaviors toward Thomas but also later remember the professor's behavior more positively (i.e., in a way that is consistent with her audience-tuned message).

This audience-tuning effect on subsequent memory, or "saying-is-believing" effect (Higgins & Rholes, 1978), was initially investigated in a paradigm in which participants read a short essay depicting evaluatively ambiguous behaviors of a target person (e.g., a behavior that can be labeled as either *thrifty* or *stingy*). After learning that their audience either likes or dislikes the target person, communicators typically describe the target more positively to the audience, who likes versus dislikes the target person. The audience-tuning effect on memory is found when communicators' subsequent memory for the original target information matches the evaluative tone of their audience-tuned message. This effect illustrates a more general notion that people's mental representations of an original experience can be shaped merely by communicating about that experience (see, e.g., Adaval & Wyer, 2004; Schooler & Engstler-Schooler, 1990). Whereas the occurrence of this audience-tuning or saying-is-believing effect is well established (e.g., Echterhoff, Higgins, & Groll, 2005; Higgins & Rholes, 1978; Sedikides, 1990; Todorov, 2002; for reviews, see Higgins, 1992, 1999), little is known about the conditions under which it occurs and the underlying mechanisms. One important condition is the goal of the communication.

## Shared Reality Versus Other Goals in Communication

The magnitude of an audience-tuning effect on memory may depend on the goals and motives that drive audience tuning. For example, when audience tuning is primarily motivated by the instrumental goal of securing beneficial social responses (see Hig-

gins, 1981; Jones & Thibaut, 1958), such as ingratiation to the audience (Jones, 1964) or appearing polite (see Brown & Levinson, 1978), communicators may no longer treat their audience-tuned message as a trustworthy source of information. We suspect that under such instrumental goal conditions, communicators may refrain from incorporating the audience-congruent view into their memory representation of the topic. In the initial example, the graduate student may tailor her message to her fellow student simply to avoid a heated argument about the new professor. In this case, she may not experience her message as trustworthy, and her subsequent memory would not be biased in the direction of her message. Communication scientists for decades have understood that communication can be motivated by different goals (Clark & Delia, 1979; Higgins, 1981; Jones & Thibaut, 1958; McCann & Higgins, 1988), but rarely have any studies examined the cognitive effects of communicators having different goals (for exceptions, see Carlsmith, Collins, & Helmreich, 1966; Semin, de Montes, & Valencia, 2003). Addressing this issue would not only expand researchers' knowledge about the cognitive effects of communication, but it would also extend the present literature on motivated cognition by illuminating a novel aspect of the motivation-cognition interface (see, e.g., Kruglanski, 1996).

One goal of communication is to create a shared view with one's audience about the communication topic (e.g., Clark & Marshall, 1981; Higgins, 1981). We propose that the audience-tuning effect on memory occurs when audience tuning serves the creation of a *shared reality* with the audience about the topic (Hardin & Higgins, 1996; Higgins, 1999) and that the effect is reduced or eliminated when audience tuning serves the attainment of goals unrelated to such a shared view. When audience tuning is motivated by the creation of a shared reality, the adaptation to the audience's attitude serves epistemic concerns, that is, the achievement of a sufficiently trustworthy understanding about the conversation topic (Echterhoff, Higgins, & Groll, 2005; Hardin & Higgins, 1996). In this case, communicators construct their own knowledge and mental representation of the topic jointly with their audience. In contrast, when audience tuning is motivated by alternative, nonshared reality goals, the adaptation to the audience's attitude serves nonepistemic concerns. Such alternative goals include securing beneficial social responses (e.g., being liked by the audience), fulfilling perceived demands from the environment (e.g., complying with politeness rules or etiquette), or entertaining the audience (Higgins, 1981). In this "ulterior" goal case, what communicators achieve through audience tuning is not a valid view of the topic. Thus, audience tuning should have a reduced impact on communicators' memory of the topic.

The shared reality approach echoes ideas from several classic social-psychological perspectives that have emphasized the role of interpersonal processes in the creation of psychological reality (e.g., Festinger, 1950; Heider, 1958; Newcomb, 1959; Sherif, 1936). According to Hardin and Higgins (1996), the main function of shared reality is to render representations of individual experiences subjectively valid and reliable. This function is especially important when individuals experience ambiguity about some target input (see Byrne & Clore, 1967; Festinger, 1950), as when they are uncertain about how to evaluate another person from their ambiguous behaviors (Higgins & Rholes, 1978).

Providing initial evidence for a shared reality account, Echterhoff, Higgins, and Groll (2005) found an audience-congruent memory bias in conditions assumed to involve a high shared

reality but no bias in conditions assumed to involve a low shared reality. For instance, communicators tuning to an in-group audience (a fellow student) exhibited the bias, whereas communicators tuning to an out-group audience (a hairdresser trainee) did not. Echterhoff et al. conjectured that communicators tune to an out-group audience for reasons other than achieving a shared reality, such as complying with external demands for politeness or unprejudiced behavior (for such interaction motives, see, e.g., Dovidio, Gaertner, Kawakami, & Hodson, 2002; Richeson & Trawalter, 2005). This previous research, however, did not investigate the role of different communication goals in the effect, specifically, whether the memory bias will occur with communication goals that produce equally strong audience tuning but do not involve creating a shared reality. Our present studies do address this issue. They also consider the role of potential mechanisms underlying the effect.[1]

## Possible Mechanisms Underlying Audience-Tuning Effects on Memory

According to shared reality theory, the audience-tuning effect on memory should occur to the extent that communicators experience a sense of shared reality with the audience, specifically, *epistemic trust* in the audience-congruent view (Higgins, 1999). In support of this, Echterhoff, Higgins, and Groll (2005) found that the effects of their shared reality manipulations were mediated by the communicators' epistemic trust in their audience's judgment. Ratings of epistemic trust served as a measure of the experienced shared reality, capturing the extent to which communicators felt they could rely on the audience-congruent view in forming their own private representation of the target person. With regard to the role of communication goals, when audience tuning serves the successful creation of a shared reality, communicators should experience their communication as being about the message topic and will consequently regard the audience-congruent view as a *trustworthy representation of the topic*. Sufficient epistemic trust should lead to an audience-congruent bias in communicators' subsequent memory representations of the topic. In contrast, when communicators achieve other goals, they will not develop a sufficient sense of epistemic trust, which should reduce or even eliminate the memory bias.

There are other mechanisms that may mediate the effect of audience tuning on the audience-congruent memory bias. For instance, differences in the rehearsal of the original input information versus the audience-congruent message information could play a role (e.g., Pasupathi, Stallworth, & Murdoch, 1998). Communicators who pursue ulterior goals, such as ingratiation, may make an effort to design a detailed message to increase its effect on the audience (e.g., Vrij, Edward, & Bull, 2001). These communicators may rehearse more details from the original input during

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[1] It was initially suspected that the mere knowledge of the attitude of an anticipated audience shapes subsequent memories for the topic (e.g., Schramm & Danielson, 1958). However, subsequent research found that the audience-tuning effect disappeared when communicators were exposed to the audience's attitude and read the target information while expecting to communicate but did not eventually produce a message (Higgins & Rholes, 1978; see also Higgins, 1992; Higgins, Echterhoff, Crespillo, & Kopietz, in press). Thus, in this paradigm, knowledge of audience attitude is not sufficient to produce the audience-tuning effect.

message production than communicators pursuing a shared reality goal, which would improve their retrieval of the original input information and reduce the memory bias. Thus, the audience-tuning bias should be reduced to the extent that communicators exhibit better rehearsal and more accurate retrieval of the content of the original target information.

Another possible mechanism is a greater ability to discriminate between the information from the original input and the information in the message. Arguably, when communicators tune to their audience predominantly for ulterior motives (vs. a shared reality motive), they may be better at keeping track of what they merely communicated about the topic versus what they originally learned about the topic. Thus, enhanced source discrimination (see Bayen, Murnane, & Erdfelder, 1996; Johnson, Hashtroudi, & Lindsay, 1993; see Wyer, 2004) could reduce the size of the bias. We investigated the potential role of such basic memory processes to pin down as precisely as possible the mechanisms driving the effect.

## Objectives of the Present Research

The main objectives of our present research were to (a) investigate whether the audience-tuning bias in memory depends on the goals served by audience tuning (shared reality vs. nonshared reality motives) and (b) examine mechanisms that may determine the size of the bias, especially mediators of possible effects of different audience-tuning goals. To attain these objectives, we manipulated audience-tuning goals and assessed the extent to which the effects of these manipulations were driven by the potential mechanisms such as epistemic trust (capturing the participants' sense of a shared reality), rehearsal and accurate retrieval of the original target information, and source discrimination. At this stage of our research program, we chose to measure potential mediators rather than to manipulate them in an extended series of studies (for a discussion of these approaches to mediation, see Spencer, Zanna, & Fong, 2005).

Creating a shared reality contributes to the audience-tuning effect on memory in the standard paradigm (Echterhoff, Higgins, & Groll, 2005; Higgins & Rholes, 1978), and thus this paradigm was used as the shared-reality-goal condition in the present studies with which the new communication goal conditions were compared. Because respondents are less likely to intentionally control the evaluative dimension of their responses in memory reports than in explicit probes of evaluative judgments (e.g., Devine & Ostrom, 1985), we investigated audience-tuning effects on *memory* rather than on impressions or explicit evaluations. We used a free-recall measure of memory because free recall is less sensitive to technical demand effects than other response formats such as recognition or cued recall (e.g., Lockhart, 2000). Also, communication effects on memory can be better detected with free-recall tests than with cue-based measures (e.g., Dudukovic, Marsh, & Tversky, 2004). Free-recall protocols were coded to indicate the *valence* (evaluative tone) of the information remembered about the target person.

To foreshadow, we found that when audience tuning served nonshared reality goals (such as politeness concerns, obtaining incentives, or complying with demands), the audience-tuning effect on memory was reduced. It is important to note that across all studies, the reduction of this effect was found to be mediated by our epistemic trust measure of shared reality and not by other measures, such as those assessing the rehearsal of the original

input information during message production or the discrimination between original input and message information.

## Experiment 1

All participants received information about the audience's attitude toward the target (positive or negative). In a condition replicating the standard audience-tuning study, German students communicated with a fellow German student and were expected to tune to their audience to achieve a shared reality about the target (shared reality goal). In another condition, German students communicated with a Turkish addressee and were expected to tune to demonstrate respect toward the audience, that is, tactful consideration of the audience's attitude (politeness goal). Although members of a stigmatized group are often overtly treated with respect, they are covertly not granted the same status as members of the nonstigmatized in-group (Dovidio & Gaertner, 1998). This is also the case in German society (see Zick, 1997). Thus, verbal tuning should be motivated to a greater extent by explicit concerns about politeness or outward respect than by the creation of a socially shared reality. We predicted that participants in both the politeness-goal and the shared reality condition would tune to their audience but that the former would exhibit a lower audience-congruent memory bias. We assessed participants' epistemic trust in their audience to measure experienced shared reality (see Echterhoff, Higgins, & Groll, 2005).

### Method

*Participants and design.* Participants were 60 undergraduate students at the University of Cologne (47 women and 13 men; mean age = 23.9 years, $SD = 4.6$) who received a compensation of 5 euro (then about U.S. $7). In a postexperimental suspicion check, participants were first asked to guess the purpose of the study and then probed for their acceptance of the cover story ("Did you think that your addressee would read your message?"). Four participants who exhibited strong suspicion were excluded from the analyses, resulting in the sample described above. Participants were assigned randomly to one of the 2 (audience attitude: positive vs. negative) $\times$ 2 (communication goal: shared reality goal vs. politeness goal) between-participants conditions. The main dependent variables (DVs) were the valence (evaluative tone) of the message and recall protocols.

*Procedure.* The experiment was patterned after the original communication-game paradigm (Higgins & Rholes, 1978) and ostensibly about interpersonal communication and perception. Participants first 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 they would need to describe Michael to another student volunteer (the audience) without mentioning Michael's name. The audience's task would be to identify Michael as the referent of their message among a set of 30 other participants in the long-term research project.

In the politeness-goal condition, participants were asked to communicate with an addressee called *Mehmet* (a Turkish name). Turks are an often stigmatized social group in Germany. In the shared-reality-goal condition, participants were asked to communicate with an addressee called *Armin* (a German name). To provide the participants with information about their audience's

attitude toward the target person, the experimenter told them in a casual, offhand manner (see Todorov, 2002):

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

Participants then read evaluatively ambiguous passages about the target person's behaviors (see Appendix A). As in the original paradigm, the manipulations were used before participants read the original passages. This sequence is realistic because, while observing an event, communicators often already have in mind or anticipate retelling the event to an audience (Higgins, 1981, 1992). However, we note that audience-tuning effects do not depend on biased encoding of the original passages (Sedikides, 1990; see also Footnote 1).

Participants then wrote a description of the target person (their message) on paper. After an unrelated 10-min filler task, all participants received explicit feedback that the audience successfully identified Michael as the person being described in their message. After another 2-min filler task, the participants rated their epistemic trust in the audience's judgment of other people (see Echterhoff, Higgins, & Groll, 2005): "Is your addressee a person whose judgment about other people one can trust?" ranging from 1 (*not at all*) to 8 (*very much*). To assess participants' audience-tuning goals, we asked them to indicate whether they had made an active effort to adapt their message to their audience's attitude (*yes* vs. *no*). Participants were then asked to remember as much as possible of the original information about the target person in a free-recall format.

One week after the first session, we assessed participants' ability to discriminate between the original input and their messages by using a computer-administered source discrimination test (using the software Medialab; Jarvis, 2005).[2] Participants indicated whether they believed a test item was from (a) the *original information*, (b) their *own message*, or (c) *neither* (i.e., new). The test items (see the *Materials* section) were presented in a randomized order (for the aggregation of scores, see the *Measures* section). Finally, participants were asked to indicate how similar they felt toward (a) *German* students and (b) *Turkish* students on a 7-point scale ranging from −3 (*not similar at all*) to +3 (*very similar*).

*Materials.* The essay describing a target person consisted of six ambiguous passages used in previous research (Echterhoff, Higgins, & Groll, 2005; Higgins & Rholes, 1978). As confirmed by pretests, each of the passages (see Appendix A) could evoke a positive or negative trait label (e.g., *thrifty* vs. *stingy*) with equal likelihood.[3] The names of the audiences in the politeness-goal and shared-reality-goal condition (*Mehmet* and *Armin*) were selected in a pretest. In this pretest, 24 German students were presented with a list of eight first names of Turkish men and eight first names of German men and rated the extent to which fellow German students would make an effort to control their behavior toward a person with that name and to avoid impolite utterances. The highest ratings were obtained for *Mehmet*, the lowest ratings for *Armin*.

The items for the source discrimination test were short statements about the target person, such as "He tries to save money." The test items belonged to one of four types: (a) only from the original input information, (b) only from participants' own messages, (c) from the original information and also from own messages, or (d) items from neither of these sources (distractors). In the following, we briefly describe the construction of this test material.

Two features distinguish the present source discrimination test from common tests of source memory (see, e.g., Bayen et al., 1996; Murnane & Bayen, 1996). First, because in our paradigm participants produced their own idiosyncratic message, test items from their own message had to be tailored to each participant. Second, whereas old items in existing source memory tests are typically from *either* of the possible sources (but see Lindsay & Johnson, 1989), we had to take into account that items could occur in both of our two sources because all messages about the target person included at least some items from the original essay. The original target passages were broken down into 20 items (e.g., "he tries to save money"). Each of these original items was scored as to whether it was reproduced in a participants' message, yielding *only-original* items (Item Type a) and *original-also-in-own-message* items (Item Type c). The mean number of original-also-in-own-message items in the source discrimination test was 6.30 (*SD* = 2.86), leaving, on average, 13.70 only-original items.

Test items from participants' own messages (Type b) were selected on the basis of three criteria: They had to be (1) sufficiently different from both the original information and (2) sufficiently different from the distractor items (items from neither source; see below). Thus, it was ensured that these items were *only-own-message* items (Item Type b). In addition, (3) to reduce heterogeneity within the set of test items, we did not select message items that were highly idiosyncratic (e.g., "He took a painting class with Gerhard Richter"). The number of remaining only-own-message items (e.g., "He is persistent, he is really stubborn"; see Appendix B, the Message column) ranged from 3 to 8 across participants (*M* = 5.3). The source discrimination test also contained 24 items from neither of the two sources (distractors, Item Type d). These items were constructed to contain information that was not part of the original target passages but was moderately related to the behavioral descriptions from the original (e.g., "He loves to read novels").[4]

*Measures.* Two coders blind to the experimental conditions rated the overall valence of the message and recall protocols on an 11-point scale ranging from −5 (*extremely negative*) to +5 (*extremely positive*). They broke down each protocol into parts corresponding to the passages in the target essay and assigned scores

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[2] A pilot study showed that when the source discrimination test was administered before free recall, the recall bias was eliminated even in a shared-reality-goal condition. This result is consistent with research showing that asking participants to make source judgments is sufficient to eliminate biasing influences on memory (e.g., Lindsay & Johnson, 1989), presumably because it implies a warning against source confusions (see Echterhoff, Hirst, & Hussy, 2005). Thus, in our experiments, we administered the source discrimination test after free recall.

[3] The evaluatively ambiguous character of the material was established in a pretest with 43 participants who rated the evaluative tone (from −3 [*very negative*] to +3 [*very positive*]) of 12 passages containing behavioral descriptions designed to be ambiguous. We chose those 6 passages with mean ratings closest to the scale midpoint (from −0.5 to 0.4, with the 95% CIs not extending beyond −1.5 and +1.5). Another 20 participants rated the overall evaluative tone of an essay consisting of these passages, yielding a mean of −0.5 (with the 95% CI including 0).

[4] On the basis of a pretest with 24 participants who completed a source discrimination test, we selected 24 distractors that were falsely attributed to either the original information or own message at a rate (relative frequency) of .10−.25. Thus, we ensured that distractors would not produce floor effects.

for positive or negative distortions. On the basis of these scores, they rated the overall valence. Intercoder correlations were high ($rs$ = .96 and.85) for message and recall, respectively. Means of the coders' ratings served as DVs in the subsequent analyses.

We also determined the number of *accurate reproductions* of idea units from the original target information in both message and recall protocols. We scored as accurate reproductions those idea units that preserved the propositional content of an idea unit from the original target essay (see Van Dijk & Kintsch, 1983). For instance, the idea unit *Michael tries to avoid spending money* was scored as an accurate reproduction of the proposition *Michael tries to save money* from the original essay. Two coders, also blind to the experimental conditions, counted the number of accurate reproductions. Scores from the two coders were sufficiently correlated ($r$ = .82) and were averaged to yield single measures of accurate reproductions in message and recall protocols.

Proportions of source attributions were obtained by dividing the number of attributions to a source (*original information*, *own message*, *neither*) by the total number of items for each source category (only original; own message; original and also in own message; neither), resulting in a 3 × 4 cross table.[5] Because raw proportions can be confounded with guessing biases toward a particular source (e.g., Bayen et al., 1996; Murnane & Bayen, 1996), we also report guessing-adjusted scores for two central performance scores: Correct attributions of only-original-information items (original-to-original attributions) were adjusted by subtracting the proportions of attributing distractors (items from neither source) to the original information, yielding *guessing-adjusted original-to-original attributions*. Correct attributions of only-own-message items (message-to-message attributions) were adjusted by subtracting the proportions of attributing distractors to the message, yielding *guessing-adjusted message-to-message attributions*. The mean of these two scores (average guessing-adjusted source identification; AGASI) served as an overall measure of source discrimination performance.

We also calculated inferred hit rates for items from the two sources from the source attribution data. Inferred hit rates estimate the probability of accepting an old item as old, irrespective of whether the source attribution is correct (see Bayen et al., 1996). These hit rates were calculated by dividing the number of attributions to either source (interpreted as the number of correct acceptances as old) by the number of all items from each of the two sources (original target information and participants' own message information, respectively).

### Results and Discussion

Planned contrasts were one-tailed. All other statistical tests were two-tailed, except when noted otherwise. For potential mediators (such as epistemic trust), we explored, first, effects of the communication-goal IV, and, second, associations of these variables with the main DV, a unipolar measure of audience-congruent recall bias, where higher values reflect a larger bias.[6]

*Manipulation checks.* Confirming the expected differences in audience-tuning goals, the proportion of participants reporting that they made an active effort at demonstrating audience tuning was significantly higher in the politeness-goal condition (43.3%) than in the shared-reality-goal condition (16.3%), $\chi^2(1, N = 60) = 5.08$, $p < .05$. This measure was not significantly correlated with the audience-congruent recall bias (unipolar measure; see Footnote 6), $r_{pbis}(58) = -.11$, $p = .39$. Thus, there was no evidence that

polite audience tuning itself predicted the main DV. We also confirmed that the participants perceived the nonstigmatized versus stigmatized group differently. As expected, the German participants reported a greater similarity to the proposed nonstigmatized group (i.e., the group of Germans; $M = 4.51$, $SD = 1.32$) than to the proposed stigmatized group (i.e., the group of Turks; $M = 2.23$, $SD = 1.12$), $t(59) = 9.80$, $p < .001$.

*Message and recall valence.* Appendix B contains examples of passages from message and recall protocols separately for the experimental conditions. As expected, participants tuned their message to their audience's attitude about the target person (see Table 1, Message column), as indicated by a significant main effect for audience attitude, $F(1, 56) = 10.48$, $p < .001$, $\eta^2 = .16$, in a 2 (positive vs. negative audience attitude) × 2 (shared reality vs. politeness goal) analysis of variance (ANOVA). Separate planned contrasts confirmed that participants in both the shared-reality-goal condition and the politeness-goal condition tuned to their audience, $F(1, 56) = 4.54$, $p < .05$, $d = 0.81$, and $F(1, 56) = 6.00$, $p < .01$, $d = 0.86$, respectively. The main effect for communication goal approached significance, $F(1, 56) = 3.62$, $p = .06$, $\eta^2 = .06$, reflecting less positive messages in communication with the Turkish audience. There was no significant interaction ($F < 1$, $ns$).

More important, the valence of participants' recall of the target person was biased in the direction of their audience's attitude only in the shared reality condition but not in the politeness-goal condition (see Table 1, Recall column), as indicated by a significant Audience Attitude × Communication Goal interaction, $F(1, 56) = 9.42$, $p < .01$, $\eta^2 = .14$. As expected, under a shared reality goal, participants in the positive-attitude condition recalled more positive aspects about the target person than participants in the negative-attitude condition, $F(1, 56) = 14.53$, $p < .001$, $d = 1.33$, whereas no such effect was found when participants had communicated under a politeness goal ($F < 1$). In the latter condition, recall valence was, if anything, even more negative in the positive-attitude condition than in the negative-attitude condition.

As expected, the correlation between message and recall valence was higher in the shared-reality-goal condition, $r(28) = .55$, $p < .001$, than in the politeness-goal condition, $r(28) = .29$, $ns$. These message–recall associations differed significantly, indicated by a significant Message Valence × Communication Goal interaction ($\beta = .20$), $t(56) = 1.72$, $p < .05$, in a regression with message valence ($z$ transformed) and communication goal (contrast coded: shared reality goal = +1, politeness goal = −1) as predictors of recall valence (see Aiken & West, 1991).

*Epistemic trust in the audience.* As predicted, participants in the shared-reality-goal condition experienced greater epistemic trust in the audience's judgment of other people ($M = 4.22$, $SD = 0.93$) than did those in the politeness-goal condition ($M = 3.77$, $SD = 0.86$), as

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[5] The denominator for attributions of items from neither source (distractors) was fixed (24). The denominator for the other three item types varied across participants because the number of these items depended on participants' message content (see the *Materials* section in Experiment 1).

[6] To capture the magnitude of the audience-congruent recall valence bias, independent of the audience attitude, we used a unipolar bias measure. To obtain this measure, recall valence scores in the negative-attitude condition were multiplied by −1, whereas recall valence scores in the positive-attitude condition remained unchanged. Thus, the more recall was biased in the direction of the audience's attitude, the more positive was the unipolar bias score (see Echterhoff, Higgins, & Groll, 2005).

Table 1
*Experiment 1: Valence of Message and Recall Protocols as a Function of Audience Attitude and Communication Goal (Shared Reality vs. Politeness)*

| | Protocol | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Message | | | | Recall | | | |
| | Audience attitude | | | | | | | |
| | Positive | | Negative | | Positive | | Negative | |
| Communication goal | M | SD | M | SD | M | SD | M | SD |
| Shared reality | 1.73 | 1.67 | 0.13 | 2.26 | 1.57 | 1.10 | 0.10 | 1.11 |
| Politeness | 0.84 | 2.00 | −1.00 | 2.27 | 0.44 | 0.95 | 0.64 | 1.06 |

*Note.* Message valence and recall valence were coded on an 11-point scale ranging from −5 (*extremely negative*) to +5 (*extremely positive*). Shared reality/positive, $n = 15$; politeness/positive, $n = 16$; shared reality/negative, $n = 15$; politeness/negative, $n = 14$.

indicated by a main effect of communication goal in an Audience Attitude × Communication Goal ANOVA, $F(1, 56) = 4.31$, $p < .05$, $\eta^2 = .07$. (No other significant effects emerged, $ps > .15$.) Also, trust in the audience's judgment was significantly correlated with the size of the audience-congruent recall bias (the unipolar measure, see Footnote 6), $r(58) = .22$, $p < .05$.

To follow up on these findings, we examined a possible mediation of the communication goal effect on recall bias by epistemic trust in regression analyses, drawing on the four standard conditions suggested by Baron and Kenny (1986). As indicated by the previous findings, the first three conditions were met: The IV communication goal had a significant effect on the DV recall bias ($\beta = .31$), $t(58) = 2.46$, $p < .05$, and on the proposed mediator (epistemic trust) ($\beta = .25$), $t(58) = 1.95$, $p < .05$, and epistemic trust significantly predicted the DV ($\beta = .22$), $t(58) = 1.67$, $p < .05$. Only the fourth condition was not met: In a multiple regression with both communication goal (contrast coded: shared reality goal = +1, politeness goal = −1) and epistemic trust as predictors, the effect of epistemic trust only approached significance ($\beta = .15$), $t(57) = 1.15$, $p = .13$, and the effect of communication goal was only slightly reduced but remained significant ($\beta = .27$), $t(57) = 2.11$, $p < .05$. Consistent with this finding, the indirect effect *ab* of the IV through the mediator on the DV was not significant in both the Sobel test of mediation (Sobel, 1982) ($ab = .048$, $p = .18$, one-tailed) and in an alternative bootstrapping procedure (Preacher & Hayes, 2004), with the 95% confidence interval (CI) for *ab* ranging from −.036 to .204. (We note that when we used an improved multi-item measure of epistemic trust in the subsequent studies, all four conditions of mediation were met. In addition, the mediation was significant across all studies in a meta-analysis; see the *Meta-Analytic Overview* section.)

*Accurate reproductions in message and free-recall protocols.* For the number of accurate reproductions (of the original target information) in message and recall protocols (see Table 2, Experiment 1), an Audience Attitude × Communication Goal ANOVA yielded no significant main effects of communication goal ($Fs < 1$). (No other effects were significant, $ps > .15$.) Accurate reproductions, in message or recall, were not significantly correlated with the size of the recall bias ($ps > .45$). Thus, there was no evidence that the lower recall bias in the politeness-goal condition was the result of better rehearsal or more accurate retrieval of the original information.

*Source discrimination.* Overall, there was no evidence that the lower recall bias in the politeness-goal condition was because of better discrimination between the original target information and the message information. Audience Attitude × Communication Goal ANOVAs did not produce significant main effects of communication goal for any of the 12 unadjusted source attribution proportions (see Table 3; $Fs < 2.5$, $ps > .13$) or for the guessing-adjusted message-to-message attributions and the average guessing-adjusted score (AGASI, see the *Measures* section; both $Fs < 1$, *ns*). Only the guessing-adjusted original-to-original attributions appeared to be somewhat higher in the politeness-goal condition ($M = 0.34$, $SD = 0.15$) than in the shared reality condition ($M = 0.28$, $SD = 0.17$), but even here, the main effect of communication goal was not close to being significant, $F(1, 56) = 2.45$, $p = .13$.[7]

If better source discrimination was responsible for the reduced recall bias, then (correct) message-to-message attributions should be negatively correlated with recall bias, whereas (incorrect) message-to-original attributions should be positively correlated with recall bias. However, these predictions were not supported by the data: The correlation between message-to-message attributions and recall bias was even slightly positive and nonsignificant, $r(58) = .13$, $p = .31$, and the correlation between message-to-original attributions and recall bias was even slightly negative and nonsignificant, $r(58) = −.11$, $p = .40$. Also, all other correlations between source attribution proportions and recall bias were not significant ($ps > .18$).

We also examined possible differences in participants' recognition hit rate for original information and own-message information, inferred from the source discrimination test (see the *Measures* section). No significant main effects of communication goal

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[7] Significant Communication Goal × Audience Attitude interactions emerged for guessing-adjusted message-to-message attributions, $F(1, 56) = 5.94$, $p < .05$, $\eta^2 = .10$, and for the AGASI measure, $F(1, 56) = 8.13$, $p < .01$, $\eta^2 = .13$. Apparently, participants in the shared-reality-goal condition attained higher scores when communicating with a positive-attitude audience, whereas participants in the politeness-goal condition exhibited higher scores when communicating with a negative-attitude audience. Such asymmetries between the positive- versus negative-attitude condition have been found before and may be the result of greater attention attracted by negative (vs. positive) information (Echterhoff, Higgins, & Groll, 2005; see also Rozin & Royzman, 2001).

Table 2

*Mean Number of Accurate Reproductions of Content From the Original Target Information in Message and Recall Protocols as a Function of Communication Goal Across Experiments*

| Communication goal | Protocol | | | |
|---|---|---|---|---|
| | Message | | Recall | |
| | M | SD | M | SD |
| Experiment 1 | | | | |
| Shared reality | 9.98 | 4.38 | 9.85 | 4.27 |
| Politeness | 8.90 | 5.09 | 9.27 | 3.89 |
| Experiment 2a | | | | |
| Shared reality | 7.03 | 4.36 | 5.90 | 4.10 |
| Incentive | 5.37 | 3.71 | 4.67 | 3.76 |
| Experiment 2b | | | | |
| Shared reality | 2.59 | 2.51 | 5.07 | 3.12 |
| Incentive | 3.28 | 3.34 | 6.22 | 3.62 |
| Entertainment | 2.61 | 2.08 | 6.67 | 3.30 |
| Experiment 3 | | | | |
| Shared reality | 5.55 | 3.37 | 8.95 | 4.06 |
| Compliance | 3.45 | 2.60 | 7.16 | 4.45 |

*Note.* In Experiment 1, in both communication goal conditions, $n = 30$. In Experiment 2a, shared reality, $n = 30$; incentive, $n = 27$. In Experiment 2b, shared reality, $n = 32$; incentive, $n = 32$; entertainment, $n = 33$. In Experiment 3, in both communication-goal conditions, $n = 38$.

emerged in the Audience Attitude $\times$ Communication Goal ANOVAs ($Fs < 1$, $ns$). Also, the inferred hit rates were not significantly correlated with the recall bias ($ps > .31$).

In summary, when participants made an active effort to demonstrate audience tuning toward a stigmatized group audience (politeness-goal condition), they did not exhibit the audience-congruent recall bias. In contrast, when participants tuned to a nonstigmatized group audience (shared-reality-goal condition), the recall bias was found. Epistemic trust in the audience (an index of experienced shared reality) was higher in the shared reality (vs. the politeness-goal) condition and was significantly correlated with the size of the recall bias. Thus, audience tuning in the condition that replicated the standard paradigm apparently served the creation of a shared reality to a greater extent than did audience tuning in the alternative-goal condition. The reduced recall bias could not be explained by greater rehearsal of original input information during message production, better retrieval of or access to the content of the original information, or a better ability to discriminate between original information versus communicated information.

We designed Experiments 2a and 2b to induce alternative, nonshared reality goals in a more direct and explicit way than in Experiment 1, specifically by offering a monetary incentive. In Experiment 2a, the delay between message production and recall was increased to 3 weeks. We chose this long interval for two reasons. First, it is possible that existing differences in memory for the content of the original information or source discrimination can be detected only after longer intervals (e.g., Higgins & Rholes, 1978). Second, a longer interval reduces the potential impact of temporary influences in the study setting, such as demand characteristics or pressures to conform. In Experiment 2b, we also added another nonshared reality condition, in which participants were asked to entertain their audience with an exaggerated, caricature-like description of the target person.

## Experiment 2a

Participants in an incentive-goal condition were motivated to tune to their audience by the prospect of a monetary reward ($20).

Table 3

*Experiment 1: Attributions (Mean Proportions) of Items to Original Information, Participants' Own Message, and Neither Depending on the Actual Source of Items and the Communication-Goal Condition (Shared Reality vs. Politeness)*

| Item source | Attribution to source | | | | | |
|---|---|---|---|---|---|---|
| | Original information | | Own message | | Neither | |
| | M | SD | M | SD | M | SD |
| Communication goal: Shared reality | | | | | | |
| Only original | .48 | .17 | .14 | .10 | .37 | .17 |
| Own message | .12 | .19 | .85 | .27 | .04 | .11 |
| Original also in own message | .51 | .17 | .17 | .16 | .32 | .18 |
| Neither | .20 | .13 | .06 | .07 | .74 | .17 |
| Communication goal: Politeness | | | | | | |
| Only original | .51 | .13 | .10 | .11 | .39 | .14 |
| Own message | .16 | .26 | .78 | .29 | .06 | .11 |
| Original also in own message | .56 | .28 | .14 | .22 | .30 | .27 |
| Neither | .17 | .09 | .07 | .07 | .77 | .11 |

*Note.* Proportions were calculated by dividing the number of attributions to a source (*original information, own message, neither*) by the total number of items from each of the four sources (only original information, only own message, original information and also in own message, neither). In both communication-goal conditions, $n = 30$. Proportions within rows (across columns) may add up to values slightly deviating from 1.00 because of rounding error.

Such a direct inducement may lead to stronger audience tuning relative to a shared-reality-goal condition. However, such stronger tuning should lead to a reduced audience-congruent recall bias because communicators should not experience sufficient epistemic trust associated with creating a shared reality about the target.

### Method

*Participants and design.* Participants were 57 undergraduate students at Columbia University in New York City (35 women and 22 men; mean age = 21.6, $SD$ = 5.2), who received a compensation of $13 for participating in two sessions. Five participants in the incentive-goal condition were randomly selected to receive an additional $20, consistent with the cover story. On the basis of the suspicion probes (see Experiment 1), 2 participants were excluded, resulting in the above sample. The experiment was based on a 2 (audience attitude: positive vs. negative) × 2 (communication goal: shared reality vs. incentive) between-participants design.

*Procedure.* The procedure was analogous to the procedure of Experiment 1 with the following exceptions: In the incentive-goal condition, participants were told that those 5 participants who adapted their message to the audience's perspective on the target person to the greatest extent would receive a reward of $20. No explicit positive feedback was provided concerning the referential communication task. The free-recall task was administered in a second session 3 weeks after message production. The manipulation check was adapted.

*Materials.* We used the same materials as in Experiment 1, except that we did not use a source discrimination test or measure of epistemic trust. Also, English versions of all materials were used. A pretest confirmed that the English target passages were ambiguous.

*Measures.* Intercoder correlations for message valence and recall valence ($r$ = .98 and .85, respectively) and for numbers of accurate reproductions ($r$ = .84) were sufficiently high. Means of the two coders' scores for each variable served as DVs in the subsequent analyses.

### Results and Discussion

*Manipulation check.* All participants except 1 in the incentive-goal condition remembered that they were offered a monetary incentive for adapting their message to the audience's perspective. All but 4 participants also recalled correctly the amount of the monetary incentive (i.e., $20). None of the participants in the shared-reality-goal condition reported that they were motivated by an incentive to adapt their message to the audience.

*Message and recall valence.* Participants tuned their message to their audience's attitude (see Table 4, Message column), as shown by a significant main effect for audience attitude, $F(1, 53)$ = 24.16, $p < .001$, $\eta^2$ = .31, in a 2 (positive vs. negative audience attitude) × 2 (shared reality vs. incentive goal) ANOVA for message valence. Separate planned contrasts confirmed this effect in both the shared-reality-goal and incentive-goal condition, $F(1, 53)$ = 3.31, $p < .05$, $d$ = 0.67, and, $F(1, 53)$ = 25.78, $p < .001$, $d$ = 1.93, respectively. A significant Audience Attitude × Communication Goal interaction, $F(1, 53)$ = 5.97, $p < .05$, $\eta^2$ = .10, indicated audience tuning was stronger under the incentive goal. There was no main effect for communication goal ($F < 1$, $ns$).

It is important to note that recall valence was biased in the direction of the audience's attitude only in the shared-reality-goal condition (see Table 4, Recall column): Under a shared reality goal, participants in the positive-attitude condition recalled more positive aspects about the target person than participants in the negative-attitude condition, $F(1, 53)$ = 4.24, $p < .05$, $d$ = 0.80, whereas no such effect was found in the incentive-goal condition ($F < 1$, $ns$). An Audience Attitude × Communication Goal ANOVA yielded an interaction that approached significance, $F(1, 53)$ = 3.25, $p < .08$, $\eta^2$ = .07, and no significant main effects ($Fs < 1.5$, $ps > .23$).

The correlation between message and recall valence was significantly higher in the shared-reality-goal condition, $r(28)$ = .45, $p < .01$, than in the incentive-goal condition, $r(25)$ = .09, $ns$, as indicated by a significant Message Valence × Communication Goal interaction ($\beta$ = .27), $t(53)$ = 2.01, $p < .05$, in a regression with message valence and communication goal (shared reality goal = +1, incentive goal = −1) as predictors of recall valence (see also Experiment 1).

Given that audience tuning was stronger in the incentive-goal than the shared-reality-goal condition, one may suspect that the elimination of the recall bias in the former condition could be because of a contrast effect in those participants who produced extremely tuned messages (see Herr, Sherman, & Fazio, 1983). To explore this possibility, we divided participants in the incentive-goal condition into high-tuners and low-tuners on the basis of a median split for a unipolar measure of message bias[8] ($Mdn$ = 3.00). If high-tuners contrasted their recall away from their messages, then the correlation between message and recall valence should be negative. However, we found that for high-tuners, this correlation was not negative, $r(14)$ = .07, $ns$, and, if anything, more positive than for low-tuners, $r(11)$ = −.25, $ns$, which is inconsistent with the notion of a contrast correction.

*Accurate reproductions in message and free-recall protocols.* Participants in the shared reality condition appeared to include in their messages more accurate reproductions of the original target information (see Table 2 and Experiment 2a) than did participants in the incentive-goal condition, but this difference was not significant, $F(1, 53)$ = 2.33, $p$ = .13, $\eta^2$ = .04 (the audience attitude main effect and the interaction were nonsignificant; $Fs < 1$, $ps > .36$). The direction of this effect was opposite to an account that would explain the reduced recall bias by better rehearsal of the original information during message production. For the free-recall protocols, there were no main effects or interactions (all $Fs < 1.3$, all $ps > .26$). The numbers of accurate reproductions were not significantly correlated with the recall bias ($ps > .97$). Thus, there was, again, no indication that the lower recall bias in the incentive-goal condition was because of better rehearsal or more accurate retrieval of the content from the original target information.

In summary, Experiment 2a shows that participants who were motivated by an external incentive to tune their message to their audience's attitude did not exhibit the audience-congruent recall bias, despite the strong audience tuning in this condition. In

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[8] A unipolar measure for the audience-congruent bias in messages was calculated analogous to the unipolar measure of recall bias (see Footnote 6). Message valence scores in the negative-attitude condition were multiplied by −1, whereas valence scores in the positive-attitude condition remained unchanged. Thus, the more a message was biased in the direction of the audience's attitude, the more positive was the unipolar bias score (see Echterhoff, Higgins, & Groll, 2005).

Table 4

*Experiment 2a: Valence of Message and Recall Protocols as a Function of Audience Attitude and Communication Goal (Shared Reality vs. Incentive)*

| | Protocol | | | | | | | |
| | Message | | | | Recall | | | |
| | Audience attitude | | | | | | | |
| | Positive | | Negative | | Positive | | Negative | |
| Communication goal | M | SD | M | SD | M | SD | M | SD |
|---|---|---|---|---|---|---|---|---|
| Shared reality | 0.31 | 2.25 | −1.06 | 1.85 | −0.31 | 1.18 | −1.35 | 1.41 |
| Incentive | 2.07 | 2.12 | −2.00 | 2.09 | −0.53 | 1.73 | −0.25 | 0.97 |

*Note.* Message and recall valence were coded on an 11-point scale ranging from −5 (*extremely negative*) to +5 (*extremely positive*). Shared reality/positive, $n = 13$; incentive/positive, $n = 15$; shared reality/negative, $n = 17$; incentive/negative, $n = 12$.

contrast, an audience-tuning effect was found in the standard shared reality condition.

A limitation of Experiment 2a was the lack of measures of source discrimination and epistemic trust hypothesized to reflect the experience of shared reality. Furthermore, Experiment 2a did not include a measure of mood (which might be enhanced by the prospect of an incentive), and it is well-known that mood can affect information processing (e.g., Martin & Clore, 2001). These limitations were remedied in Experiment 2b. Also, to extend our claim that a shared reality goal differs from alternative goals, we examined another nonshared reality goal that is less instrumental than an incentive goal: We chose something that people often do just for fun —audience tuning serving an entertainment goal (see Higgins, 1981).

## Experiment 2b

In Experiment 2b, we compared three audience-tuning goals: achieving a shared reality versus obtaining an incentive versus entertaining the audience. Whereas Experiment 1 contained a measure of epistemic trust in the audience (as in Echterhoff, Higgins, & Groll, 2005), we further developed the measure to include another important facet, that is, trust in the audience-tuned message.

### Method

*Participants and design.* Participants were 97 students at the University of Bielefeld (60 women and 37 men; mean age = 22.3, $SD = 2.7$) who received a compensation of 5 euro (about U.S. $6) or course credit. In the incentive-goal condition, 3 participants were randomly selected to receive an additional 15 euro (about U.S. $18). On the basis of the suspicion probes, 4 participants were excluded, resulting in the above sample. A 2 (audience attitude: positive vs. negative) × 3 (communication goal: shared reality vs. incentive vs. entertainment) between-participants design was used.

*Procedure.* The study was adapted to a computer-based administration (in VisualBasic), reducing interaction with the experimenter. Participants were told they would communicate with their audience via a computer-based intercom system and would send the message electronically. In fact, the message was not sent but

merely recorded in a data file. No explicit positive feedback concerning the communication task was provided.

Instructions that had been provided orally by the experimenter in the previous studies were recorded (as Waveform files) and played to the participants through headphones. This way, we could keep constant the subtlety of delivering the information about audience's attitude (for the role of subtle delivery, see Todorov, 2002). The instruction in the incentive-goal condition was slightly changed to deemphasize the competitive character of audience tuning: Rather than offering a reward for tuning to the greatest extent, the participants in this condition were told that among those who adapted their message to their audience's perspective, 3 would be randomly selected to receive a reward of 15 euro. In the entertainment-goal condition, participants were told that they should try their best to amuse their addressee by exaggerating the degree to which they adapted their message to the addressee's attitude toward the target. After message production and an unrelated 10-min filler task, participants completed eight items designed to assess their epistemic trust in their audience (see the *Materials* section), indicated their mood ("Are you presently in a good or bad mood?" "How do you feel at the moment?" ranging from 1 [*very bad*] to 7 [*very good*]), and were asked to recall the original information about the target person in a free format. Finally, as in Experiment 1, we administered a source discrimination test. Otherwise, the procedure was the same as in Experiment 1.

*Materials.* All materials were adapted to a computer-based administration. We used a three-item manipulation check to assess the extent to which communicators' felt their audience tuning was motivated by external demands: (a) "To what extent did you take into account external motives when you wrote your description of the target person?" (b) "To what extent did external demands affect your description to your addressee?" (c) "To what extent did the instructions about the communication task influence your description for your addressee?" Assessments were made on 8-point scales ranging from 1 (*not at all*) to 8 (*very much*).

We also used an eight-item measure of the participants' experience of epistemic trust, regarding both their audience and their audience-congruent message, based on the following rating items (8-point scales, ranging from 1 [*not at all*] to 8 [*very much*]): (a)

"Is your addressee a person whose judgment about other people one can trust?" (see Echterhoff, Higgins, & Groll, 2005), (b) "Is your addressee a trustworthy source of information about the target person?" (c) "Does your addressee appear to you as trustworthy?" (d) "Does your addressee appear to you as a reliable source of knowledge?" (e) "How well does your message to your addressee reflect Michael's real characteristics?" (f) "To what extent do you trust the view of the target person you expressed in your message to the audience?" (g) "To what extent does your message to the addressee communicate an appropriate view of the target person?" (h) "To what extent could other people trust the view of the target person you expressed in your message to the audience?"

The source discrimination test differed from the one used in Experiment 1 in the following respects: First, because in Experiment 1 all participants reproduced some items from the original target information in their message, we included the response option *both original information and own message*. Second, because in Experiment 1 there was no evidence that source attributions for own-message items differed between the communication-goal conditions, we did not include these items. Third, the set of test items included 18 items from the original target passages and 18 distractor items (i.e., items from neither source). The mean number of original-also-in-own-message items for the source discrimination test was 8.24 ($SD = 2.68$), leaving a mean number of 9.76 items that were only from the original information.

*Measures.* Intercoder correlations for message valence and recall valence ($r = .92$ and $.85$, respectively) and for numbers of accurate reproductions ($r = .82$) were sufficiently high. Means of the two coders' scores for each variable served as DVs in the subsequent analyses. The reliability of the eight-item epistemic trust measure (Cronbach's $\alpha = .83$), the three-item measure of audience-tuning motives (Cronbach's $\alpha = .77$), and the two mood ratings ($r = .84$, $p < .001$) was sufficiently high. Mean scores for each of these measures were used in the data analyses.

Responses on the source discrimination test were summed up for each of the four attributions (*original information*, *own message*, *neither,* or *both*) and divided by the total number of items from the three sources (only original, original also in own message, neither), resulting in a $4 \times 3$ cross table of source attribution proportions analogous to those in Experiment 1. Analogous to the calculation described in Experiment 1, both-to-both attributions were guessing-adjusted by subtracting the proportion of neither-to-both attributions.

## Results and Discussion

*Manipulation check.* As expected, participants in the non-shared reality conditions (entertainment goal and the incentive goal) reported that their audience tuning was motivated by external demands to a greater extent ($M = 6.52$, $SD = 1.31$; and $M = 4.89$, $SD = 1.99$, respectively) than did participants in the shared-reality-goal condition ($M = 4.03$, $SD = 1.57$, respectively), $t(64) = 6.26$, $p < .001$, $d = 1.30$, and, $t(63) = 2.07$, $p < .05$, $d = 0.44$. The correlation between this measure and recall bias was small and nonsignificant, $r(95) = .06$, $p = .59$. Thus, there was no evidence that feeling motivated by external demands predicted the main DV.

*Message and recall valence.* Participants in all communication-goal conditions tuned their message to their audience's attitude (see Table 5, Message column), as indicated by a significant main effect for audience attitude, $F(1, 91) = 187.10$, $p < .001$, $\eta^2 = .67$, in a 2 (positive vs. negative audience attitude) $\times$ 3 (shared reality vs. incentive vs. entertainment goal) ANOVA for message valence. Separate planned contrasts confirmed strong audience tuning in each of the three communication-goal conditions, $F(1, 91) = 11.24$, $p < .001$, $d = 1.38$; $F(1, 91) = 140.04$, $p < .001$, $d = 1.91$; and, $F(1, 91) = 188.51$, $p < .001$, $d = 5.51$, for the shared reality, incentive, and entertainment conditions, respectively. Audience tuning was stronger in the incentive and entertainment condition than in the shared reality condition, as indicated by a significant Audience Attitude $\times$ Communication Goal interaction, $F(2, 91) = 27.35$, $p < .001$, $\eta^2 = .38$. The main effect for communication goal approached significance, $F(2, 91) = 2.88$, $p = .06$, $\eta^2 = .06$.

More important, despite significant audience tuning, recall valence was not biased in the direction of the audience's attitude in the two alternative-goal conditions (incentive and entertainment), but it was biased in the shared-reality-goal condition (see Table 5, Recall column). Planned contrasts revealed a significant effect only in the latter condition, $F(1, 91) = 5.96$, $p < .01$, $d = 1.06$. There was no recall effect in either the incentive-goal or entertainment-goal condition ($Fs < 1$, $ns$). (Using the effect size in the shared-reality-goal condition, the statistical power to detect a difference was .91 for the entertainment-goal condition and .89 for the incentive-goal condition.) The differential communication goal effect on recall valence was confirmed by a significant Audience Attitude $\times$ Communication Goal interaction, $F(1, 93) = 3.98$, $p < .05$, $\eta^2 = .04$.

As expected, the correlation between message and recall valence was significantly higher in the shared-reality-goal condition, $r(30) = .55$, $p < .01$, than in the incentive-goal and entertainment-goal condition, $r(30) = .14$, $ns$, and, $r(31) = .01$, $ns$, respectively, as indicated by a significant Message Valence $\times$ Communication Goal interaction ($\beta = .33$), $t(93) = 2.61$, $p < .01$, in a regression with message valence ($z$ transformed) and communication goal (shared reality goal $= +2$; incentive goal $= -1$; entertainment goal $= -1$) as predictors of recall valence.

As in Experiment 2a, we examined whether participants performing extreme audience tuning in the alternative-goal conditions may have contrasted their recall away from their messages. Again, participants in these conditions were divided into high-tuners and low-tuners on the basis of a median split for the unipolar measure of message bias (see Footnote 8; $Mdn = 4.00$). Message and recall valence were uncorrelated for high-tuners, $r(33) = .02$, $ns$, and for low-tuners, $r(28) = .01$, $ns$. Thus, there was no evidence that a contrast effect was responsible for the reduction of the recall bias in the two nonshared reality conditions.

*Epistemic trust.* As expected, participants in the shared-reality-goal condition experienced greater epistemic trust ($M = 4.70$, $SD = 0.82$) than did those in the incentive-goal condition ($M = 4.15$, $SD = 0.94$) or in the entertainment-goal condition ($M = 3.86$, $SD = 1.31$), $t(63) = 2.45$, $p < .01$, $d = 0.62$, and, $t(64) = 3.05$, $p < .01$, $d = 0.77$, respectively. The difference between the two nonshared-reality-goal conditions was not significant, $t(64) = 1.02$, $p > .31$. An Audience Attitude $\times$ Communication Goal (contrasting shared reality goal vs. nonshared reality goals) ANOVA revealed a significant main effect of communication goal, $F(1, 93) = 12.27$, $p < .001$, $\eta^2 = .12$.

It is notable that epistemic trust was higher in the positive-audience attitude condition ($M = 4.64$) than in the negative-

Table 5
*Experiment 2b: Valence of Message and Recall Protocols as a Function of Audience Attitude and Communication Goal (Shared Reality vs. Incentive vs. Entertainment)*

| | Protocol | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Message | | | | Recall | | | |
| | Audience attitude | | | | | | | |
| | Positive | | Negative | | Positive | | Negative | |
| Communication goal | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Shared reality | 1.60 | 1.55 | −0.50 | 1.47 | 1.06 | 0.70 | 0.13 | 1.02 |
| Incentive | 2.56 | 1.84 | −1.63 | 2.48 | 0.29 | 0.95 | 0.30 | 1.45 |
| Entertainment | 3.82 | 2.02 | −4.63 | 0.79 | 0.68 | 1.22 | 0.66 | 1.04 |

*Note.* Message and recall valence were coded on an 11-point scale ranging from −5 (*extremely negative*) to +5 (*extremely positive*). Shared reality/positive, *n* = 16; incentive/positive, *n* = 17; entertainment/positive, *n* = 17; shared reality/negative, *n* = 16; incentive/negative, *n* = 15; entertainment/negative, *n* = 16.

audience attitude condition (*M* = 3.68), as indicated by a main effect of audience attitude, $F(1, 91) = 20.62$, $p < .001$, $\eta^2 = .18$. This positive–negative asymmetry (see also Echterhoff, Higgins, & Groll, 2005) is consistent with a shared reality account, which would predict that participants are more willing to share reality with an audience who likes other people—the target in this case—than an audience who dislikes other people. There was no significant Audience Attitude × Communication Goal interaction ($F < 1$, *ns*).

As in Experiment 1, we examined a possible mediation of the communication goal effect on recall bias by epistemic trust. As indicated by the previous analyses, the first three conditions suggested by Baron and Kenny (1986) were met: Both recall bias and epistemic trust were greater in the shared-reality-goal condition than in the nonshared-reality-goal conditions ($\beta = .18$), $t(95) = 1.73$, $p < .05$ (Condition 1), and, ($\beta = .30$), $t(95) = 3.04$, $p < .01$ (Condition 2), respectively, and greater epistemic trust was associated with a higher recall bias ($\beta = .25$), $t(95) = 2.54$, $p < .01$ (Condition 3). It is important to note that when communication goal (contrast coded: shared reality goal = +2, incentive/entertainment goal = −1) and epistemic trust were included as predictors of recall bias, only epistemic trust remained significant ($\beta = .22$), $t(94) = 2.11$, $p < .05$, whereas the effect of communication goal was reduced to nonsignificance ($\beta = .11$), $t(94) = 1.05$, $p = .30$. The indirect effect of communication goal on recall bias via epistemic trust was significant in a Sobel test ($z = 1.68$, $p < .05$; Condition 4) and in a bootstrapping procedure that yielded a 95% CI around the indirect effect ($ab = .055$), excluding zero (.005–.118). These findings suggest that the effect of communication goal on recall bias was mediated by participants' epistemic trust (see Figure 1).

*Accurate reproductions in message and free-recall protocols.* An Audience Attitude × Communication Goal ANOVA yielded no significant main effects of communication goal for the number of accurate reproductions (of the original target information) in both message and recall protocols (see Table 2, Experiment 2b) ($Fs < 1$). Accurate reproductions, in either message or recall, were not correlated with the size of the recall bias ($ps > .76$). Thus, there was again no indication that the lower recall bias in the nonshared-reality-goal conditions was because of better rehearsal or more accurate retrieval of the original information.

*Mood.* Differences among the communication-goal conditions in participants' mood were small (shared reality goal: *M* = 4.61, *SD* = 1.28; incentive goal: *M* = 4.72, *SD* = 1.26; entertainment-goal condition: *M* = 4.47, *SD* = 1.02) and nonsignificant (all *F*s from planned contrasts < 1). Mood was not correlated with the size of the recall bias, $r(95) = -.03$, $p = .77$. Thus, mood differences could not account for the observed differences in the bias.

*Source attribution.* There was no indication of differences in source attribution across the communication-goal conditions (see Table 6): Audience Attitude × Communication Goal ANOVAs produced no significant main effects of communication goal for the 12 source attribution proportions ($Fs < 2.2$, $ps > .13$) or for the three guessing-adjusted proportions (all $Fs < 1.2$, *ns*). Recall bias was not significantly correlated with any of the 15 source discrimination scores (all $rs < .18$, $ps > .10$).

As in Experiment 1, we also examined possible differences in the hit rate for the original information inferred from the source discrimination data. No significant main effects of communication goal emerged in the Audience Attitude × Communication Goal ANOVA ($F < 1$, *ns*). The inferred hit rate was not significantly correlated with recall bias ($p = .72$).
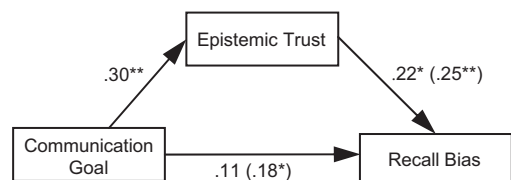


*Figure 1.* Experiment 2b: Mediation analysis with communication goal as the independent variable (coded to contrast shared reality [= +2] with both incentive [= −1] and entertainment [= −1]), epistemic trust (as an index of experienced shared reality) as mediator, and audience-congruent valence bias in recall (unipolar measure) as the dependent variable. Path coefficients are standardized β coefficients from (multiple) regression analyses. The numbers in parentheses represent the direct effect (bivariate β coefficients) of each of the two predictors (communication goal and epistemic trust) on recall bias prior to the inclusion of the other predictor. *p < .05. **p < .01.

Table 6

*Experiment 2b: Attributions (Mean Proportions) of Items to Original Information, Participants'*
*Own Message, Both and Neither Depending on the Actual Source of Items and the*
*Communication-Goal Condition (Shared Reality vs. Incentive vs. Entertainment)*

| | Attribution To source | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Original information | | Own message | | Both | | Neither | |
| Item source | *M* | *SD* | *M* | *SD* | *M* | *SD* | *M* | *SD* |
| Communication goal: Shared reality | | | | | | | | |
| Only original | .52 | .25 | .05 | .08 | .00 | .00 | .43 | .25 |
| Original also in own message | .39 | .32 | .02 | .05 | .58 | .33 | .01 | .03 |
| Neither | .11 | .10 | .08 | .08 | .12 | .09 | .69 | .14 |
| Communication goal: Incentive | | | | | | | | |
| Only original | .60 | .23 | .04 | .07 | .00 | .00 | .35 | .24 |
| Original also in own message | .36 | .23 | .00 | .02 | .63 | .25 | .00 | .02 |
| Neither | .12 | .09 | .06 | .06 | .12 | .08 | .70 | .13 |
| Communication goal: Entertainment | | | | | | | | |
| Only original | .63 | .22 | .04 | .11 | .00 | .00 | .33 | .22 |
| Original also in own message | .37 | .22 | .01 | .02 | .62 | .21 | .00 | .02 |
| Neither | .15 | .09 | .06 | .06 | .13 | .08 | .66 | .12 |

*Note.* Proportions were calculated by dividing the number of attributions to a source (*original information, own message, both, neither*) by the total number of items from each of the three sources (only original information, original information and also in own message, neither). Proportions within rows (across columns) may add up to values slightly deviating from 1.00 because of rounding error. Shared reality, *n* = 32; incentive, *n* = 32; entertainment, *n* = 33.

In summary, replicating and extending our previous studies, participants in the shared-reality-goal condition exhibited the audience-tuning effect on recall, whereas participants in the nonshared-reality-goal conditions (incentive; entertainment) did not. More important, we found the expected differences in communicators' epistemic trust—higher in shared reality than in nonshared reality conditions—and established that the effect of communication goal on the recall bias was mediated by the epistemic trust hypothesized to reflect the experienced shared reality. Again, differences in the size of the recall bias could not be explained by other possible mechanisms (such as rehearsal of original information, mood, or source discrimination ability).

In an earlier study, Todorov (2002) examined a different nonshared reality goal—responding to an explicit demand of the experimenter to tune to the attitude of the audience. We conducted another experiment to test whether the audience-tuning effect on memory is reduced when audience tuning is motivated by the goal of complying with a blatant instruction (the compliance-goal condition) versus when it serves the creation of a shared reality (the standard condition). We predicted that our measure of epistemic trust would again mediate the effects of different audience-tuning goals on the magnitude of the audience-congruent recall bias.

## Experiment 3

### Method

*Participants and design.* Participants were 76 students at the University of Bielefeld (41 women and 35 men; mean age =

23.28, *SD* = 2.72) who received either a compensation of 5 euro (about U.S. $6) or course credit. On the basis of the suspicion probes, 1 participant was excluded, resulting in the above-described sample. The experiment was based on a 2 (audience attitude: positive vs. negative) × 2 (communication goal: shared reality vs. compliance) between-participants design.

*Procedure.* Participants in the compliance-goal condition were told to take into account their audience's attitude. They were asked to adapt their description of the target person to the audience's attitude, that is, to describe the target person in a positive or negative way, depending on the audience-attitude condition. Otherwise, the procedure was the same as in Experiment 2b.

*Materials.* The same materials as in Experiment 2b were used with one exception: Because there was no incentive condition, we did not investigate possible mood differences.

*Measures.* Intercoder correlations for message valence and recall valence (*r* = .96 and .84, respectively) and for numbers of accurate reproductions (*r* = .84) were sufficiently high. Means of the two coders' scores for each variable served as DVs in the subsequent analyses. The same three-item measure as in Experiment 2b (Cronbach's $\alpha$ = .70) was used to assess the extent to which communicators' felt their audience tuning was motivated by external demands. The same eight-item epistemic trust measure as in Experiment 2b was used (Cronbach's $\alpha$ = .86). The source attribution proportions were calculated as in Experiment 2b.

## Results and Discussion

*Manipulation check.* Participants in the compliance-goal condition reported to a greater extent that their audience tuning was motivated by external demands ($M = 4.51$, $SD = 1.80$) than did participants in the shared reality condition ($M = 3.80$, $SD = 1.40$), $t(74) = 1.92$, $p < .05$, $d = 0.44$. This measure was not correlated with recall bias, $r(74) = .03$, $p = .80$. Thus, again there was no evidence that feeling motivated by external demands predicted the main DV.

*Message and recall valence.* Participants tuned their message to their audience's attitude (see Table 7, Message column), as indicated by a significant main effect for audience attitude, $F(1, 72) = 77.19$, $p < .001$, $\eta^2 = .52$, in a 2 (positive vs. negative audience attitude) $\times$ 2 (shared reality vs. compliance goal) ANOVA. Separate planned contrasts confirmed this effect in both the shared-reality-goal and the incentive-goal condition, $F(1, 72) = 16.35$, $p < .001$, $d = 1.29$, and, $F(1, 72) = 70.26$, $p < .001$, $d = 2.77$, respectively. The stronger audience tuning in the compliance-goal condition than in the shared goal condition was reflected by a significant interaction, $F(1, 72) = 9.41$, $p < .01$, $\eta^2 = .12$. There was no main effect for communication goal ($F < 1$, *ns*).

Despite significant audience tuning of messages in both communication-goal conditions, recall valence was biased toward the audience's attitude only in the shared-reality-goal condition (see Table 7, Recall column), $F(1, 72) = 5.79$, $p < .01$, $d = 1.09$— not in the compliance-goal condition ($F < 1$, *ns*). (On the basis of the effect size in the shared-reality-goal condition, the statistical power to detect a difference in the compliance-goal condition was .95.) The differential effect on recall was reflected by an Audience Attitude $\times$ Communication Goal interaction that approached significance, $F(1, 72) = 2.93$, $p = .09$, $\eta^2 = .04$.

Again, the correlation between message and recall valence was significantly higher in the shared-reality-goal condition, $r(36) = .53$, $p < .001$, than in the compliance-goal condition, $r(36) = -.04$, *ns*, as indicated by a significant Message Valence $\times$ Communication Goal interaction ($\beta = .27$), $t(53) = 2.01$, $p < .05$, in a regression with message valence ($z$ scores) and communication goal (shared reality goal $= +1$; compliance goal $= -1$) as predictors of recall valence.

As in Experiments 2a and 2b, we explored whether participants performing extreme audience tuning in the alternative-goal condition contrasted their recall away from their message. Participants in the compliance-goal condition were divided into high-tuners and low-tuners on the basis of a median split for the unipolar message bias measure ($Mdn = 2.50$). Message and recall valence were uncorrelated for high-tuners, $r(18) = -.11$, $p = .62$, and for low-tuners, $r(28) = .18$, $p = .46$. Thus, we found again no evidence that a contrast effect was responsible for the reduction of the recall bias in the nonshared reality condition.

*Epistemic trust.* Consistent with our predictions, participants in the shared-reality-goal condition experienced greater epistemic trust ($M = 4.93$, $SD = 1.02$) than did those in the compliance-goal condition ($M = 4.34$, $SD = 1.07$), $F(1, 72) = 6.59$, $p < .01$, $\eta^2 = .08$. Again, epistemic trust was also higher in the positive-audience attitude condition ($M = 4.99$) than in the negative-audience attitude condition ($M = 4.28$), $F(1, 72) = 9.88$, $p < .001$, $\eta^2 = .12$.

We again examined a possible mediation of the communication goal effect on recall bias by epistemic trust and found that all four conditions suggested by Baron and Kenny (1986) were met: Both recall bias and the epistemic trust were greater in the shared-reality-goal condition than in the compliance-goal condition ($\beta = .19$), $t(74) = 1.68$, $p < .05$ (Condition 1), and ($\beta = .27$), $t(74) = 2.44$, $p < .01$ (Condition 2), respectively. Greater epistemic trust was also associated with a higher recall bias ($\beta = .36$), $t(74) = 3.28$, $p < .001$ (Condition 3). More important, when communication goal (shared reality goal $= +1$, compliance goal $= -1$) and epistemic trust were included as predictors of recall bias, only epistemic trust remained significant ($\beta = .33$), $t(73) = 2.91$, $p < .01$, whereas the effect of communication goal was reduced to nonsignificance ($\beta = .10$, $t < 1$, $p = .37$). The indirect effect of communication goal on recall bias via epistemic trust was significant in a Sobel test ($z = 1.81$, $p < .05$; Condition 4) and in a bootstrapping procedure that yielded a 95% CI around the indirect effect ($ab = .110$), excluding zero (.016–.230). These findings indicate that the effect of communication goal on recall bias was mediated by epistemic trust (see Figure 2).

*Accurate reproductions in message and free-recall protocols.* Participants in the shared-reality-goal condition included more accurate reproductions of the original information in their messages and in their free recall (see Table 2, Experiment 3) than did participants in the compliance-goal condition, $F(1, 72) = 10.25$, $p < .001$, $\eta^2 = .13$, and, $F(1, 72) = 3.61$, $p = .06$, $\eta^2 = .05$, for message and recall, respectively. No significant interactions

Table 7

*Experiment 3: Valence of Message and Recall Protocols as a Function of Audience Attitude and Communication Goal (Shared Reality vs. Compliance With Blatant Demand)*

| | Protocol | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Message | | | | Recall | | | |
| | Audience attitude | | | | | | | |
| | Positive | | Negative | | Positive | | Negative | |
| Communication goal | M | SD | M | SD | M | SD | M | SD |
| Shared reality | 1.37 | 1.67 | −0.79 | 1.68 | 0.76 | 0.82 | −0.11 | 0.77 |
| Compliance | 2.18 | 1.10 | −2.29 | 2.00 | 0.11 | 1.22 | 0.11 | 1.48 |

*Note.* Message and recall valence were coded on an 11-point scale ranging from −5 (*extremely negative*) to +5 (*extremely positive*). All cells $n = 19$.
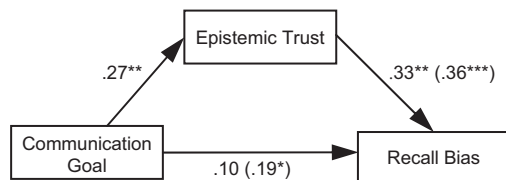
*Figure 2.* Experiment 3: Mediation analysis with communication goal as the independent variable (shared reality goal [= +1] vs. compliance with blatant demand [= −1]), epistemic trust (as an index of experienced shared reality) as mediator, and audience-congruent valence bias in recall (unipolar measure) as the dependent variable. Path coefficients are standardized β coefficients from (multiple) regression analyses. The numbers in parentheses represent the direct effect (bivariate β coefficients) of each of the two predictors (communication goal and epistemic trust) on recall bias prior to the inclusion of the other predictor. $^*p < .05.$ $^{**}p < .01.$ $^{***}p < .001.$

emerged ($Fs < 1$).[9] Accurate reproductions in message and free recall were, if anything, positively correlated with recall bias, $r(74) = .24$, $p < .05$, and, $r(74) = .29$, $p < .05$, respectively. These findings are opposite to the prediction that the reduced recall bias in the compliance-goal (vs. shared reality) condition may be because of better rehearsal or retrieval of the content of the original target information.

*Source attribution.* There was again no indication that source attributions differed between the communication-goal conditions. Audience Attitude × Communication Goal ANOVAs yielded no significant main effects of communication goal for the 12 source attribution proportions ($Fs < 2.3$, $ps > .13$) or for the three guessing-adjusted scores ($Fs < 1.9$, $ps > .17$). None of the correlations between these 15 scores and recall bias were significant ($ps > .19$) except for a correlation between recall bias and attributions of original-and-also-message items to the message that approached significance, $r(74) = .17$, $p = .10$. Given the inflation of Type I error across multiple tests, this latter correlation could not be regarded as meaningful.

No significant main effect of communication goal emerged for the hit rate for the original information inferred from the source discrimination data ($F < 1.3$, *ns*). The correlation between the inferred hit rate and recall bias was significantly positive, $r(74) = .26$, $p < .05$, indicating that participants who correctly accepted items from the original target passages as old exhibited a higher bias. This finding is again contrary to the notion that a reduction of the recall bias may be because of improved memory for the original information.

In summary, participants who followed a blatant demand to tune to their audience (compliance-goal condition) exhibited a reduced audience-congruent recall bias relative to participants in the shared reality condition, despite the fact that they tuned their message more to their audience's attitude. It is important to note that Experiment 3 also replicated the previous finding that participants' epistemic trust mediated the communication goal effect on the size of the recall bias. In contrast, the measure assessing the extent to which participants felt motivated by external demands did not predict recall bias. Thus, complementing the evidence presented by Todorov (2002), our findings clearly suggest that the epistemic trust reflecting experienced shared reality is a mechanism mediating the audience-tuning effect on recall, whereas feeling motivated by external demands is not. Finally, there was again no evidence

that other possible variables (rehearsal or retrieval of the original target information, or source discrimination) might mediate the obtained effects.

## A Meta-Analytic Overview of the Main Statistical Results

We conducted meta-analyses to synthesize our main results (see Hedges & Olkin, 1985), based on the variables that were measured in all, or most, of our experiments and that represented the main possible mechanisms that might underlie differential audience-tuning effects: epistemic trust (as an index of experienced shared reality), rehearsal of the original target information, retrieval of original target information (assessed by accurate reproductions in free recall and inferred hit rates from source attribution data), and the overall score of source identification (AGASI). The correlation coefficient $r$ was used as a measure of effect size for the associations between these variables and recall bias. Table 8 contains the single-study and mean (weighted) effect sizes (with Type I error probabilities) on the basis of bivariate regression analyses (see Table 8, top panel) and multiple regression analyses (see Table 8, bottom panel). Multiple regressions were calculated to take into account intercorrelations between the predictors, using the semi-partial correlation with the DV as the effect size measure. Meta-analyses were calculated with the software META (Schwarzer, 1989).

The association between epistemic trust and the audience-congruent recall bias was clearly the strongest and highly significant, both in bivariate regressions ($r = .28$, $p < .001$) and multiple regressions ($r = .26$, $p < .001$). According to Cohen (1988), this represents an effect of medium size, which we found was homogeneous across studies, $\chi^2(2, N = 233) = 0.93$, $p = .63$; and, $\chi^2(2, N = 233) = 0.32$, $p = .85$, for the bivariate and multiple regression effects, respectively; $df = 2$. It would need more than a dozen studies with an effect size of zero to reduce these two mean effects to .05 (fail-safe $N = 13.7$ and 12.4, for the bivariate and multiple regression effects, respectively).

The mean effects of the other variables were considerably smaller and did not attain the significance level of $p < .05$, even given the large sample size and the resulting high power ($> .99$ for detecting the effect sizes found for epistemic trust). Moreover, the small effects approaching significance were, if anything, opposite to the direction predicted by the accounts presented in the introduction. For instance, the small positive association between rehearsal and the amount of the recall bias would suggest that when communicators rehearse the original information to a greater extent during message production, their subsequent memories are biased to a somewhat greater (not lesser) extent. We note that when we excluded one or more predictors, other than epistemic trust, or included alternative predictors (such as other source attribution scores) in the multiple regressions on recall bias, the meta-analysis led to the same conclusions.

We also conducted a meta-analysis to examine whether the mediation of the communication goal effects on the audience-congruent recall bias by epistemic trust was significant across our

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[9] Participants in the positive-attitude condition produced more accurate reproductions in their message and recall protocols ($M = 5.50$ and $M = 9.34$) than did those in the negative-attitude condition ($M = 3.50$ and $M = 6.76$; $ps < .01$). For positive–negative asymmetries, see Footnote 7. No interaction effects emerged ($Fs < 1$, *ns*).

Table 8

*Associations (From Bivariate and Multiple Regressions) Between Different Predictors and the Main Dependent Variable (Recall Bias): Single-Study and Mean Effect Sizes (r) From Meta-Analyses, Including Type I Error Probabilities (p) and Total Sample Size (N)*

| | Experiment | | | | | | |
|---|---|---|---|---|---|---|---|
| Predictor | 1 | 2a | 2b | 3 | r | p | N |
| Associations with recall bias from bivariate regressions | | | | | | | |
| Epistemic trust (shared reality) | .22 | | .25 | .36 | .28 | <.001 | 233 |
| Rehearsal of original target information | .08 | .07 | −.02 | .24 | .09 | = .07 | 290 |
| Hit rate for original target information (inferred) | .05 | | −.04 | .26 | .08 | = .11 | 233 |
| Recall of content from original target information | .01 | .01 | −.04 | .29 | .07 | = .13 | 290 |
| Source discrimination (AGASI) | .06 | | −.14 | .07 | −.02 | = .38 | 233 |
| Associations with recall bias from multiple regressions | | | | | | | |
| Epistemic trust (shared reality) | .21 | | .25 | .30 | .26 | < .001 | 233 |
| Rehearsal of original target information | .10 | .07 | .002 | .10 | .06 | = .15 | 290 |
| Hit rate for original target information (inferred) | .02 | | .03 | .15 | .07 | = .16 | 233 |
| Recall of content from original target information | −.07 | −.02 | .01 | .15 | .02 | = .34 | 290 |
| Source discrimination (AGASI) | .07 | | −.13 | .03 | −.03 | = .35 | 233 |

*Note.* Each bivariate regression analysis included one of the five predictors of recall bias. Each multiple regression analysis included all five predictors of recall bias. Recall bias denotes the audience-congruent valence bias in recall. Hit Rate for original target information denotes hit rates inferred from the source-discrimination test (see Experiment 1, the *Measures* section, for explanations). Original target information (denotes the original passages describing the target person's behaviors); AGASI = average guessing-adjusted source identification (see Experiment 1, the *Measures* section, for explanations).

studies. The weighted mean effect for mediation, which was calculated on the basis of the *p* values (Rosenthal, 1984) for the indirect effects from the mediation analyses in Experiments 1, 2b, and 3, was highly significant ($Z = 2.76$, $p < .01$) and homogeneous, $\chi^2(2, N = 233) = 0.61$, $p = .74$. We converted the mean mediation effect into the correlation measure, yielding $r = .18$, a medium to small effect (Cohen, 1988). In summary, the meta-analytic findings support the notion that the epistemic trust associated with experienced shared reality, rather than any of the other process variables, mediated the effects of communication goals on the magnitude of the audience-congruent valence bias in memory.

## General Discussion and Conclusions

It has been known for almost three decades that, after tuning their message to suit the audience's attitude, communicators' own memories for the message topic (here, a target person) often reflect the audience-tuned view expressed in their message rather than just the original target information (Higgins, 1992; Higgins & Rholes, 1978). The present studies clearly show that the mere act of tuning the message to the audience is not responsible for this effect. Rather, the effect depends on what communication goal underlies audience tuning. When audience tuning served the creation of a shared reality with the audience (Hardin & Higgins, 1996), the valence of communicators' recall of the target information was biased in the direction of the audience-tuned message. In contrast, the bias was eliminated when the audience tuning was driven by nonshared reality goals, such as being polite toward a stigmatized group audience, obtaining incentives, being entertaining, or complying with a blatant demand.

The present studies further the understanding of the psychological effects of communication. It has been demonstrated that com-

municative biases depend on there being a plausible goal of message production (e.g., Carlsmith et al., 1966; Semin et al., 2003; see also Smith & Semin, 2004). The present research reaches beyond the general distinction between presence versus absence of a communication goal by showing that communication effects on cognition also depend on what type of communication goal is involved. Although researchers have recognized that different communication goals, including shared reality, instrumental, and entertainment goals, exist (Higgins, 1981), little if any research has investigated the consequences of different goals motivating biased message production. One might expect that when different communication goals produce similar audience tuning, the cognitive consequences for the communicators would be similar. However, our studies show that the goal matters: A memory bias was found for the shared-reality-communication goal but not for the nonshared reality goals.

The present studies also extend previous research on audience-tuning effects on memory by examining in more detail potential mechanisms underlying these effects. We assessed the communicators' experience of a shared reality by measuring the extent to which they trusted their audience and audience-tuned message as sources of information about the target person—shared reality as epistemic trust (see Echterhoff, Higgins, & Groll, 2005). We found that participants in the shared reality condition felt that they could trust their audience-tuned message to a greater extent than did participants in the alternative-goal conditions. More important, there was clear evidence that the effect of the communication goals on the magnitude of the audience-congruent memory bias was mediated by the communicators' epistemic trust. Thus, epistemic trust appears to be a central mechanism underlying the observed audience-tuning effects on memory. In a broader context, this finding makes a contribution to the growing body of research

emphasizing the role of the social context in many domains of cognition (e.g., Smith & Semin, 2004).

In contrast, alternative measures, such as rehearsal or accurate retrieval of the original input information during message production or the ability to discriminate between the original information and the message information, did not mediate the observed effects on memory. Differences in the memory bias could also not be explained by differences in communicators' mood or by a contrast away from extreme message valence in the nonshared reality-goal conditions. Finally, the memory bias could not be explained in terms of communicators' feeling that their message was motivated by external demands—a "perception of bias" account (e.g., Todorov, 2002)—for the following reasons: (a) any differences in "bias perception" did not lead to differences in the discrimination between original versus message information; (b) correlations between all of our different bias perception-related manipulation checks and the size of the recall bias were small ($-.11$–$.06$) and nonsignificant; (c) as indicated, we did not find any evidence for a correction away from extremely tuned messages, which one would expect to find if bias perception was the underlying mechanism.

The data from the source discrimination tests provided no evidence that communicators who exhibited a lower audience-congruent memory bias were better able to discriminate between the original input information and the communicated message information about the target person. Thus, any processing differences that may lead communicators to keep track of what they communicated (vs. what they originally experienced) are unlikely to be responsible for the differences in the memory bias. Even if some features associated with ("tagged" to) the message information differed across our communication-goal conditions, these tagged features apparently did not produce differences in the memory bias.[10]

We recognize that finding no differences in our source discrimination tests across the communication-goal conditions does not rule out possible differences in spontaneous source discrimination (e.g., Jacoby, Kelley, Brown, & Jasechko, 1989; Lindsay & Johnson, 1989). Although communicators in our shared reality conditions did not perform worse in identifying the sources of information than communicators in our nonshared reality conditions, the former may be less likely to distinguish spontaneously between the original information and their own message. If there were differences in spontaneous source discrimination, our evidence suggests that these may occur as a function of communicators' epistemic trust in their audience-congruent message. That is, when communicators experience epistemic trust, as in our shared reality conditions, they may treat their message as an accurate depiction of the original input and have little reason to make a distinction between the two sources, whereas when epistemic trust is insufficient, as in our nonshared reality conditions, they may have a reason to make a source discrimination. Thus, it is plausible that epistemic trust—our main mediator—could drive any differences in spontaneous source identification that may have occurred.

Dual-representation accounts suggest that during verbal communication, people construct a new, distinct representation of experiences that later has a retrieval advantage over the representation formed during the original experience (e.g., Higgins & Rholes, 1978; Schooler & Engstler-Schooler, 1990; Wyer, 2004). Accordingly, the verbal production of a biased message should be responsible for the audience-congruent memory bias, be it through

rehearsal (Pasupathi et al., 1998), self-generation (Slamecka & Graf, 1978), recoding interference (Schooler & Engstler-Schooler, 1990), or the construction of an audience-congruent schema (Tversky & Marsh, 2000). Such accounts may predict a greater audience-tuning effect on memory in our nonshared reality-goal conditions (e.g., incentive goal) than in the shared-reality-goal conditions because audience tuning was, if anything, even stronger in these conditions. However, we found that the effect was greatly reduced when audience tuning was motivated by such nonshared reality goals.

It is helpful to distinguish between the information available at recall and the use of that information. Although in our studies the information that was available at the time of recall (here, the original information, the message information, and related source information) did not differ across the communication-goal conditions, what differed was the extent to which communicators used that information to reconstruct the original description. This view is consistent with research suggesting that whether perceivers include available information in their responses depends on whether they judge it as relevant or appropriate to the present task (e.g., Adaval & Wyer, 2004; Higgins, 1996; Martin, Strack, & Stapel, 2001). When communicators experience their audience-tuned message as creating a shared reality with their audience, when they have sufficient epistemic trust, then the message would be judged as relevant and appropriate to use in the reconstructive memory process. Then, communicators experience the information as being about the message topic (i.e., the target person) (Higgins, 1998) and feel they share this sense with their audience. This would not be the case, however, when audience tuning is motivated by goals that do not establish the epistemic trust associated with creating a shared reality.

On a more general note, our findings also have implications for the effect of interpersonal communication on culturally shared knowledge. As noted by Weber (1967), *social* action is action that takes other people into account. Given that every communication-goal condition in our studies involved social action in this sense, our results show that not all social actions have the same effect on communicators. A shared-reality-communication goal creates a later memory of the message topic that matches the audience's viewpoint in a way that the other communication goals do not. This has important implications for how cultural norms and consensus are created. It suggests that communication with a shared reality goal may be more important for cultural norms and consensus than other communication goals, at least more than the nonshared reality goals that we examined. Future research could investigate more fully the role of different types of communication goals in the construction of cultural knowledge.

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## References

Adaval, R., & Wyer, R. S., Jr. (2004). Communicating about a social interaction: Effects on memory for protagonists' statements and nonverbal behaviors. *Journal of Experimental Social Psychology, 40,* 450–465.

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and

statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173–1182.

Bayen, U. J., Murnane, K., & Erdfelder, E. (1996). Source discrimination, item detection, and multinomial models of source monitoring. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 22,* 197–215.

Brown, P., & Levinson, S. (1978). Universals in language use: Politeness phenomena. In E. Goody (Ed.), *Questions and politeness: Strategies in social interaction* (pp. 56–289). New York: Cambridge University Press.

Byrne, D., & Clore, G. L. (1967). Effectance arousal and attraction. *Journal of Personality and Social Psychology, 6,* 1–18.

Carlsmith, J. M., Collins, B. E., & Helmreich, R. F. (1966). Studies in forced compliance. I: The effect of pressure for compliance on attitude change produced by face-to-face role playing and anonymous essay writing. *Journal of Personality and Social Psychology, 4,* 1–13.

Clark, R. A., & Delia, J. C. (1979). Topoi and rhetorical competence. *Quarterly Journal of Speech, 65,* 187–206.

Clark, H. H., & Marshall, C. E. (1981). Definite reference and mutual knowledge. In A. K. Joshi, B. Webber, & I. Sag (Eds.), *Elements of discourse understanding* (pp. 10–63). Cambridge, MA: Cambridge University Press.

Clark, H. H., & Murphy, G. L. (1982). Audience design in meaning and reference. In J. F. Le Ny & W. Kintsch (Eds.), *Language and comprehension* (pp. 287–296). New York: Elsevier.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences.* Hillsdale, NJ: Erlbaum.

Devine, P. G., & Ostrom, T. M. (1985). Cognitive mediation of inconsistency discounting. *Journal of Personality and Social Psychology, 49,* 5–21.

Dovidio, J. F., & Gaertner, S. L. (1998). On the nature of contemporary prejudice: The causes, consequences, and challenges of aversive racism. In J. L. Eberhardt & S. T. Fiske (Eds.), *Confronting racism: The problem and the response* (pp. 3–32). Thousand Oaks, CA: Sage.

Dovidio, J. F., Gaertner, S. L., Kawakami, K., & Hodson, G. (2002). Why can't we just get along? Interpersonal biases and interracial distrust. *Cultural Diversity and Ethnic Minority Psychology, 8,* 88–102.

Dudukovic, N. M., Marsh, E. J., & Tversky, B. (2004). Telling a story or telling it straight: The effects of entertaining versus accurate retellings on memory. *Applied Cognitive Psychology, 18,* 125–143.

Echterhoff, G., Higgins, E. T., & Groll, S. (2005). Audience-tuning effects on memory: The role of shared reality. *Journal of Personality and Social Psychology, 89,* 257–276.

Echterhoff, G., Hirst, W., & Hussy, W. (2005). How eyewitnesses resist misinformation: Social postwarnings and the monitoring of memory characteristics. *Memory & Cognition, 33,* 770–782.

Festinger, L. (1950). Informal social communication. *Psychological Review, 57,* 271–282.

Hardin, C. D., & Higgins, E. T. (1996). Shared reality: How social verification makes the subjective objective. In R. M. Sorrentino & E. T Higgins (Eds.), *Handbook of motivation and cognition: The interpersonal context* (Vol. 3, pp. 28–84). New York: Guilford Press.

Hedges, L. V., & Olkin, I. (1985). *Statistical methods for meta-analysis.* New York: Academic Press.

Heider, F. (1958). *The psychology of interpersonal relations.* New York: Wiley.

Herr, P. M., Sherman, S. J., & Fazio, R. H. (1983). On the consequences of priming: Assimilation and contrast effects. *Journal of Experimental Social Psychology, 19,* 323–340.

Higgins, E. T. (1981). The "communication game": Implications for social cognition and persuasion. In E. T. Higgins, C. P. Herman, & M. P. Zanna (Eds.), *Social cognition: The Ontario symposium* (Vol. 1, pp. 343–392). Hillsdale, NJ: Erlbaum.

Higgins, E. T. (1992). Achieving "shared reality" in the communication

game: A social action that creates meaning. *Journal of Language and Social Psychology, 11,* 107–131.

Higgins, E. T. (1996). Knowledge activation: Accessibility, applicability, and salience. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: Handbook of basic principles* (pp. 133–168). New York: Guilford Press.

Higgins, E. T. (1998). The aboutness principle: A pervasive influence on human inference. *Social Cognition, 16,* 173–198.

Higgins, E. T. (1999). "Saying is believing" effects: When sharing reality about something biases knowledge and evaluations. In L. L. Thompson, J. M. Levine, & D. M. Messick (Eds.), *Shared cognition in organizations: The management of knowledge* (pp. 33–49). Mahwah, NJ: Erlbaum.

Higgins, E. T., Echterhoff, G., Crespillo, R., & Kopietz, R. (in press). Communication effects on social knowledge: Sharing reality with individual versus group audiences. *Japanese Psychological Research.*

Higgins, E. T., & Rholes, W. S. (1978). "Saying is believing": Effects of message modification on memory and liking for the person described. *Journal of Experimental Social Psychology, 14,* 363–378.

Jacoby, L. L., Kelley, C., Brown, J., & Jasechko, J. (1989). Becoming famous overnight: Limits on the ability to avoid unconscious influences of the past. *Journal of Personality and Social Psychology, 56,* 326–338.

Jarvis, B. G. (2005). Medialab (Version 2006) [Computer software]. New York: Empirisoft.

Johnson, M. K., Hashtroudi, S., & Lindsay, D. S. (1993). Source monitoring. *Psychological Bulletin, 114,* 3–28.

Jones, E. E. (1964). *Ingratiation: A social psychological analysis.* New York: Appleton-Century-Crofts.

Jones, E. E., & Thibaut, J. W. (1958). Interaction goals as bases of inference in interpersonal perception. In R. Tagiuri & L. Petrullo (Eds.), *Person perception and interpersonal behavior* (pp. 151–178). Stanford, CA: Stanford University Press.

Krauss, R. M., & Fussell, S. R. (1991). Perspective-taking in communication: Representations of others' knowledge in reference. *Social Cognition, 9,* 2–24.

Kruglanski, A. W. (1996). Motivated social cognition: Principles of the interface. In E. T. Higgins & A. W. Kruglanski (Eds.), *Social psychology: A handbook of basic principles* (pp. 493–520). New York: Guilford Press.

Lindsay, D. S., & Johnson, M. K. (1989). The eyewitness suggestibility effect and memory for source. *Memory & Cognition, 17,* 349–358.

Lockhart, R. S. (2000). Methods of memory research. In E. Tulving & F. I. M. Craik (Eds.), *The Oxford handbook of memory* (pp. 45–57). Oxford, England: Oxford University Press.

Martin, L. L., & Clore, G. L. (Eds.). (2001). *Theories of mood and cognition: A user's guidebook.* Mahwah, NJ: Erlbaum.

Martin, L. L., Strack, F., & Stapel, D. A. (2001). How the mind moves: Knowledge accessibility and the fine-tuning of the cognitive system. In A. Tesser & N. Schwarz (Eds.), *Blackwell handbook of social psychology: Intraindividual processes* (pp. 236–256). Malden, MA: Blackwell Publishers.

McCann, C. D., & Higgins, E. T. (1988). Motivation and affect in interpersonal relations: The role of personal orientations and discrepancies. In L. Donohew, H. E. Sypher, & E. T. Higgins (Eds.), *Communication, social cognition, and affect* (pp. 53–79). Hillsdale, NJ: Erlbaum.

Murnane, K., & Bayen, U. J. (1996). An evaluation of empirical measures of source monitoring. *Memory & Cognition, 24,* 417–428.

Newcomb, T. M. (1959). Individual systems of orientation. In S. Koch (Ed.), *Psychology: A study of a science: Formulations of the person and the social context* (Vol. 3, pp. 384–422). New York: McGraw-Hill.

Pasupathi, M., Stallworth, L. M., & Murdoch, K. (1998). How what we tell becomes what we know: Listener effects on speaker's long-term memory for events. *Discourse Processes, 26,* 1–25.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for

estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers, 36,* 717–731.

Richeson, J. A., & Trawalter, S. (2005). Why do interracial interactions impair executive function? A resource depletion account. *Journal of Personality and Social Psychology, 88,* 934–947.

Rosenthal, R. (1984). *Meta-analytic procedures for social research.* Beverly Hills, CA: Sage.

Rozin, P., & Royzman, E. D. (2001). Negativity bias, negativity dominance, and contagion. *Personality and Social Psychology Review, 5,* 296–320.

Schooler, J. W., & Engstler-Schooler, T. Y. (1990). Verbal overshadowing of visual memories: Some things are better left unsaid. *Cognitive Psychology, 17,* 36–71.

Schramm, W., & Danielson, W. (1958). Anticipated audiences as determinants of recall. *Journal of Abnormal and Social Psychology, 56,* 282–283.

Schwarzer, R. (1989). *Meta-analysis programs.* Berlin, Germany: Free University.

Sedikides, C. (1990). Efforts of fortuitously activated constructs versus activated communication goals on person impressions. *Journal of Personality and Social Psychology, 58,* 397–408.

Semin, G. R., de Montes, G. L., & Valencia, J. F. (2003). Communication constraints on the linguistic intergroup bias. *Journal of Experimental Social Psychology, 39,* 142–148.

Sherif, M. (1936). *The psychology of social norms.* New York: Harper & Brothers.

Slamecka, N. J., & Graf, P. (1978). The generation effect: Delineation of a phenomenon. *Journal of Experimental Psychology: Human Learning and Memory, 4,* 592–604.

Smith, E. R., & Semin, G. R. (2004). Socially situated cognition: Cognition in its social context. *Advances in Experimental Social Psychology, 36,* 53–115.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural models. In S. Leinhardt (Ed.), *Sociological methodology* (pp. 290–312). San Francisco: Jossey-Bass.

Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology, 89,* 845–851.

Todorov, A. (2002). Communication effects on memory and judgment. *European Journal of Social Psychology, 32,* 531–546.

Tversky, B., & Marsh, E. J. (2000). Biased retellings of events yield biased memories. *Cognitive Psychology, 40,* 1–38.

Van Dijk, T. A., & Kintsch, W. (1983). *Strategies of discourse comprehension.* New York: Academic Press.

Vrij, A., Edward, K., & Bull, R. (2001). Stereotypical verbal and nonverbal responses while deceiving others. *Personality and Social Psychology Bulletin, 27,* 899–909.

Weber, M. (1967). Subjective meaning in the social situation. In G. B. Levitas (Ed.), *Culture and consciousness: Perspectives in the social sciences* (pp. 156–169). New York: Braziller.

Wyer, R. S., Jr. (2004). *Social comprehension and judgment: The role of situation models, narratives, and implicit theories.* Mahwah, NJ: Erlbaum.

Zick, A. (1997). *Vorurteile und Rassismus. Eine sozialpsychologische Analyse* [Prejudice and racism: A social psychological analysis]. Münster, Germany: Waxmann.

## Appendix A

## Target Essay Used in Experiments 1 and 2a (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]

In order 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]

*Note.* The word pairs in parentheses 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 (see Experiment 1, the *Materials* section, for further explanations).

Appendix B

Example Passages From Message and Recall Protocols in Experiment 1 as a Function of Experimental Conditions

| | Protocol | |
| --- | --- | --- |
| Group | Message | Recall |
| Shared reality goal | | |
| Positive | This person is persistent and is not easily influenced by people around him. | Michael is persistent. He's not easily influenced by others and enjoys doing things his own way. |
| Negative | He doesn't like having people give him advice against doing things, even when their advice is wise and he should take it. | Even when Michael's friends tell him not to do something, he won't listen to them, even though he ought to. He's really stubborn. |
| Politeness goal | | |
| Positive | He is very persistent. He knows what he wants and he's not easily swayed by others while pursuing a goal. | Michael rarely changes his mind once he's got a goal. Once he's got a plan, it's as good as done. |
| Negative | He is really stubborn. He won't even listen to good advice from his friends | Once Michael decides something, he goes all the way. He seldom changes his mind. |

*Note.* These examples refer to the persistent/stubborn passage from the original target essay (see Appendix A).