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Shared Reality: From Sharing-Is-Believing to Merging Minds

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Abstract

Humans are fundamentally motivated to create a sense of *shared reality*—the perceived commonality of inner states (feeling, beliefs, concerns) with other people about something. This shared reality establishes a sense of both social connection and understanding the world.

Research on shared reality has burgeoned in recent decades. We first review evidence for a basic building block of shared reality creation: *sharing-is-believing*, whereby communicators tune their descriptions to align with their communication partner's attitude about something, which in turn shapes their recall. Next, we describe recent developments moving beyond this basic building block to explore *generalized* shared reality about the world at large, which promotes interpersonal closeness and epistemic certainty. Together, this body of work exemplifies the synergy between relational and epistemic motives. Finally, we discuss the potential for another form of shared reality, i.e., shared relevance, to bridge disparate realities.

Keywords: Shared reality, communication, epistemic motivation, interpersonal relationships

Humans are fundamentally motivated to share with others their feelings, beliefs, and concerns about the world (Echterhoff, Higgins, & Levine, 2009; Higgins, 2019; Higgins & Pittman, 2008). In their interactions, they seek to create a *shared reality*: a perceived commonality with another person of feelings or beliefs about a target referent (e.g., an object, event, other person). As a fundamental factor underlying cooperation and coordination in social interaction, shared reality plays a critical role in human evolution (Higgins, 2019) and childhood development (Higgins, 2016). To deal with the world effectively, humans need to feel that their interaction partners share what matters to them—how they think about and respond to the world.

Shared reality lies at the intersection of two motives: the need to connect with others, such as friends, partners, or fellow community members (*relational* motives), and the need to understand things, like events, objects, or persons (*epistemic* motives). Thus, shared reality involves motivated connection (the "shared" in "shared reality") and motivated cognition or understanding (the "reality" in "shared reality"). These two motivational components of shared reality are synergistic (Echterhoff & Higgins, in press). First, sharing feelings and beliefs *with others* transforms these inner states from feeling subjective to feeling objective—they begin to feel like the *truth* about the world (Hardin & Higgins, 1996). Second, sharing inner states *about the world* develops and strengthens social connection to others (Rossignac-Milon & Higgins, 2018). For example, if two people share the same interpretation of an event, they will feel that they understand what really happened during that event and also feel more connected to each other.

Historically, psychologists, sociologists, and, especially, social psychologists, have appreciated the importance of the motivation to share others' inner states about the world (Asch, 1956; Festinger, 1950; Mead, 1934; Sherif, 1936; Weber, 1971). Yet, the empirical study of

shared reality has accelerated in recent decades (see Special Issue on Shared Reality in *Current Opinion on Psychology*, 2018). In this paper, we first review research on a basic building block of shared reality creation, whereby people tune not only what they *say* to fit with their communication partner's attitudes, but also what they subsequently *remember*—sharing-isbelieving. Next, we review recent research moving beyond this building block to examine shared reality in conversation contexts and interpersonal relationships, in which people create a generalized sense of shared reality about the world at large.

Sharing-Is-Believing

The motivation to share reality is so pervasive that it occurs during one of the most basic instances of communication: when one person describes something to another person. Research has shown that even during this minimal communication unit, people tune what they say to fit with their communication partner's attitude. For example, people will describe a new colleague more positively (or negatively) if they know their communication partner liked (or disliked) that colleague. But more importantly, this process will subsequently bias their *memory* of the colleague's behavior accordingly—for example, the communicator will later recall the new colleague's behaviors more positively (or negatively). This phenomenon was originally explained through a cognitive lens and called the "saying-is-believing" effect (Higgins & Rholes, 1978), but later, Higgins (1992) proposed shared reality as the underlying mechanism. Since, evidence has mounted that this phenomenon is, indeed, "sharing-is-believing."

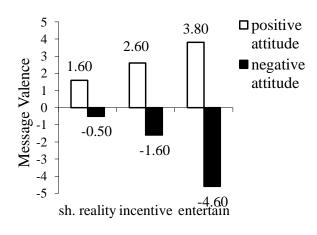
In the standard saying-is-believing paradigm, participants read a description of a *target person's* behaviors, for example: "Once Michael makes up his mind to do something it is as good as done, no matter how long it might take or how difficult the going might be. Only rarely does he change his mind even when it might well be better if he did." This description is

evaluatively ambiguous because Michael can be perceived as either "persistent" or "stubborn." Participants are told that they will communicate with another person (their audience) who knows Michael and somewhat likes (or somewhat dislikes) him. They are instructed to describe Michael to their audience, without mentioning Michael's name, so that their audience can identify Michael from a group to which both the audience and Michael belong. Participants who are told that their audience likes (or dislikes) Michael tend to describe him as "persistent" (or "stubborn")—a message tailoring called audience-tuning. Importantly, when participants are subsequently asked to recall the original information they read about Michael, their memory matches their biased message: they exhibit recall bias.

This phenomenon was initially explained through a cognitive lens (Higgins & Rholes, 1978): labeling the behaviors as "persistent" or "stubborn" biased reconstructive memory. From this purely cognitive standpoint, recall bias should occur regardless of the motivation behind audience-tuning. But from a shared reality perspective, the goal matters. Communicators should only incorporate their audience's attitude into their memory of the target if they are relationally motivated to connect with their audience *and* epistemically motivated to understand what the target is really like. They need to be motivated to *share with their audience their inner states about the target*. When this occurs, communicators experience their message about the target as being the *truth* about the target, which is why their message shapes their recall of the target's behaviors.

From this perspective, if communicators audience-tune for goals other than shared reality, recall bias should be reduced, or even eliminated—even given the same degree of audience-tuning. A study by Echterhoff, Higgins, Kopietz, and Groll (2008) tested the effects of two non-shared reality goals. Participants in an incentive condition were offered financial

compensation for audience-tuning. Participants in an entertainment condition were told to entertain themselves by exaggerating their audience-tuning. Participants in both of these conditions exhibited even greater audience-tuning than participants in the standard shared reality condition. However, only participants in the shared reality condition exhibited recall bias. The "saying-is-believing" effect was eliminated in the other goal conditions because the message was no longer experienced as the truth about the target. (See *Figure 1*)



Communication goal

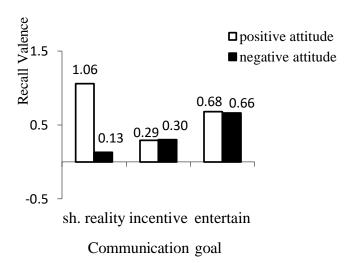


Figure 1. Message valence (top panel) and recall valence (bottom panel) as a function of audience attitude (positive vs. negative) and communication goal (shared reality, incentive, or entertainment goals). Though participants exhibited audience-tuning in all three conditions (top panel), only participants in the shared reality goal condition exhibited recall bias (bottom panel) (Echterhoff et al., 2008).

The classic ingroup-outgroup distinction relates to both relational and epistemic motives: people are less likely to desire connection with outgroup members or to trust them to understand the truth. Several studies have found that when communicating to an outgroup audience (e.g., at a German institution, a German student communicating to a Turkish student), participants exhibit audience tuning, but not recall bias (e.g., Echterhoff, Higgins, & Groll, 2005; Echterhoff, et al., 2008; Echterhoff, Kopietz, & Higgins, 2017; see also Skorinko & Sinclair, 2018). These results are inconsistent with a cognitive dissonance explanation, which would predict *greater* dissonance (and greater attitude change) in the outgroup condition (See Echterhoff et al., 2009 for an in-depth explanation). Once again, the "saying-is-believing" effect depends on the motivation to create shared reality—it is *sharing-is-believing*.

More recent research has shown that it is possible to build up sharing-is-believing with an outgroup audience (Echterhoff et al., 2017). Three factors were manipulated. One factor was whether or not the communicator actually produced a message for their audience (message production) or could not because the recording device was unavailable (no message production). Message production, by facilitating social verification and connection with the audience (see Echterhoff, Kopietz, & Higgins, 2013), enhanced sharing-is-believing. Sharing-is-believing was

also enhanced by increasing the audience's epistemic expertise; for example, when the target person was a member of *the audience's* ingroup (instead of the communicator's ingroup). For example, sharing-is-believing was enhanced when German students communicated to a Turkish audience about a *Turkish* target person. Finally, sharing-is-believing was enhanced by increasing the epistemic authority of the audience via consensus (e.g., an outgroup audience of *three* people with the same attitude *vs.* a single person). With all three factors, recall bias was equally great for ingroup and outgroup audiences (see *Figure 2* and Echterhoff & Higgins, 2017 for a model). Together, this research demonstrates the importance of motivated cognition and motivated connection for sharing-is-believing.

Given the power of these ingroup/outgroup effects, one might wonder why in the original "saying-is-believing" studies, the communicators exhibited sharing-is-believing effects when communicating with a *stranger*. However, in these studies, the communicator and audience belonged to the same community (e.g., a university) and were assigned as partners on a common task. In human evolution, especially as communities became larger, it was critical that humans cooperate on tasks with community members they may not have met before (Higgins, 2019). Thus, exhibiting sharing-is-believing in communication with strangers is consistent with an evolutionary perspective on cooperation.

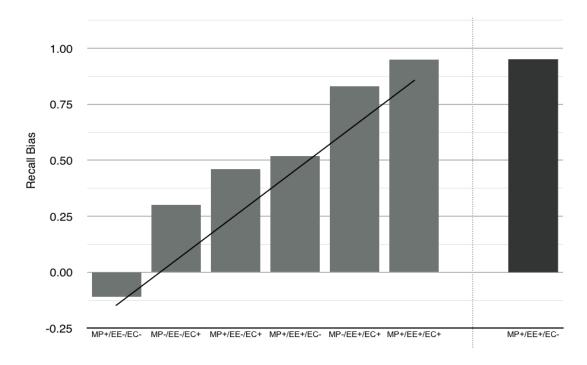


Figure 2. The audience-tuning recall bias as a function of three shared reality factors (message production, epistemic expertise, epistemic consensus) across the experiments by Echterhoff et al. (2017). The line represents the estimated linear trend, based on ordinary least squares approximation. The figure distinguishes different combinations of epistemic shared reality factors for the out-group audience conditions (left panel, gray bars) and the in-group conditions (right panel, black bar) in four experiments. The presence or absence of the epistemic shared reality inputs, message production (MP), epistemic expertise (EE), and epistemic consensus (EC), is indicated by plus and minus symbols, respectively. Greater scores for recall bias denote a greater audience-tuning effect on memory, reflecting shared reality with the audience.

Generalized Shared Reality in Dyadic Relationships

In the sharing-is-believing paradigm, shared reality is about *one* target in particular (e.g., a third person). Recent research has examined how, in real-world conversations and relationships, people often experience shared reality with another person as being about more than a single target in particular (e.g., the Beatles' *White Album*). Instead, people often

experience shared reality with a conversation partner about various topics (e.g., art, food, current events)—about *reality at large* (Rossignac-Milon & Higgins, 2018). Rossignac-Milon, Bolger, Zee, Boothby, and Higgins (2020) introduce the construct of *generalized shared reality* (SR-G): the subjective experience of sharing a set of inner states in common with an interaction partner about the world in general. SR-G is *topic-general* (about multiple topics and domains) and *dyadic* (shared with a *particular* interaction partner *vs.* with a general group of people). For example, close partners with a high sense of SR-G may feel that they frequently think of things at the exact same time and often develop a joint perspective. This research suggests that people are motivated not only to uphold SR-G in their ongoing close relationships but also to create SR-G in their interactions with new people.

In one study, pairs of newly-acquainted participants discussed several ambiguous images in a real-time, online conversation. As in the sharing-is-believing paradigm, they belonged to the same general community (Mechanical Turk) and worked on a common task (figuring out what was going on in the images). Participants who experienced a greater sense of SR-G with their conversation partner (e.g., "During our discussion, we shared the same thoughts and feelings about things," "... we thought of things at the exact same time") felt closer to their partner, established greater rapport, felt like they "clicked," and wanted to converse again. These participants also perceived that they made sense of the images with their partner, trusted their partner more as a source of truth about the images, and ultimately felt more certain of what was really going on in the images. Importantly, SR-G continued to predict these outcomes when controlling for perceived similarity and perceived partner responsiveness. This result suggests that SR-G contributes to relational and epistemic outcomes over and above the effects of inferring similarity to one's partner or feeling listened to and valued by one's partner. SR-G also

predicted these outcomes over and above target-specific shared reality, suggesting that SR-G did not affect closeness or certainty simply because participants felt they agreed about the particular images in the study. These findings support the idea that generalized shared reality contributes to both social connection and epistemic certainty.

This study also examined the dyadic behavioral signatures giving rise to the experience of SR-G. Dyads who displayed interaction behaviors such as saying the same things at the same time, vocalizing agreement or thought similarity (e.g. "I was thinking the same thing!"), and finishing each other's ideas (e.g. seemingly sharing a stream of consciousness), reported a greater sense of SR-G. Critically, these behaviors predicted relational and epistemic outcomes (such as closeness and certainty) to the extent that participants subjectively experienced them as SR-G. In addition to elucidating the behavioral antecedents of SR-G, these results suggest that shared reality, albeit a subjective experience, can be grounded in observable interaction behaviors (See *Figure 3*).

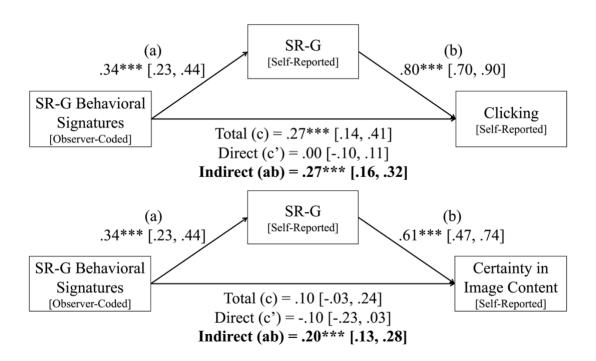


Figure 3. Self-reported Generalized Shared Reality (SR-G) between newly acquainted dyads conversing online mediated the relationship between SR-G behavioral signatures, such as saying things at the same time, vocalizing thought similarity, and finishing each other's ideas (coded by observers) and (1) self-reported 'clicking' with one's interaction partner (upper panel) and (2) self-reported certainty about what was really going on in the images (lower panel) (Rossignac-Milon et al., 2020). (*indicates p < .05; **indicates p < .01; ***indicates p < .001).

Beyond identifying SR-G as a key predictor of *initial* human connection, this research also examined the motivation to uphold an existing sense of SR-G with a *close* partner (with whom participants often report the experience of having "merged minds"). One study examined how romantic dyads responded to feedback threatening their sense of SR-G. After answering several baseline relationship measures, including SR-G (e.g., "We typically share the same thoughts and feelings about things"), romantic couples independently and silently rated visual, tactile, and gustatory stimuli. They were informed that a (fictitious) software program would compute the extent to which they overlapped in their direct experience of the sensory world. Couples were randomly assigned to receive feedback that, compared to the average couple, they had low (vs. high) overlap in the way they experience the sensory world.

Couples responded differently to this feedback depending on their baseline level of SR-G. Couples higher in baseline SR-G, in response to the low (vs. high) overlap feedback, engaged in greater motivated behaviors to reaffirm their sense of SR-G when subsequently given the chance to discuss various images: they exhibited more SR-G behavioral signatures, established greater latent shared meaning linguistically, and made more dyad-specific references (e.g., inside jokes and shared memories). They also created greater shared reality when jointly selecting an

image to take home together. In contrast, this difference in conditions was not found among dyads lower on SR-G (as revealed in a significant interaction). Importantly, baseline SR-G was the only relationship construct to predict these reaffirmation behaviors in response to this threat. These findings suggest that SR-G matters enough to close partners that they are motivated to reaffirm it together in the face of threat (See *Figure 4*).

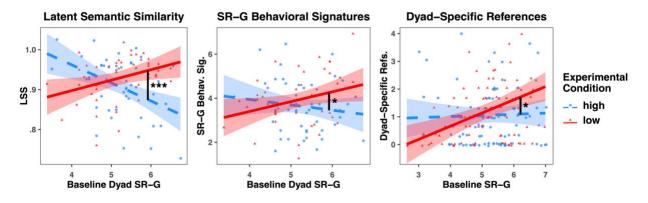


Figure 4. Baseline Generalized Shared Reality (SR-G) significantly interacted with experimental condition to predict shared reality reaffirmation behaviors during a subsequent conversation. Specifically, among dyads higher in baseline SR-G, those who received false feedback that they had low (vs. high) overlap in the way they experience the sensory world displayed greater efforts to reaffirm their SR-G in a subsequent conversation: they created greater shared meaning linguistically (i.e., exhibited greater latent semantic similarity, a computational indicator of semantic overlap between the text spoken by each partner; Babcock, Ta & Ickes, 2014), exhibited more behavioral signatures of SR-G, and made more references exclusive to their relationship (Rossignac-Milon et al., 2020). Asterisks indicate the significance of the difference between experimental conditions at 1SD above the mean on baseline SR-G (*indicates p < .05; **indicates p < .01; ***indicates p < .001).

This research contributes to the body of work highlighting the epistemic function of relationships. For example, related work has shown that activating a shared meaning-system with a significant other, even via transference, can influence the anticipated meaningfulness of an interaction with a new person who minimally resembles this significant other (Andersen & Przybylinski, 2018). Close relationships can function as a haven of coherence: people increase their commitment to their partner when their general sense of coherence is threatened in order to restore their sense of meaning (Murray, Lamarche, & Seery, 2018). Together, these lines of work exemplify the synergy between motivated connection and cognition: people frequently turn to their *closest* others in order to make sense of reality, and in turn, this joint sense-making further enhances their connection to each other.

The importance of shared reality is also demonstrated by the harmful effects of an absence of shared reality. For instance, keeping secrets—obstructing shared-reality creation—decreases well-being by thwarting relational and epistemic needs (Liu & Slepian, 2018). Even subtle disruptions of conversation flow can diminish shared reality and heighten the experience of interpersonal rejection (Koudenburg, 2018). Furthermore, when close relationships dissolve, individuals lose an epistemic companion with whom they make sense of the world (Rossignac-Milon & Higgins, 2018).

Future research could further examine how the sense of SR-G and shared meaning-systems emerge in conversation. When do conversation partners begin to feel that they share reality about the world "in general"? Beyond particular conversation behaviors (e.g., finishing each other's ideas) giving rise to the sense of SR-G (Rossignac-Milon et al., 2020), could SR-G also stem from creating shared reality about multiple targets? If so, how many different targets, and *which* targets, would suffice to provoke the sense of SR-G? Might some people extrapolate a

sense of SR-G from sharing feelings about a single target particularly central to their world-view (e.g., a political figure)? The readiness to extrapolate a sense of SR-G could be an individual difference: perhaps some are quick to generalize based on minimal cues, whereas others need more evidence. Future research could also examine whether SR-G is experienced as a coherent worldview or perhaps as the expectation of experiencing new targets in the same way.

Concluding Comment

The field of shared reality has made significant progress in understanding how humans share inner states as a way to connect with each other and make sense of the world. These advancements shed new light on current issues. For instance, exaggerated perceptions of consensus generated by filter bubbles and echo chambers may inflate the experience of shared reality on social media, especially given the intensifying effects of collective attention (Shteynberg, Hirsh, Bentley, & Garthoff, 2020) and transmission through social networks (Kashima, Bratanova, & Peters, 2018). By shaping attitudes and ideological beliefs (see Jost, van der Linden, Panagopoulos, & Hardin, 2018; Stern & Ondish, 2018), shared reality can perpetuate insular views and exacerbate ideological divisions. But there is a different kind of shared reality that could be beneficial in this context: shared perceptions of what is worthy of attention. Wanting to establish *shared relevance* is so central to human motivation that even infants seek to establish it with their caregivers by pointing out objects deserving of co-attention (Higgins, 2016). In many respects, culture and socialization involve learning what the community treats as important—what matters in the world. As a first step to bridge ideological divides, perhaps we can highlight our shared relevance about which issues matter and are worth discussing (Higgins, 2019). By providing an initial sense of shared reality, shared relevance could serve as a building block upon which to construct shared feelings or beliefs. Perhaps experiencing such shared

relevance could foster a sense of unity with humanity, beyond our siloed realities. In such ways, future research could leverage shared reality theory to examine new ways in which humans can connect with each other, and how, together, people can establish new ways of seeing the world.

Notes

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Recommended Readings

- 1. Echterhoff, G., Higgins, E. T., & Levine, J. M. (2009). Shared reality: Experiencing commonality with others' inner states about the world. *Perspectives On Psychological Science*, *4*, 496-521.
 - A presentation of the psychological features of shared reality, a discussion of the evidence that supports the importance of each feature, and a review of other psychological concepts that are similar to but distinct from shared reality.
- 2. Higgins, E. T. (2019). *Shared reality: What makes us strong and tears us apart.* New York: Oxford University Press.
 - A broad and comprehensive review of the conceptual and empirical literature on shared reality, with discussions of how shared reality plays out in human communication, human development and evolution, feelings, beliefs and goal pursuits, and interpersonal and intergroup relations.
- 3. Rossignac-Milon, M., Bolger, N., Zee, K. S., Boothby, E. J., & Higgins, E. T. (in press).

 Merged Minds: Generalized Shared Reality in Dyadic Relationships. *Journal of Personality and Social Psychology*.

A novel perspective on shared reality in interpersonal interactions and relationships. This work examined the effects of generalized shared reality on social connection and epistemic certainty between newly acquainted dyads conversing online, as well as the motivation to uphold generalized shared reality with a close partner in the face of threat to that shared reality.

Figure 1. Message valence (top panel) and recall valence (bottom panel) as a function of audience attitude (positive vs. negative) and communication goal (shared reality, incentive, or entertainment goals). Though participants exhibited audience-tuning in all three conditions (top panel), only participants in the shared reality goal condition exhibited recall bias (bottom panel) (Echterhoff et al., 2008).

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