Merged Minds: Generalized Shared Reality in Interpersonal Relationships

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ABSTRACT

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This paper introduces the construct of *generalized shared reality*—the experience of sharing inner states (e.g., feelings, beliefs, or concerns) in common with a partner about the world in general. Across eleven studies using varied methodologies (intensive longitudinal, experimental, and dyadic interactions) and varied measurements (self-report, linguistic markers, and behavioral coding), we identified the occurrence of generalized shared reality both between close and newly-acquainted partners. Further, we examined the relational outcomes, epistemic outcomes, and behavioral antecedents of generalized shared reality. In Studies 1a and 1b, generalized shared reality predicted self-other overlap between close partners in daily life. In Studies 2a-2d, this effect persisted when accounting for conceptually-related close relationship constructs. In Studies 3a and 3b, linguistic analyses revealed that experimentally threatening generalized shared reality with a romantic partner decreased self-other overlap and increased efforts to restore one's sense of certainty. Next, in Studies 4a and 4b, experimentally manipulating shared reality between strangers using an established paradigm increased closeness, anticipated rapport, the desire to work together again, and epistemic trust. Finally, in Study 5, generalized shared reality between stranger dyads chatting online predicted key relational outcomes, such as closeness and 'clicking,' and key epistemic outcomes, such as joint sense-making and certainty, over and above other constructs. Further, generalized shared reality mediated the relationship between observable shared reality behaviors and these outcomes. These results suggest that generalized shared reality plays an important role in shaping both interpersonal relationships and perceptions of reality.

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Dedication

To all of those with whom I share reality

Introduction

"Looking back, our way of living seems a miracle, one that could only be achieved by the silent synchronization of the gears of a common mind."

Patti Smith (2016)

"What draws people to be friends is that they see the same truth. They share it."

C. S. Lewis (1960)

An important yet under-studied aspect of interpersonal relationships is the experience of finishing each other's sentences, of exchanging knowing glances, of being mentally 'in sync'—in other words, of sharing the same thoughts and feelings about the world. These phrases are ubiquitously used to describe experiences with other people, especially moments characterized by a strong sense of social connection. As Patti Smith's words reveal, close partners who have these experiences may feel that they have *merged minds.* Moments of *sharing the same truth*, as C. S. Lewis asserted, may play a powerful role in drawing strangers to each other. Yet, the nature of these moments has not been well investigated empirically. What aspect of human experience do these phrases capture?

We propose that these types of phrases evoke a specific phenomenology: the experience of having feelings, thoughts, and concerns in common with another person about the world in general—an experience we term *generalized shared reality*. In this paper, we propose that generalized shared reality plays two important roles in interpersonal relationships. First, that generalized shared reality is a potent social connector, contributing to both the experience of 'we'-

ness between close partners and the experience of 'clicking' between strangers. Second, that generalized shared reality provides a critical source of certainty about one's perceptions of the world. In this paper, we report eleven studies establishing the role of generalized shared reality in shaping both relational bonds and perceptions of reality.

Shared Reality Theory

Humans are fundamentally interpersonal beings. People turn to each other both to establish a sense of connection and to make sense of their experiences. They seek to create a shared reality: a perceived commonality of feelings, beliefs or concerns (i.e., inner states) with another person about a target referent (e.g., an event, an object, or a third person) (Echterhoff, Higgins, & Levine, 2009). Previous work has theorized that humans are driven to create shared realities in order to satisfy relational and epistemic motives (Echterhoff et al., 2009; Hardin & Conley, 2001; Hardin & Higgins, 1996). *Relational* motives refer to the need for interpersonal connection (Baumeister & Leary, 1995; Gere & MacDonald, 2010), whereas *epistemic* motives refer to the need to understand one's experiences and establish a sense of truth and certainty (Higgins, 2012; Kruglanski, 1990). For example, if two people share the same interpretation of an event, shared reality theory proposes that discussing this shared interpretation would both enhance their connection and serve to confirm their understandings of what really happened during that event.

Much work supports the idea that relational and epistemic motives facilitate shared reality formation. In terms of *relational* motives, people are more likely to create shared realities with individuals with whom they are motivated to connect, such as ingroup members or those they find friendly (Echterhoff, Higgins, & Groll, 2005; Echterhoff, Higgins, Kopietz, & Groll, 2008; Echterhoff, Kopietz, & Higgins, 2013; Sinclair, Lowery, Hardin, & Colangelo, 2005; Skorinko & Sinclair, 2018). Similarly, greater *epistemic* motivation, such as the experience of uncertainty,

increases the tendency to create a shared reality (Echterhoff & Higgins, 2017; Kopietz, Hellmann, Higgins, & Echterhoff, 2010; Pierucci, Echterhoff, Marchal, & Klein, 2014). Together, this work demonstrates that people are more likely to create shared realities when they are motivated both relationally and epistemically.

Little work, however, has examined whether shared reality actually produces relational and epistemic outcomes. Shared reality has been treated predominantly as an *outcome* driven by relational and epistemic motives and not as a *source* of relational and epistemic outcomes (see *Figure 1* for a depiction of this asymmetry). A notable exception is work by Echterhoff and colleagues (2005; 2008) demonstrating that shared reality enhanced relational motivation (wanting to connect with one's partner) and epistemic trust (trusting one's partner as a source of truth). Though shared reality theory proposes that shared reality enhances relational closeness and epistemic certainty (Hardin & Conley, 2001; Hardin & Higgins, 1996), these specific outcomes have never actually been examined in the shared reality literature. How does shared reality influence the social bond between familiar partners, or the development of a social connection between strangers? Further, how does shared reality influence the experience of certainty in one's perceptions of the world?

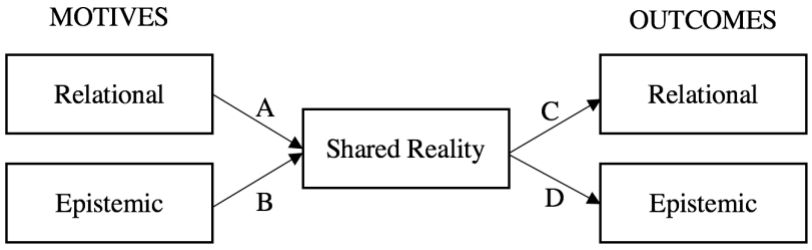

Figure 1. Depiction of shared reality process.

Though much of the literature to date has focused on how relational and epistemic motives drive the creation of shared reality (paths A and B), little work has explored how the creation of shared reality affects relational and epistemic outcomes (paths C and D).

Moreover, shared reality has been primarily studied in ecologically-limited settings with minimal-to-no interaction between participants. The phenomenology of shared reality in naturalistic, every-day conversation has been severely underexplored. What is it *like* to create a shared reality in actual interactions? We suggest that the phenomenology of shared reality *in vivo* differs from that which has been previously studied. In prior studies, shared reality has been constrained to being about *one* target in particular (e.g., a third person or an event). Shared reality has rarely been studied in what we propose to be its most common, naturalistic form: *generalized* shared reality.

Generalized Shared Reality in Interpersonal Relationships as an Integrative Construct

In this paper, we introduce the construct of relationship-specific, target-general shared reality, hereby referred to as *generalized shared reality*, which we define as *the subjective experience of sharing feelings, beliefs or concerns (i.e. inner states) in common with a partner about the world in general*. We suggest that in real-world interactions, people rarely experience a shared reality with another person as being about a *single* target in particular. Instead, they usually experience a shared reality with another person as being about a variety of topics. People have a majority of their conversations with familiar partners (Duck, Rutt, Hoy, & Streic, 1991), with whom they typically share reality about a multitude of targets (Rossignac-Milon & Higgins, 2018). Even between strangers, conversations typically span a range of topics (Hobbs, 1990). Generalized shared reality, unlike target-specific shared reality, spans these multiple topics. In other words, we theorize that shared reality is typically experienced as being about—as the name suggests—*reality at large*.

In the following sections, we integrate research from the field of social psychology suggesting that generalized shared reality plays a key role in interpersonal relationships. We begin

by assembling evidence pointing to the existence of generalized shared reality, between both close partners and strangers. Next, we describe the added value that the construct of generalized shared reality brings to the field of interpersonal relationships. We then outline the relational and epistemic consequences of generalized shared reality. Finally, we describe the behavioral indices of generalized shared reality, and outline the present empirical aims.

Evidence for Generalized Shared Reality in Close Relationships. Much research suggests that close partners develop a sense of generalized shared reality. Shared reality was first explicitly conceptualized as an important aspect of close relationships by symbolic interactionists (Berger & Kellner, 1964), who proposed that through the process of discussing their everyday experiences, close partners "weld together their reality"—their way of understanding and interpreting the world (p.12). Empirical work supports the idea that close partners construct these shared meaning-systems and shared ways of construing the world (Stephen, 1984; Duck, 1994; Przybylinski & Andersen, 2015).

Building on these ideas, Rossignac-Milon and Higgins (2018) propose that shared reality can serve as an integrative framework underlying various close relationship processes. Echoing Berger and Kellner (1964), they theorize that through their discussions, partners construct shared realities about the world around them. Partners frequently discuss the world at large—events, ideas, other people, and various topics outside of their relationship (Alberts, Yoshimura, Rabby, & Loschiavo, 2005; Woods, Lakey, & Sain, 2016). These discussions often serve as the basis for the establishment of shared feelings and beliefs, and the co-construction of an emergent shared worldview. Indeed, through the process of tuning to each other, partners tend to converge in their attitudes and emotional responses over time, thereby enhancing cohesion and mutual understanding (Anderson, Keltner, & John, 2003; Acitelli, Kenny, & Weiner, 2001; Butler, 2015;

Davis & Rusbult, 2001; Gonzaga, Campos, Bradbury, 2007). Additionally, through the process of recounting their everyday experiences to each other and collaborating to remember events, they build shared memory-systems (Harris, Barnier, Sutton, & Keil, 2014; Hirst, & Echterhoff, 2012).

Further, partners create shared realities about each other and about their relationship. For example, an important element of close relationships is the feeling that one's partner understands and verifies one's innermost self (Reis, Lemay, & Finkenauer, 2017; Swann & Brooks, 2012). Moreover, people come to align their own self-perceptions with their partner's perceptions of them, and change in accordance with their partner's ideals and goals for them (Murray, Holmes, & Griffin, 1996; Rusbult, Kumashiro, Kubacka, & Finkel, 2009; Fitzsimons, Finkel, & vanDellen, 2015). They also explicitly discuss their relationship—past, present and future—in order to build a shared relationship narrative and joint relationship goals (Acitelli, 1988; Baxter & Pittman, 2001; Fitzsimons et al., 2015). Thus, partners create shared realities about themselves and their relationship, which extend both retroactively and prospectively.

Partners co-construct a relationship subculture composed of dyad-specific shared practices—ways of thinking, behaving, interacting, and talking that are unique and special to their relationship. For example, partners engage in particular joint activities together, which form an important component of close relationship processes (Berscheid, Snyder, Omoto, 2004; Girme, Overall, & Faingataa, 2014; Woods, et al., 2016), and may become meaningful traditions (e.g. "we go for a stroll in the park on Sunday mornings"). Through their discussions, partners develop their own unique idioms (i.e., words or phrases) and ways of communicating (Bell, Buerkel-Rothfuss, & Gore, 1987; Ireland et al., 2011). Eventually, they may communicate without words—for instance, through a single exchanged glance, they may reference prior conversations, inside jokes, or shared experiences.

Finally, Rossignac-Milon & Higgins (2018) propose that the experience of shared reality is characterized by a specific phenomenology that manifests in everyday interactions between partners. Through the accumulation of shared inner states, practices, memory-systems and goal-systems, partners may come to merge their cognitive representations of the world to such an extent that they find themselves frequently having the same thoughts at the same time and being mentally locked in-step. By perceiving reality through this shared lens, partners may filter their environment in such a similar way that they experience synchronous reactions to objects in the world. During particularly pronounced moments of this cognitive synchrony, partners may feel that they have 'merged minds.'

Together, this work suggests that close partners create a shared reality that extends beyond a specific target or a given interaction, and is often about targets both internal and external to the relationship. They co-create a generalized shared reality that manifests in a unique phenomenology when they interact. The present research examines such generalized shared reality in close relationships, and also considers whether people can feel an initial sense of generalized shared reality when interacting with a stranger.

Evidence for Generalized Shared Reality in Initial Interactions. Rossignac-Milon & Higgins (2018) also conceptualize shared reality as a useful framework to integrate research on relationship initiation. A large body of work supports the idea that people can experience an initial sense of generalized shared reality in the context of a single conversation with a new acquaintance. Shared inner states (interests, preferences, values, and other attitudinal similarities) with others can play an important role in drawing people to each other initially (Baskett, Byrne & Hodges, 1971; Fehr, 1996; Launey & Dunbar, 2015; Lydon, Jamieson, & Zanna, 1988; Pinel et al., 2006; Werner & Parmelee, 1979). Further, stranger dyads converge in their thought-feeling content when

interacting (Ickes, Tooke, Stinson, Baker, & Bissonnette, 1988), and in the personal constructs they generally use to describe and evaluate both others and themselves (Deutsch & Mackesy, 1985; Kenny & Kashy, 1994). Even at the linguistic level, dyads establish common ground through semantic convergence, which fosters shared meaning (Babock, Ta, & Ickes, 2014). As discussions meander through a variety of topics (Hobbs, 1990), dyads may come to experience a sense of generalized shared reality very early on.

Further, evidence exists that strangers can also experience the phenomenology of generalized shared reality. Strangers often exhibit different forms of conversational synchrony and interactional alignment, such as collaboratively completing each other's sentences, jointly constructing utterances, and other micro-dynamics aimed at created shared meaning (Lerner 1991; 1996; Coates, 1997; Garrod & Pickering, 2009; McFarland, Jurafsky, & Rawlings, 2013; Koudenburg, 2018). Colloquial descriptions of this type of occurrence as a powerful social connector abound—"finishing each other's sentences," "speaking the same language"—yet the nature of this experience has not been directly studied. We believe that these colloquialisms describe the phenomenology of generalized shared reality.

Conceptual Distinctions from Other Interpersonal Relationship Constructs

Where does the construct of generalized shared reality fit into the domain of interpersonal relationship constructs? Though generalized shared reality is an integrative construct, it can be conceptually distinguished from existing constructs in important ways. As described above, many existing constructs can involve elements of generalized shared reality—yet, as they are conceptualized, they do not fully capture the construct of shared reality. These constructs can capture relationship experiences that are not shared reality experiences, and vice versa. In this

section, we describe the added value that shared reality brings to the field of interpersonal relationships by outlining several different components of generalized shared reality.

A Unique Phenomenology. Generalized shared reality is characterized by a unique phenomenology that experientially differentiates it from other constructs, which may not involve the experience of exchanging knowing glances, finishing each other's sentences, or thinking of things at the same time. These types of experiences have not been described in prior interpersonal research. On a conceptual level, this phenomenological aspect also differentiates generalized shared reality from most interpersonal constructs, which are generally conceptualized as *mental representations* (e.g. Agnew et al., 1998; Aron et al., 2004) as opposed to phenomenological experiences.

Importantly, the phenomenology of generalized shared reality is situated in the everyday interactions and conversations between partners—the ordinary moments they spend together, talking and doing shared activities (Berger & Kellner, 1964, Rossignac-Milon & Higgins, 2018). Pioneers in the field of interpersonal relationships such as Berscheid (1995) and Kenny (1995) voiced the importance of studying the everyday, mundane interactions of close partners—or in the words of Bolger and colleagues (2003), examining "life as it is lived." By identifying a unique dimension of what these quotidian interactions *feel like*, generalized shared reality captures a critical aspect of the lived subjective experience of relationships that has not been captured before.

Joint Attention to the World Outside of the Relationship. As put forward by Clark and colleagues (2008), the field of close relationships has mainly examined attentional foci directed either at the self, the partner, or the relationship itself, rather than the case where partners jointly attend to stimuli *outside* of their relationship. For example, the inclusion of the other in the self (Aron et al., 1992; how much do I include my partner in my sense of self?), identification

(Linardatos & Lydon, 2011; how much do I include my relationship in my sense of self?), support (Pierce, Sarason, & Sarason, 1991; is my partner there for me in times of need?), trust (Rempel, Holmes, & Zanna, 1985; is my partner someone I can count on?), intimacy (Fletcher, Simpson, & Thomas, 2000; how intimately connected do I feel to my partner?), perceived trait similarity (are my partner and I similar types of people?), commitment (Rusbult, Martz, & Agnew, 1998; how much do I want my relationship to last?), and satisfaction (Rusbult, et al., 1998; how happy am I in my relationship?) all involve the self, partner, or relationship, but do not involve the exterior world. As another example, in the case of perceived partner responsiveness (how much does my partner validate, care for, and understand me?), although the understanding subscale captures how much partners *feel understood* (how much does my partner get *me*?) (Reis, Lemay, & Finkenauer, 2017), it does not capture whether partners feel that they *understand the world together*: how much do *we* get *it*?

In contrast, generalized shared reality is about the world in general. Therefore, though generalized shared reality can include joint attention towards the self, the partner, and the relationship, because it is about *the world*, it must *also* involve partners jointly attending to objects *outside* of their relationship. Between new acquaintances, the experience of generalized shared reality may even be based exclusively on these external targets. Thus, generalized shared reality differs conceptually from many interpersonal constructs that only focus on perceptions of the self, the partner, or the relationship.

Notably, values lie outside the relationship per se. Indeed, perceived value similarity has been conceptualized as an important component of shared meaning-systems and world-views (Auger, Hurley, & Lydon, 2016; Przybylinski and Andersen, 2015) and plays an important role in close relationships (Leikas, Ilmarinen, Verkasalo, Vartiainen, & Lönnqvist, 2018). Thus perceived

value similarity bears the element of joint attention to exterior targets in common with shared reality, though it differs on other elements, such as epistemic motives and phenomenology.

Epistemic Motive. Shared reality is motivated in part by the desire to make sense of the world and establish the truth (Echterhoff & Higgins, 2017; Higgins, 2012). Constructs like IOS, identification, intimacy, satisfaction, and commitment do not involve this epistemic component—they are *not* inherently motivated by the desire to establish the truth. Some existing interpersonal constructs can be motivated epistemically, such as self-verification and perceived partner responsiveness, in so far as they are driven by the desire to better understand one's own self (i.e., I can seek self-verification from my partner in order to feel more certain that I know myself) (Swann, 2012; Reis et al., 2017). Similarly, people can seek to establish perceived value similarity in order to verify that their values truly matter (Byrne, 1961). In these instances, these constructs would involve the creation of a target-specific shared reality about the self or about values, which would be considered a subset of generalized shared reality.

However, these constructs do not necessarily involve epistemic motives—one can simply be informed that another person shares one's values or self-perceptions. For example, perceived value similarity can operate like a fact (e.g., you do or do not share values). A core component of shared reality is that it is the outcome of an epistemically-motivated process in which interactants are turning to each other in order to advance their understanding of the subject at hand (Echterhoff & Higgins, 2017). Thus, perceived value similarity and self-verification would only constitute examples of target-specific shared realities if they were constructed with this epistemic aim of establishing the truth.

Finally, epistemic trust (trusting one's partner as a source of truth) is epistemically motivated (Echterhoff et al., 2005). However, this construct differs from relational trust (faith in

one's partner, dependability, etc.), which has been predominantly studied in the close relationships literature (Simpson, 2007).

Perceived Commonality of Inner States. Generalized shared reality fundamentally involves the perception of holding inner states (e.g., attitudes, beliefs, feelings) *in common* with another person. This commonality component also differentiates it from other interpersonal relationship constructs. For example, the understanding and validating component of perceived partner responsiveness do not necessarily involve holding anything in common—I can perceive that my partner understands and validates my inner state without sharing it (e.g., my partner may understand that I fear dogs without also feeling afraid of them). Likewise, intimacy, commitment, trust, satisfaction, and support do not necessarily involve the feeling of sharing thoughts, feelings or beliefs (i.e., having these in common).

Inclusion of the other in the self, because it involves an overlapping of selves, also includes some kind of commonality element. Similarly, any type of similarity, such as perceived trait similarity or perceived value similarity, also involves some type of commonality. However, not all of these elements involve the perceived commonality of *inner states*. For example, perceived trait similarity would involve a commonality of personal characteristics. Similarly, the resources aspect of the inclusion of the other in the self would not be a sharing of inner states.

Dyad as a Unit. Generalized shared reality involves the perception of the dyad as a unit, as opposed to the perception of either partner. As an example, relationship satisfaction involves the question, "Am I happy in my relationship?"—a question about the self—as opposed to "Are *we* happy in *our* relationship?"—a question about the dyad. Most constructs involve the perception of one's own experience in the relationship (e.g., "do I feel committed to my partner?"), or one's perception of one's partner (e.g., "is my partner being responsive to me?"). Even IOS has been

conceptualized as the perception of how much one includes one's partner in one's sense of self, and not as the perception of how much both partners include each other in their sense of self. Similarly, cognitive interdependence (Agnew et al., 1998) is described as a pluralistic mental representation of the *self-in-relationship*. Instead, generalized shared reality adopts a dyad-level perspective, involving the perception of *both* partners' experiences in the relationship.

Role in Initial Relationships. Generalized shared reality can be experienced between strangers. This element further distinguishes it from other relationship constructs, many of which have been exclusively conceptualized in the context of established relationships and even specifically in romantic relationships. For example, commitment, satisfaction, and relationship-specific identification are relationship elements that cannot be felt between new acquaintances—they are characteristics of an existing relationship (Rusbult et al., 1998; Lydon & Linardatos, 2012). Though generalized shared reality is likely to grows over the course of a relationship, it can be present in initial interactions. In this sense, generalized shared reality is similar to responsiveness, intimacy, perceived similarity, trust, and inclusion of the other in the self, which can also manifest between strangers (e.g., Aron et al., 1997; Birnbaum et al., 2016).

Relational Consequences of Generalized Shared Reality

How does generalized shared reality influence social bonds? Much empirical work suggests that generalized shared reality is a powerful source of social connection. As outlined by Rossignac-Milon & Higgins (2018), we predict that shared reality will have different relational outcomes depending on the relational stage, specifically, whether between close partners or strangers.

Relational Consequences between Close Partners. Rossignac-Milon and Higgins (2018) propose that by accumulating shared feelings ("what we feel"), shared practices ("what we do"),

shared memory-systems ("what we remember") and shared goal-systems ("who we will become"), partners may come to develop a strong sense of 'we'-ness and inclusion of a close other in the self (IOS). IOS involves incorporating a partner's resources, perspectives, and identities into the self (Aron et al., 1991), and has been linked to myriad relationship benefits including enhanced commitment and relationship-maintenance processes (Agnew, Van Lange, Rusbult, & Langston, 1998; Aron, Mashek, & Aron, 2004; Linardatos & Lydon, 2011). It is characterized by an overlap between cognitive representations of the self and other (Mashek, Aron, & Boncimino, 2003) and is strongly linked to the state of cognitive interdependence, in which the self is conceptualized as part of a pluralistic self-and-partner collective (Agnew et al., 1998). This effect even manifests linguistically: use of first-person *plural* pronouns, such as "we," "us," "our" (as compared to first-person *singular* pronoun use such as "I," "me," "mine"), correlates with IOS and has been associated with greater relationship commitment and longevity (Agnew et al., 1998; Buehlman, Gottman, & Katz, 1992; Gottman & Levenson, 1999; Karan, Rosenthal, & Robbins, 2018). In this paper, we broadly refer to IOS and 'we'-ness as self-other overlap. Despite the work examining the downstream consequences of self-other overlap, little work has examined its sources.

Though, as outlined in the prior section, self-other overlap differs conceptually from generalized shared reality, we theorize that generalized shared reality is a source of self-other overlap. Additionally, the relationship between generalized shared reality and self-other overlap may be bidirectional and mutually reinforcing, such that self-other overlap also enhances shared reality. However, for the present purposes we will only explore the effect of shared reality on self-other overlap.

In this paper, we operationalize self-other overlap both in terms of self-reported IOS and in terms of linguistic markers of 'we'-ness, i.e., first person plural pronoun use. We hypothesize

that self-reported generalized shared reality between close partners will predict self-other overlap at the daily level, *in vivo*, and that the effect of shared reality on self-other overlap will remain when accounting for other conceptually-related relationship constructs, such as satisfaction, commitment, intimacy, identification, perceived partner responsiveness, and perceived trait or value similarity. Finally, we predict that experimentally threatening the sense of generalized shared reality by assigning participants to recall a moment of low (*vs.* high) shared reality with their partner will lower self-other overlap, as measured by linguistic markers of 'we'-ness.

Relational Consequences between Strangers. Rossignac-Milon and Higgins (2018) propose that shared reality plays a powerful role in facilitating the initial development of interpersonal closeness and enhancing the experience of 'clicking.' Supporting this idea, ample evidence in social psychology demonstrates that shared inner states are an especially potent social connector. For example, the effects of similarity on initial closeness are most powerful when similarity is experienced as a shared reality: Recent work has shown that *perceived* similarity plays a larger role in attraction than *actual* similarity (Montoya, Horton, and Kirchner, 2008; Tidwell, Eastwick, & Finkel, 2013), and that shared *inner* states, such as feelings, predict liking more than shared characteristics (Montoya & Horton, 2013; Pinel, 2018; Pinel, Landau, Alexander & Pyszczynski, 2006). For example, shared emotional responses and shared laughter foster social connection (Fischer & Manstead, 2008; Kurtz, & Algoe, 2017; Treger, Sprecher, & Erber, 2013). These results are consistent with the prediction that shared reality—the *perceived* commonality of *inner* states—increases closeness.

The experience of 'clicking' abounds in colloquial descriptions of relationship formation, yet researchers have yet to identify how it develops. A notable exception is work by McFarland and colleagues (2013) linking the behavior of collaboratively completing each other's sentences

during speed-dates to the feeling of clicking, which suggests that the phenomenology of generalized shared reality should enhance clicking.

Though the relationship between generalized shared reality and these relational variables may be bidirectional, in this paper we focus on the effect of shared reality on these relational variables. We investigate whether (1) experimentally manipulating shared reality between strangers increases closeness, rapport, and the desire to work together again (2) self-reported generalized shared reality between stranger dyads conversing online predicts 'clicking', closeness, rapport, and the desire to interact again over and above other interpersonal constructs, such as perceived trait similarity and perceived partner responsiveness. We also sought to examine the effect of generalized shared reality on these relational outcomes over and above the perception of target-specific agreement, in order to demonstrate that the effects of generalized shared reality between strangers are not purely a product of target-specific shared reality.

Epistemic Consequences of Generalized Shared Reality

Beyond relational outcomes, how does the phenomenological experience of generalized shared reality influence people's perceptions of the world? As outlined by Rossignac-Milon & Higgins (2018), much empirical work suggests that generalized shared reality plays a critical epistemic function as a validator of our perceptions and a source of certainty, both between close partners and strangers. Because the epistemic consequences are in reference to one's interpretation of the outside world, we do not expect these to depend on the nature of the relationship.

Epistemic Consequences between Close Partners. Numerous lines of work have pointed to the epistemic function of relationships as sources of verification, certainty, and meaning (Andersen & Przybylinski, 2018; Heine, Proulx, & Vohs, 2006; Mikulincer, et al., 2003; Murray, Lamarche, & Seery, 2018; Swann, 2012). 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 (Przybylinski & Andersen, 2015). Further, people are highly motivated to protect the shared worldview they have developed with a partner (Hardin & Conley, 2001; Mikulincer, Florian, & Hirschberger, 2003). Threatening partners' sense of having a shared worldview elicits compensatory attempts to bolster perceived relationship quality (Auger, et al., 2016). 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, Gomillion, Seery, & Kondrak, 2017). Together, this work suggests that close relationships form an important source of meaning and coherence.

Building on this work, Rossignac-Milon and Higgins (2018) propose that throughout the development of shared reality, partners increase their reliance on each other as epistemic companions who make sense of the world together. In other words, partners increasingly turn to each other to feel certain of their interpretations and to establish the truth. Having a stable sense of shared reality with one's partner could increase one's sense of knowing what is true and real. This reliance is so important that being confronted with a loss or absence of shared reality with one's partner could activate efforts to restore one's sense of certainty.

Given this prediction that experiencing a shared reality with one's partner provides a stable source of certainty, in this paper, we examine whether experimentally threatening this shared reality activates efforts to restore one's sense of certainty. Specifically, we expect that when recalling a moment of low (*vs.* high) shared reality with one's partner, people will bolster their efforts to make sense of things in an attempt to establish a sense of certainty and truth.

Epistemic Consequences between Strangers. Previous work also suggests that even in the context of an interaction between strangers, generalized shared reality enhances certainty and the experience of joint sense-making. Echterhoff and colleagues (2005; 2008) found that experimentally manipulating target-specific shared reality between strangers enhanced epistemic trust—the extent to which partners felt they could trust their partners as sources of truth about the object of their shared reality. Rossignac-Milon and Higgins (2018) propose that shared reality produces a sense of "epistemic glue," in which interacting partners begin to view each other as epistemic collaborators who make sense of the world together. More specifically, they propose that shared reality enhances the experience of joint sense-making and certainty.

However, researchers have yet to explore whether the creation of shared reality actually enhances the experience of certainty or joint sense-making, or of having converged in one's attitudes with a conversation partner. In this paper, we seek to demonstrate the effect of shared reality on these epistemic outcomes. Further, we examined the effect of shared reality on these outcomes over and above other interpersonal constructs in order to empirically differentiate generalized shared reality from these constructs. We also examine the effect of generalized shared reality on the experience of epistemic trust, joint sense-making, and certainty over and above the perception of target-specific agreement, in order to demonstrate that the effects of generalized shared reality between strangers are not purely a product of target-specific shared reality.

Behavioral Antecedents of Generalized Shared Reality

What kinds of interaction behaviors give rise to a sense of generalized shared reality? In taking a phenomenologically-rooted, ecologically-grounded approach, we investigate the types of interaction behaviors that facilitate the creation of generalized shared reality in naturalistic conversations. In interacting with each other, do conversation partners behave in certain ways that

lead them to develop the sense of generalized shared reality? In this paper, we propose that certain observable interaction behaviors, like finishing each other's sentences, saying things at the same time, or vocalizing agreement and shared feelings, will give rise to the subjective experience of generalized shared reality, which will in turn produce both epistemic and relational outcomes. In other words, we propose that the experience of generalized shared reality mediates the relationship between these interaction behaviors and these relational and epistemic outcomes. These interaction behaviors will contribute to these outcomes to the extent to which they are experienced as a generalized shared reality (See *Figure 2*).

Importantly, we theorize that the temporal sequence of the behaviors and the subjective experience of generalized shared reality will depend on the relational context. In the context of an interaction between stranger dyads, the experience of generalized shared reality necessarily arises out of the interaction, because the partners have no generalized shared reality before they interact. They can only draw from these shared reality behaviors during their interaction in order to gain a sense of generalized shared reality, so these interaction behaviors necessarily precede the experience of generalized shared reality. In contrast, in the context of an ongoing close relationship, the prior level of generalized shared reality may influence the extent to which partners display these behaviors in a given interaction—those who have a high level of generalized shared reality to begin with may be more likely to exhibit these behaviors. In this paper, we investigate these interaction behaviors specifically in the context of stranger dyads, in which the temporal sequence is such that the interaction behaviors precede the experience of generalized shared reality.

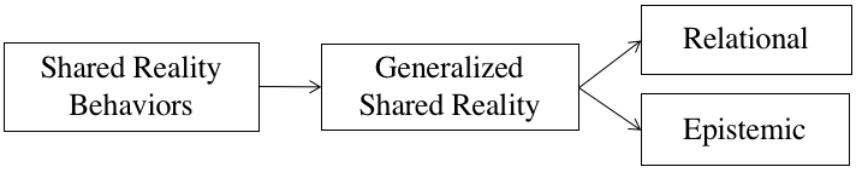

Figure 2. Generalized shared reality process in initial interactions.

Generalized shared reality is hypothesized to mediate the relationship between observable shared reality behaviors and relational and epistemic outcomes in interactions between strangers.

Overview

Our first aim was to investigate the occurrence of generalized shared reality between both close partners and strangers. Our second aim was to investigate the relational and epistemic outcomes of generalized shared reality. In terms of relational outcomes, we predicted that generalized shared reality would function as an important source of social connection. Specifically, we hypothesized that generalized shared reality would enhance the experience of self-other overlap between close partners, and foster the sense of clicking, closeness, and rapport between strangers. In terms of epistemic outcomes, we predicted that generalized shared reality would function as an important source of the experience of certainty and truth, both between close partner and strangers. We also sought to demonstrate that generalized shared reality predicted each of these outcomes over and above other interpersonal constructs, and over and above target-specific agreement. Finally, our last aim was to investigate the behavioral antecedents of generalized shared reality in the context of a naturalistic interaction, and to identify the role of generalized shared reality as a mediator between these interaction behaviors and relational and epistemic outcomes.

To test these hypotheses, we designed a series of studies using varied methodologies. We began by identifying the occurrence of generalized shared reality in daily experiences between close partners to establish that this phenomenological experience occurs *in situ*—in natural

settings—and to explore its link with IOS (Studies 1a and 1b). Next, we examined whether the effect of generalized shared reality on IOS between close partners persists when accounting for conceptually-related close relationship constructs (Studies 2a – 2d). As a proof-of-concept, Study 2d also explored whether generalized shared reality uniquely corresponded to the likelihood of having experienced the feeling of 'merged minds,' which we conceptualize as particularly pronounced moments of the generalized shared reality phenomenology. Next, to advance our construct validation, we showed that instances of high and low generalized shared reality differ in the extent to which partners exhibit these relational and epistemic outcomes. We used linguistic markers to demonstrate that partners randomly assigned to describe a moment of low (*vs.* high) generalized shared reality with their romantic partner exhibited lower 'we'-ness, and greater efforts to restore their sense of certainty (Studies 3a and 3b). We then turned to an established shared reality paradigm in Study 4a and 4b in order to examined the effects of experimentally manipulating shared reality between strangers on feelings of closeness, rapport, and the desire to work together again, and also on epistemic trust. Finally, in Study 5, we conducted an ecologically-rich, naturalistic study between newly-acquainted dyads chatting online to investigate how generalized shared reality arises out of particular interaction behaviors, and how, in turn, generalized shared reality produces both key relational outcomes (clicking, closeness, rapport, and the desire to chat again), and key epistemic outcomes (epistemic trust, joint sense-making, perceived attitude convergence, and certainty). The aims of each of these studies are summarized in *Tables 1* and *2*.

Table 1. *Aims summarized across each study.*

Aim	Study 1	Study 2	Study 3	Study 4	Study 5
A: Close Partner Context	•	•	•		
B: Stranger Context				•	•
C: Relational Outcomes	•	•	•	•	•
D: Epistemic Outcomes			•	•	•
E: Behavioral Antecedents					•

Table 2. *Outcome variables of interest summarized across each study.*

Outcome Variable	Study 1	Study 2	Study 3	Study 4	Study 5
Relational					
Self-other Overlap	•	•	•		
Closeness				•	•
Rapport				•	•
Desire to work together				•	•
Clicking					•
Epistemic					
Certainty			•		•
Epistemic Trust				•	•
Joint Sense-making					•
Perceived Convergence					•

Studies 1a-1b

Introduction

In Studies 1a & 1b, we sought to examine whether generalized shared reality predicted self-other overlap in the context of daily, real-life experiences. Daily diary paradigms allow researchers to explore psychological processes as they unfold in their natural settings (Bolger, Davis, & Rafaeli, 2003). We used a five-night daily diary design in which participants selected a close partner and reported on their interactions with the partner each day, their sense of generalized shared reality, and their IOS with that partner. This design allowed us to: (1) identify generalized shared reality as an experience occurring in daily interactions with a close partner; and (2) examine the influence of generalized shared reality on IOS as a within-person process in an ecologically valid setting; and (3) perform lagged analyses to investigate the influence of generalized shared reality on IOS on a given day, *adjusting for IOS on the previous day*. Adjusting for lagged IOS results in the outcome variable being *residualized change* in IOS (today's IOS adjusting for yesterday's IOS). This strengthens the claim that any change in IOS is due to the events of the day in question rather than lingering effects from the day before (Bolger & Laurenceau, 2013).

For brevity, given the resemblance of the methods, results, and discussion for each of these studies, we aggregated the descriptions of these as one section each.

Method

Participants

In Study 1a, participants were 263 undergraduates enrolled in an eligible undergraduate psychology course who received course credit in exchange for their participation. The conclusion of the academic year served as our stopping rule. After exclusions, the final sample consisted of

250 participants.[1] Participants were 21.41 years old on average (*SD* = 5.07). There were 90 male participants, 142 female participants, and one participant who identified as "other." We excluded any diary days on which participants failed the attention check (only 34 diaries total out of 1180).

In Study 1b, Participants were 190 undergraduates enrolled in an eligible undergraduate psychology course who received course credit in exchange for their participation. The conclusion of the academic year served as our stopping rule. Participants were 20.70 years old on average (*SD* = 4.34). There were 49 male participants, 118 female participants. All participants passed the attention check every day.

Procedure

Participants were instructed to select a relationship partner with whom they interacted on a daily basis. In Study 1a, there were 85 who chose their romantic partner, 71 participants chose a friend, 38 a roommate, 26 a parent, 8 a sibling, and 5 a different type of relationship partner. In Study 1b, there were 50 participants who chose their romantic partner, 63 a friend, 22 a roommate, 21 a parent, 10 a sibling, and 3 a different type of relationship partner. Each night for five nights between 8 pm and 1 am (beginning on a Sunday), participants were asked to respond to questions about their interactions with the relationship partner, including the degree to which they had experienced generalized shared reality and IOS.[2]

[1] Because participants were drawn from an undergraduate participant pool for course credit, we were required to allow every person who enrolled to participate. As such, there were six participants who completed this study twice—once in each semester that the study was offered—thus their second round of participation was removed from the sample. We also excluded seven participants who did not complete any diary questionnaires (only the initial questionnaire).

[2] Additionally, we collected measures of social support and several individual difference measures, none of which are related to the present paper and will not be discussed further.

Materials

Generalized Shared Reality (SR-G). Participants completed a daily measure of self-reported generalized shared reality in close relationships that we created based on our conceptualization of the phenomenological experience of generalized shared reality (capturing the sense of sharing inner states about the world in general, experiencing an epistemic connection, and experiencing moments of cognitive synchrony) and expert ratings that provided content validation of the items. Participants were asked to think about the interactions they had with their partner that day and rate their agreement (1 – Strongly Disagree, 7 – Strongly Agree) with three items: "Today we shared the same thoughts and feelings about things," "Today our conversations felt very real," and "Today we thought of things at the exact same time." The reliability of within-subject change (Study 1a: 0.78; Study 1b: 0.76) met current standards (Bolger & Laurenceau, 2013).

Inclusion of Other in the Self (1-item). Participants were asked to select one in a series of increasingly overlapping circles representing how they felt about themselves and their relationship partner that day, ranging from non-overlapping (1) to nearly completely overlapping (7) (Aron et al., 1992).

Results

Descriptive Statistics. In Study 1a, the within-person correlation of generalized shared reality and IOS in this sample was r = 0.52, p <.001, 95% CI [0.47, 0.58]. This correlation indicated that shared reality and IOS still had nearly 75% unshared variance at the within-person level, indicating that these are not redundant constructs. In Study 1b, the within-person correlation was r = 0.55, p <.001, 95% CI [0.49, 0.61], indicating nearly 70% unshared variance at the within-person level.

Analytic Approach. Our central analyses were conducted using multilevel modeling with the '*lme4'* and '*lmerTest'* packages in R (Bates, Mächler, Bolker, & Walker, 2014; Kuznetsova, Brockhoff, & Christensen, 2017). Following procedures specified by Bolger & Laurenceau (2013), shared reality and IOS were within-person mean centered. In each analysis, shared reality was entered as a predictor, controlling for diary day (centered on the middle day of the study, which was the third day). Each analysis also included random intercepts of subject and shared reality as a random slope.

IOS. In Study 1a, as hypothesized, there was a main effect of shared reality on IOS, b = 0.51, $p < 0.001$, 95% CI [0.44, 0.59]. This result indicates that on days when participants reported a higher level of shared reality relative to their own average, they reported a higher level of IOS. This effect replicated in Study 1b: $b = 0.49$, $t = 14.48$, $p < .001$, 95% CI [0.42, 0.56].

Next, we simultaneously entered the prior day's IOS as a predictor, in order to strengthen the claim that IOS on a given day is a function of the events of the day in question rather than to lingering effects from the day before. This adjustment allowed us to demonstrate that shared reality on a given day predicted the *change* in IOS from the previous day. In Study 1a, the effect of shared reality on IOS remained highly significant ($b = 0.53$, $p < .001$, 95% CI [0.44, 0.62]). See *Figure 3* for an illustration of this effect. This effect replicated in Study 1b: $b = 0.45$, $p < .001$, 95% CI [0.37, 0.53].

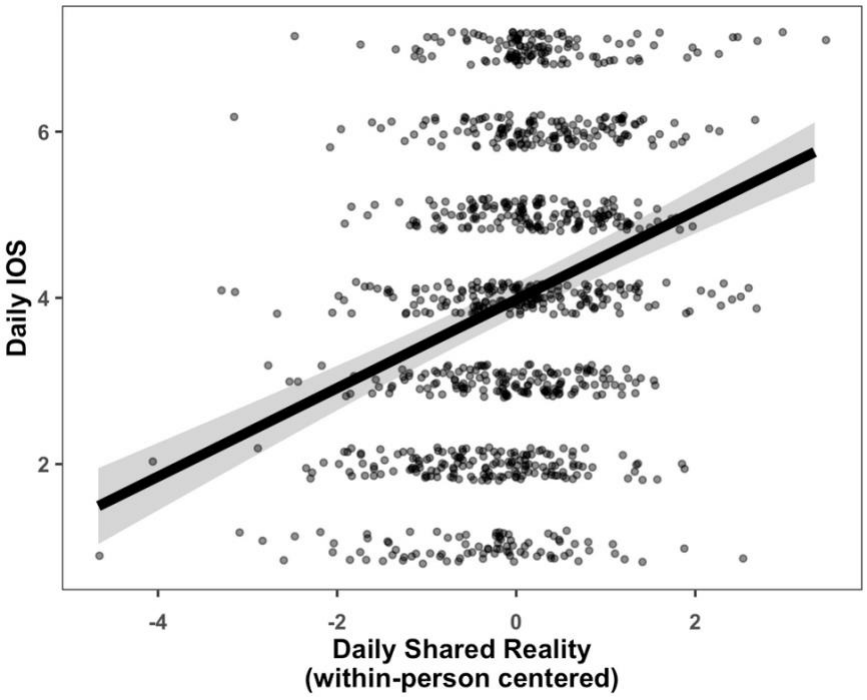

Figure 3. Within-person Daily Shared Reality Predicting Daily IOS (Study 1a)

Note that these results adjust for Diary Day and the previous day's IOS.

Discussion

Across both of these studies, we found a main effect of generalized shared reality on IOS at the daily level. Further, this effect held when controlling for IOS on the prior day. These results are important for two reasons. First, they demonstrate that, in real life, generalized shared reality with a close partner fluctuates from day to day. Second, these results demonstrate that on days that people feel a greater sense of generalized shared reality with their partner relative to their own average, they feel a greater sense of IOS. Further, this effect is not due to residual effects from the previous day's events. These results provide *in vivo*, ecologically-grounded results supporting the hypothesis that generalized shared reality predicts IOS.

Studies 2a-2d

Introduction

Having identified the state of generalized shared reality as an important phenomenological experience for close relationship partners in everyday life, in Studies 2a-2d, we confirmed the uniqueness of generalized shared reality as a relationship construct and examined whether the relation between generalized shared reality and self-other overlap persisted when accounting for other close relationship constructs. We hypothesized that: (1) generalized shared reality items would load onto a unique factor in exploratory factor analyses with items from all relationship constructs, and (2) generalized shared reality would predict self-other overlap (measured by IOS) over and above other conceptually-related relationship constructs.

Given that generalized shared reality is related to various close relationship processes, we predicted that it would be correlated with all close relationship variables. However, we also predicted that it would be empirically distinct from these constructs. Specifically, we sought to differentiate generalized shared reality from established constructs such as commitment, satisfaction, identification, trust, support, perceived partner responsiveness, relationship centrality, interpersonal closeness, and IOS. Though we theorize that generalized shared reality enhances IOS, we conceptualize these as distinct constructs. As outlined in the introduction, generalized shared reality is conceptually unique in that, unlike established constructs, it involves experiencing unique phenomenology, jointly attending to the world *outside* of their relationship, establishing a commonality of inner states, experiencing epistemic motives, and reflecting on the dyad as a unit. In addition to the exploratory factor analyses with items from all scales, the predictive validity

results also point to this uniqueness through predictive augmentation (Shrout & Yip-Bannicq, 2017).

In Studies 2c and 2d, we also sought to isolate the effects of generalized shared reality as compared to perceived value similarity and a generalized sense of similarity of *non-inner states*. Though perceived similarity of values also involves a commonality of inner states about targets external to the relationship, it differs from generalized shared reality in that it is narrower in scope, does not involve the same phenomenology, and does not involve epistemic motives or the conceptualization of the dyad unit. We sought to differentiate generalized shared reality from perceived value similarity by demonstrating that generalized shared reality predicts IOS over and above perceived value similarity, in order to demonstrate that shared values do not drive the effect of shared reality on IOS. We also sought to differentiate generalized shared reality from a generalized sense of commonality about non-inner states—perceived similarity of personal characteristics in general—by demonstrating that generalized shared reality items and generalized perceived similarity items load onto different factors and by demonstrating that generalized shared reality predicts IOS over and above generalized perceived similarity. Thus, through these analyses, we sought to investigate the uniqueness of the construct of perceived shared reality as the commonality of inner states about the world in general, and to demonstrate that the effects of generalized shared reality on IOS extend beyond the effects of simply having perceived value similarity or a perceived similarity of non-inner states.

Finally, as a proof-of-concept, in Study 2d we investigated the extent to which shared reality predicted the likelihood of having had the experience of 'merged minds,' which we conceptualize as a particularly pronounced moment of the generalized shared reality phenomenology. We are not proposing that the experience of 'merged minds' is a necessary

condition for people to experience a high sense of generalized shared reality. We are proposing that people with a higher sense of generalized shared reality are more likely to have experienced 'merged minds.' We also believe that it would be rare to experience merged minds without having some degree of generalized shared reality. This analysis also allowed us to further demonstrate that generalized shared reality is non-redundant with other constructs, by showing that it relates to an aspect of human experience that other constructs remain silent on.

For brevity, given the resemblance of the methods, results, and discussion for each of these studies, we aggregated the descriptions of these as one section each and we present results pooled across studies whenever possible. However, because each of these studies involves a slightly different set of measures, any analyses involving these unique measures are presented study-by-study.

Method

Participants

Participants in Study 2 were screened to have been in a romantic relationship for at least one year. Because the demographic information did not differ substantially across samples, these are pooled here (for demographics and sample size determinations in each sample, see *Appendix*). We recruited 678 M-Turk workers in total who participated for financial compensation. Prior to data analysis, seventy-one were excluded for failing at least one of two attention checks. The final sample consisted of 607 participants. Their mean age was 35.95 (SD = 11.51), 62% were female, and 88% were heterosexual. Their average relationship length was 9.40 years (SD = 8.40), and 83% were cohabiting and/or married.

Materials

Participants were instructed to rate their agreement with the items in each of the following measures on a 7-point Likert-type scale (endpoints: 1 = Strongly Disagree, 7 = Strongly Agree).

Generalized Shared Reality (SR-G) [Study 2a-2d] (α = .90). Participants completed an eight item self-reported measure of generalized shared reality that we expanded from Study 1. The items were based on our conceptualization of the phenomenological experience of generalized shared reality in close relationships (capturing the experience of sharing and co-constructing inner states about the world in general, connecting epistemically, and experiencing moments of cognitive synchrony) and expert ratings providing content validation of the items: "We frequently think of things at the exact same time," "Through our discussions, we often develop a joint perspective," "We typically share the same thoughts and feelings about things," "Events feel more real when we experience them together," "The way we think has become more similar over time," "We often anticipate what the other is about to say," "We are more certain of the way we perceive things when we are together," and "We often feel like we have created our own reality." Note that in Study 2a, to rule out the otherwise plausible explanation that shared reality items would load onto a unique factor in exploratory factor analyses with items from all relationship constructs because of clustering of phrasing, we phrased the items in the same way as the other scales—i.e. using "my partner and I" instead of "we" (e.g., "My partner and I typically share the same thoughts and feelings about things").

Satisfaction [Study 2a-2d] (α = .95). Relationship satisfaction was assessed with the 6-item Satisfaction sub-scale from the Investment Model Scale (Rusbult, Martz, & Agnew, 1998).

Commitment [Study 2a-2d] (α = .96). In Studies 2a-2c, relationship commitment was assessed with a 15-item scale used by Rusbult, Kumashiro, Kubacka, and Finkel (2009)—an

elaborated version of the commitment measure from the Investment Model Scale (Rusbult et al., 1998). The 7-item version was used in Study 2d (α = .83; Rusbult et al., 1998).

Perceived Partner Responsiveness [Study 2a-2d] (α = .98). This 17-item scale assesses the degree to which participants perceive that their partner understands, values, and cares for core aspects of the self (Reis, 2003).

Relationship-Specific Identification [Study 2a-2d] (α = .93). This 11-item scale assesses the degree to which people incorporate their relationship into their sense of self (Linardatos & Lydon, 2011).

Inclusion of Other in the Self [Study 2a-2d]. The same item was used as in the diary study, but asked about participants' general IOS (as opposed to IOS on that day).

Intimacy Subscale of Perceived Relationship Quality Components [Study 2b-2d] (α = .91). To measure intimacy, we used the 3-item subscale of the PRQC (Fletcher, Simpson, & Thomas, 2000).

Perceived Social Support [Study 2b-2c] (α = .88). We measured social support with a 7-item scale (Pierce, Sarason, & Sarason, 1991)

Trust [Study 2c] (α = .92). We measured trust with a 12-item scale which measures the predictability, dependability, and faith that participants feel in their partner (Rempel, Holmes, & Zanna, 1985).

Perceived Value Similarity [Study 2c-2d]. In Study 2c, we used a 28-item subset of the *Schwartz Value Inventory* (Schwartz, 1992), and in Study 2d, we used the 21-item *European Social Survey* (Schwartz, 2003). In both studies, these were answered on behalf of self and partner based on the procedure used by Przybylinski and Andersen (2015). Participants were asked to rate the extent to which they endorsed different values (which measured openness, conservatism, self-

transcendence, and self-enhancement), and then rate the extent to which they felt that their partner endorsed those values. Their scores were computed for each type of value and within-person mean-centered (for the self and for the partner, to capture the relative strength of values as is standard practice; Schwartz, 1992). We then computed the absolute value of the difference between the participant's values and their perception of their partner's values, and multiplied this value by -1 (such that higher numbers indicate greater similarity).

Generalized Perceived Similarity [Study 2d] (α = .95). We wrote five items to measure a general sense of perceived similarity: "My partner and I are very similar people," "…are very much alike," "…are the same type of person," "…have a lot of characteristics in common," and "…have similar personalities."

Relationship Centrality [Study 2d] (α = .87). We used a 4-item measure of how central participants felt that their romantic relationship was in their lives (Agnew et al., 1998)

Relationship Closeness Inventory [Study 2d]. This scale measures behavioral interdependence as the frequency (time spent alone together), diversity (range of activities), and strength (influence of partner across life domains) of impact that partners have on each other's activities (Berscheid et al., 1989).

Merged Minds [Study 2d]. To assess whether participants had experienced a lay sense of having "merged minds," we asked them, "Have you ever felt that you and your partner had, in some sense, merged your minds?" with three possible answers: "yes," "no," and "I have no idea what you mean by that."[3]

Procedure

[3] We included this latter option in order to guard against an artificial inflation of 'yes' answers: we theorized that some participants might have trouble imagining what the expression 'merged minds' means unless they have experienced it, but might be reluctant to answer "no" due to relationship-enhancement biases.

Participants completed the close relationship self-report measures, which were presented in a randomized order. Between each questionnaire, they completed a 30-second filler anagram task to prevent spill-over effects between the questionnaires. Finally, they answered demographic questions.

Results

Descriptive Statistics. The mean value for shared reality across studies was 5.38 (SD = 1.08, min = 1.00, max = 7.00).

Confirmatory Factor Analysis. Using the *lavaan* R package (Rosseel, 2012), we conducted a CFA with robust standard errors (MLR) to test a model in which all items loaded on a single latent variable. To ensure adequate sample size for a CFA, we pooled data from all four studies. To correct for data aggregation across samples, we centered each item within each sample and then added the grand mean of the items across samples (however, the results are nearly identical without this correction). The model yielded satisfactory fit statistics (Marsh, Hau, & Wen, 2004): CFI = .95, SRMR = .04, RMSEA = .09 [90% CI: 0.07, 0.10], χ^2 (20) = 107.28 ($p < .001$). The items had adequately high loadings (Matsunaga, 2010), ranging from 0.64 to 0.80. These results corroborate the unidimensional structure of the shared reality construct.

Convergent validity. Across Studies 2a-2d, the close relationship variables, including SR-G, all significantly and positively correlated with each other, which is expected given that they all measure some positive aspect of close relationships (see and *Figure 4* for a scatterplot matrix of those in Study 2a; and *Table 3* for a correlation matrix in Study 2d (selected because of this study included the greatest number of constructs); see *Appendix* for correlation matrices in Studies 2a-2c). The correlations between SR-G and each of the other scales were comparable to the

correlations among existing close relationship constructs, suggesting that shared reality did not disproportionately correlate with any one construct.

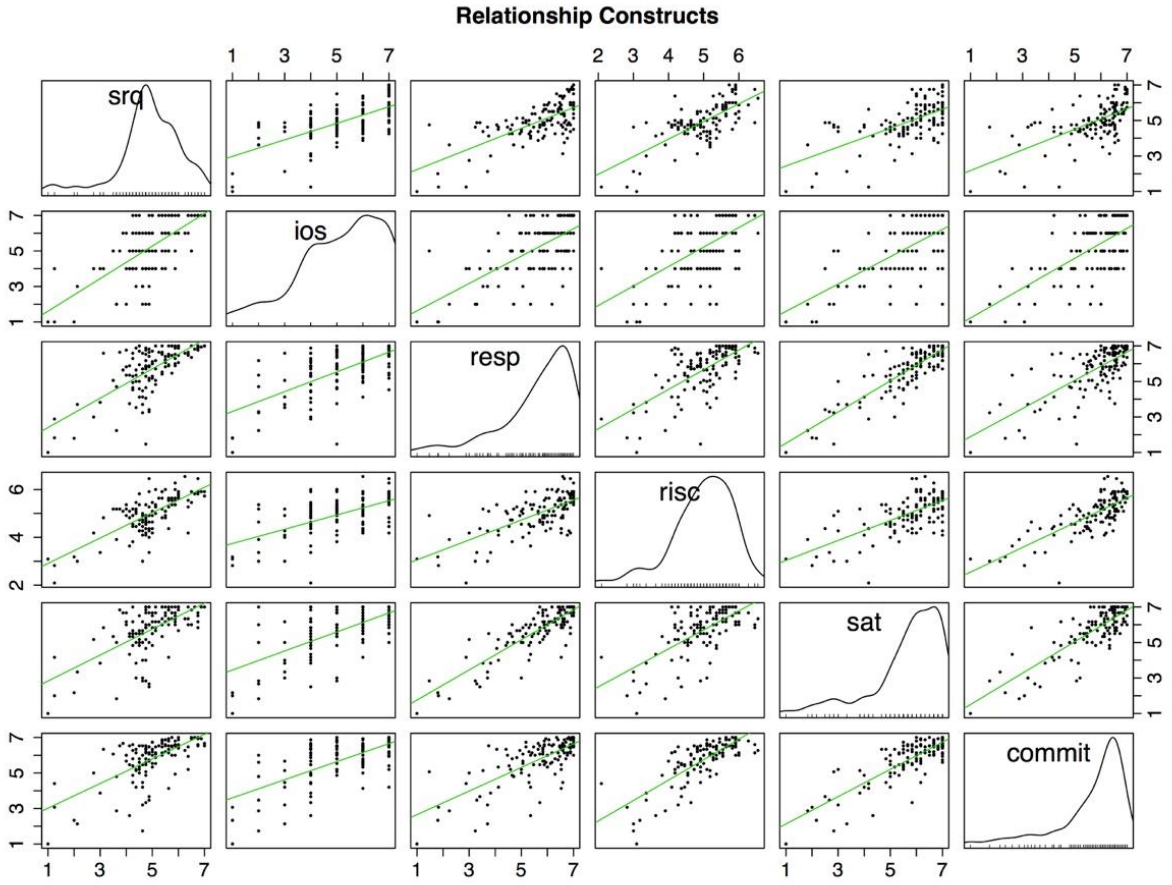

Figure 4. Scatterplot Matrix of Close Relationship Variables (Study 2a).

(Shared Reality = srq, IOS = ios, Responsiveness = resp, Identification = risc, Satisfaction = sat, Commitment = commit). Density plots for each variable are displayed along the diagonal.

Table 3. *Correlation Matrix of Close Relationship Variables (Study 2d).*

		SR	1	2	3	4	5	6	7	8	9
1.	IOS	**.60**	-	-	-	-	-	-	-	-	-
2.	Intimacy	**.64**	.62	-	-	-	-	-	-	-	-
3.	Responsiv.	**.62**	.56	.84	-	-	-	-	-	-	-
4.	Commitment	**.55**	.47	.63	.61	-	-	-	-	-	-
5.	Satisfaction	**.64**	.60	.85	.85	.7	-	-	-	-	-
6.	Identification	**.63**	.51	.55	.52	.49	.56	-	-	-	-
7.	Value Sim.	**.29**	.16	.34	.31	.24	.36	.25	-	-	-
8.	General Sim.	**.59**	.43	.55	.50	.35	.52	.40	.37	-	-
9.	Centrality	**.56**	.49	.38	.33	.39	.39	.62	.19	.38	-
10.	Close Invent.	**.35**	.38	.44	.32	.29	.33	.42	.09	.29	.34

Uniqueness of shared reality items. To investigate the uniqueness of shared reality, we conducted an Exploratory Factor Analysis (with oblique rotation) including items from *all* of the close relationship scales to test whether the shared reality items loaded onto a unique factor with few and weak cross-loadings. Given that we included different variables in each sample, we conducted these separately in each sample. In each analysis, we suppressed small coefficients with a value below 0.32 (as recommended by Yong & Pearce, 2013).

Across each study, the SR-G items consistently loaded onto a unique factor with few and weak cross-loadings, if any (See *Appendix*). In terms of the SR-G items, in Studies 2a and 2b, between 2-4 of the SR-G items cross-loaded onto other factors, but these cross-loadings were weaker than their loadings on the SR-G factor. In Studies 2c and 2d, none of the SR-G items cross-loaded onto any other factor. In terms of the SR-G factor, in Studies 2a, 2c, and 2d, between 1-3 items from other constructs cross-loaded onto this factor, though these cross-loadings were weaker than their loadings on the respective factors with the majority of their items. In Study 2b, no items from other constructs cross-loaded onto the SR-G factor. Thus, in each study, the SR-G items loaded onto a separate factor with very few and weak cross-loadings.

Notably, IOS consistently loaded onto a separate factor than the shared reality factor, consistent with the idea that the shared reality items measure a construct distinct from IOS. In Study 2b, it loaded onto the first factor, along with nearly all of the responsiveness, satisfaction, and intimacy items, ruling out the explanation that this result was purely due to methodological differences between IOS and SR-G (i.e., a graphical vs. verbal measure). Further, in Study 2d, all of the generalized perceived similarity items loaded onto their own unique factor, and none of them loaded onto the shared reality factor, differentiating these constructs as well.

It is worth noting that in each study, the majority of items from several of the existing constructs (particularly responsiveness, satisfaction, intimacy, and support) all consistently loaded onto the first factor. This helps address the alternative explanation that the shared reality items loaded onto their own factor simply because the items were presented as a single block, given that the items in these other measures were also presented in their own respective blocks but did not load onto unique factors.

Predicting IOS. In each study, shared reality strongly predicted IOS. It continued to significantly predict IOS in a series of regression analyses entering shared reality and each of the other individual predictors one at a time (See *Table 4* for each of these results). Additionally, to examine the added variance explained by shared reality, we conducted multiple linear regression analyses in each study to examine the relationship between shared reality and IOS adjusting for all of the other variables entered simultaneously. Shared reality continued to significantly predict IOS in each of these analyses (see *Appendix).*

Table 4. *Multiple Linear Regression Models (Studies 2a-2d).*

Parameter Estimates for Series of Multiple Linear Regression Models of Inclusion of the Other in the Self (IOS) as a Function of Generalized Shared Reality (SR-G) and Each Other Individual Predictor in Studies 2a-2d

	Study 2a		*Study 2b*		*Study 2c*		*Study 2d*	
Predictor	***β***	**95% CI**	***β***	**95% CI**	***β***	**95% CI**	***β***	**95% CI**
SR-G (alone)	.65***	[.52, .79]	.62***	[.48, .76]	.75***	[.64, .85]	.60***	[.48, .72]
Satisfaction	.38***	[.22, .54]	.50***	[.35, .65]	.47***	[.34, .60]	.37***	[.23, .52]
SR-G	.41***	[.25, .57]	.31***	[.16, .46]	.41***	[.28, .54]	.36***	[.22, .50]
Commitment	.40***	[.24, .56]	.27**	[.09, .44]	.46***	[.32, .59]	.20***	[.06, .34]
SR-G	.40***	[.24, .56]	.45***	[.28, .62]	.41***	[.27, .54]	.49***	[.35, .63]
Identification	.21*	[.01, .40]	.39***	[.23, .55]	.40***	[.27, .52]	.22***	[.07, .36]
SR-G	.50***	[.31, .70]	.37***	[.21, .54]	.48***	[.35, .60]	.46***	[.31, .61]
Responsiveness	.39***	[.22, .57]	.53***	[.37, .68]	.34***	[.21, .48]	.31***	[.17, .45]
SR-G	.38***	[.21, .56]	.27**	[.11, .43]	.51***	[.38, .64]	.41***	[.27, .55]
Intimacy			.51***	[.35, .67]	.37***	[.25, .49]	.39***	[.25, .53]
SR-G			.29***	[.13, .44]	.50***	[.38, .63]	.35***	[.21, .49]
Support			.33***	[.17, .49]	.34***	[.22, .46]		
SR-G			.42***	[.26, .58]	.53***	[.41, .66]		
Trust					.21**	[.08, .34]		
SR-G					.62***	[.49, .74]		
Value Similarity					.12**	[.01, .23]	.01	[-.11, .13]
SR-G					.70***	[.59, .81]	.60***	[.48, .72]
General Similarity							.11	[-.03, .26]
SR-G							.53***	[.39, .68]
Rel. Centrality							.23***	[.09, .37]
SR-G							.48***	[.34, .61]
Rel. Closeness Inv.							.20***	[.08, .32]
SR-G							.53***	[.41, .65]

Note. * indicates $p < .05$; ** indicates $p < .01$, *** indicates $p < .001$. β indicates the standardized regression coefficient. These present separate regression models (using SR-G and each other individual predictor) displayed as one table for ease of reading.

Predicting Merged Minds. To analyze the effect of SR-G on the likelihood of having experienced 'merged minds,' we conducted a logistic regression. The frequency of responses were as follows: "yes": 82, "no": 84, and "I have no idea what you mean by that": 20. We coded "yes" answers as 1 and both "no" and "I have no idea what you mean by that" as 0. The model-predicted log-odds of reporting having experienced "merged minds" were 1.33 ($SD = 0.24$, $z(184) = 5.54$, $p < .0001$). Transformed into a probability metric, this indicates that participants 1SD above the mean on shared reality had a 79.21% likelihood of having experienced 'merged minds,' compared to a 15.25% likelihood for those 1SD below the mean (see *Figure 5*). It continued to significantly predict merged minds in a series of logistic regressions entering shared reality and each of the other individual predictors one at a time (See *Table 5* for each of these results). None of the other predictors, *importantly including IOS*, approached significance in these models. Additionally, to examine the added variance explained by SR-G, we conducted a multiple logistic regression to examine the relation between shared reality and having experienced 'merged minds' adjusting for all other close relationship variables. Compared to the other variables, shared reality emerged as the strongest predictor, and each other predictor had a coefficient with either a negative value or a value of zero (See *Appendix*).

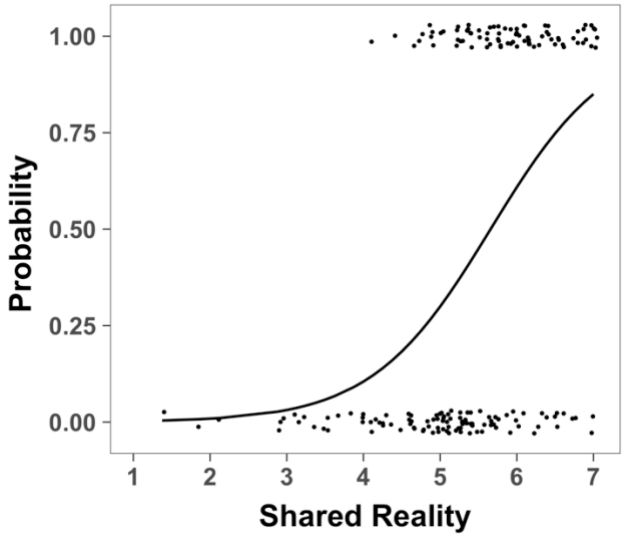

Figure 5. Shared Reality and the Experience of 'Merged Minds' (Study 2d).

The probability of experiencing 'merged minds' as a function of generalized shared reality.

Table 5. *Logistic Regression Models (Study 2d).*

Likelihood of Experiencing 'Merged Minds' as a Function of Shared Reality (SR-G) and Each Other Individual Predictor (Study 2d)

Predictor	*β*	95% CI
Satisfaction	-0.05	[-0.54, 0.46]
SR-G	1.36***	[0.84, 1.96]
Commitment	-0.07	[-0.54, 0.42]
SR-G	1.36***	[0.89, 1.88]
Identification	-0.40	[-0.85, 0.07]
SR-G	1.62***	[1.05, 2.27]
Responsiveness	0.00	[-0.44, 0.46]
SR-G	1.33***	[0.82, 1.91]
Intimacy	-0.16	[-0.64, 0.33]
SR-G	1.43***	[0.90, 2.01]
General Similarity	0.00	[-0.42, 0.42]
SR-G	1.34***	[0.83, 1.91]
Value Similarity	-0.15	[-0.53, 0.22]
SR-G	1.31***	[0.86, 1.82]
Rel. Centrality	-0.29	[-0.72, 0.12]
SR-G	1.52***	[0.99, 2.13]
Rel. Closeness Inv.	0.00	[-0.36, 0.36]
SR-G	1.32***	[0.86, 1.83]

Note. * indicates $p < .05$; ** indicates $p < .01$, *** indicates $p < .001$. β indicates the log odds estimate. These present 11 different regression models (using SR-G and each other individual predictor) displayed as one table for ease of reading.

Discussion

Studies 2a-2d established structural, convergent, discriminant, and predictive validity of the generalized shared reality construct. The generalized shared reality items were internally consistent. The results of a CFA of the generalized shared reality items yielded support for the unidimensional nature of the generalized shared reality construct. They were significantly correlated with other conceptually-related close relationship variables. Further, across four

samples, the generalized shared reality items loaded onto a unique factor in an EFA with all items, suggesting that generalized shared reality is non-redundant with existing constructs. It should be noted that in Study 2a, the generalized shared reality items were phrased as "my partner and I," just like the items from other constructs, so this clustering cannot be explained by item phrasing. Notably, across all studies, IOS did not load onto the generalized shared reality factor, suggesting that the generalized shared reality items measure a construct distinct from IOS. This result cannot be explained by measurement differences (pictoral vs. word content), given that in one study IOS loaded onto a factor with other items that had word content. We also found that the general perceived similarity items loaded onto a separate factor from shared reality items in these exploratory factor analyses, suggesting that sharing inner states about the world in general is non-redundant with perceived similarity of personal characteristics.

Further, self-reported generalized shared reality emerged as a significant predictor of IOS over and above existing close relationship constructs. This pattern further demonstrates the uniqueness of the shared reality construct, and suggests that shared reality explains something new about self-other overlap beyond what other constructs can explain. Among these other constructs were perceived value similarity and generalized perceived similarity, further distinguishing generalized shared reality from these constructs.

Finally, in Study 2d, in a series of regression analyses with each of the other close relationship constructs (including IOS), shared reality was the only variable to predict the experience of having 'merged minds,' establishing a proof-of-concept. As can be seen in *Figure 5,* not all participants with a high shared reality had experienced 'merged minds', yet, a degree of shared reality was required in order to have experienced it. These results are consistent with the idea that the experience of 'merged minds' is not necessary to experience high shared reality, and

thus ‘merged minds’ and ‘shared reality’ are not equivalent concepts. However, it is the case that those with stronger experiences of shared reality are more likely to have the experience of ‘merged minds.’ This finding highlights the phenomenological novelty of shared reality as an experience that has not been previously studied in the field of close relationships.

However, one limitation of these studies is that they focused solely on a relational outcome of shared reality. In the next studies, we sought to explore an epistemic outcome of shared reality as well. Further, given the correlational nature of these studies, causal claims cannot be made about shared reality as a source of self-other overlap. We sought to address this issue in the next study.

Studies 3a & 3b

Introduction

In Study 3, in order to further our construct validation, we used linguistic analyses in order to investigate the relational and epistemic outcomes of a *moment* of low versus high generalized shared reality. To do so, we recruited participants currently involved in romantic relationships and randomly assigned them to write about a discussion in which they experienced either low or high generalized shared reality with their romantic partner. We theorized that the experience of low (*vs.* high) generalized shared reality would threaten participants' sense of generalized shared reality with their partner.

In terms of relational outcomes, we predicted that this generalized shared reality threat would lower self-other overlap. We turned to an implicit linguistic outcome measure instead of the IOS given that in response to relationship threats, the motivated maintenance of close relationship convictions can undermine the validity of self-report (Murray et al., 2015; Murray et al., 2010)—in other words, partners tend to report positively on their relationship (as a protective mechanism) even if it is implicitly threatened. We measured implicit self-other overlap using spontaneous first-person *plural* pronoun use, i.e. 'we-ness' (Agnew et al., 1998; Karan et al., 2018). We predicted that partners assigned to write about a discussion in which they experienced low (*vs.* high) generalized shared reality would use first person plural pronouns less frequently.

We also sought to explore the effects of generalized shared reality on epistemic outcomes, specifically certainty. We hypothesized that recalling an instance of low (*vs.* high) generalized shared reality would threaten the extent to which participants could turn to their partner as a source of certainty. Given our theorizing that shared reality in close relationships provides an important

source of certainty, we expected that threatening shared reality would elicit concerns with certainty. We measured such certainty concerns using a linguistic category of words that pertains to *trying to ascertain or establish the certainty of things* (Pennebaker et al., 2015) and has been used in previous research to examine certainty concerns (Chen, Rossignac-Milon, & Higgins, 2018). Thus, we predicted that participants assigned to write about a discussion of low (vs. high) generalized shared reality would demonstrate greater certainty concerns.

Importantly, we predicted that this effect would hold over and above emotional valence. Experiences high and low on generalized shared reality are likely to differ in their positivity, which could color self-other overlap and certainty. In order to rule this out as an alternative explanation, we measured emotional valence using LIWC and controlled for it in all analyses.

Methods

Participants

In Study 3a, participants were 157 Amazon Mechanical Turk workers who participated for a financial compensation of $1.10. A minimum of 135 participants would ensure 80% power to detect a small-to-medium effect size (d = .40). Participants were screened to have been in a romantic relationship for at least 1 year. Six were excluded because they failed an attention check (unfortunately only one attention check was included in this study). Our final sample consisted of 151 participants. Their mean age was 35.77 (SD = 10.5), 66% were female, and 93% were heterosexual. Their average relationship length was 9.62 years (SD = 8.09), and 73% were cohabiting and/or married.

In Study 3b, participants were 163 Amazon Mechanical Turk workers who participated for a financial compensation of $1.10. We aimed to run a similar number of subjects as in Study 3a. Participants were screened to have been in a romantic relationship for at least 1 year. Seventeen

were excluded because they failed at least 1 of 2 attention checks. Our final sample consisted of 146 participants. Their mean age was 36 (SD = 10.6), 64% were female, and 91% were heterosexual. Their average relationship length was 10 years (SD = 8.7), and 87% were cohabiting and/or married.

Procedure & Materials

Participants were randomly assigned to read one of the following two prompts: **[High/Low Generalized Shared Reality Condition; differences bolded for illustration only]**

*Please remember a time when you were discussing something with your partner and you **were/ weren't** thinking of things in the same way - your thoughts felt **in/ out of** sync, your perspectives **seemed/ didn't seem** to merge, and your conversation **felt/ didn't feel** very real.*

Please take the next minute or so to close your eyes and remember everything you can about the experience.

They were then asked to answer two open-ended questions in response to the prompt: "What were you discussing?" and "How did you feel during your conversation?"

Importantly, we included this second question because it is a stronger test of our hypotheses than the first. For example, in response to the question about discussion topic, participants could use fewer "we" pronouns in the low shared reality condition simply because they were explaining two separate perspectives rather than one. However, this alternative explanation would not be able to account for this effect in participants' responses to the question about their feelings.

In addition, in response to the question about discussion topic, participants could use more words relating to certainty concerns in the low vs. high condition simply because the topic of

discussion itself could be more relevant to certainty. However, this alternative explanation would not explain this effect in response to the question about feelings.

Thus, we were specifically interested in whether participants displayed lower self-other overlap and greater certainty concerns in response to the question: "How did you feel during your conversation?"

Linguistic content analysis of priming task responses. To test the implicit effects of the prompt, we conducted a content analysis of participants' responses to each question. We analyzed each participant's responses using a standard and widely-validated tool: Pennebaker et al.'s (2015) Linguistic Inquiry and Word Count (LIWC), a computerized text analysis program that computes the percentage of words in a text sample that fall into a given psychologically meaningful category. The underlying premise of LIWC is that the words people use tend to reflect their internal thoughts and mindsets (Tausczik & Pennebaker, 2010). To measure *self-other overlap*, we used the "we" category, which includes words such as "us" and "our." To measure *certainty concerns,* we used the "cognitive processes" category: examples of words from this dictionary that were used by participants in our sample included "confused," "doubt," "think," "if," "why," "understand," "question," "truth," "guess," "sure," "though," and "maybe."

Finally, in order to measure and rule out the *emotional valence* of the prompts as an alternative explanation, we computed the difference between the "positive emotion" category words used and the "negative emotion" category words used.

Results

We Pronouns. In Study 3a, when describing how they felt during the conversation, participants in the Low SR condition (M = 1.72, SD = 3.67) used a significantly lower percentage of We pronouns than those in the High SR condition (M = 3.82, SD = 5.22): β = -0.46, $t(149)$ = -

2.87, p = 0.005, 95% CI [-0.77, -0.14]. This result is illustrated in *Figure 6*. This effect remained significant when controlling for emotional valence: β = -0.5, t(148) = -2.78, p = 0.006, 95% CI [-0.85, -0.14]. We also found both of these effects in response to the conversation topic prompt (See *Appendix*).

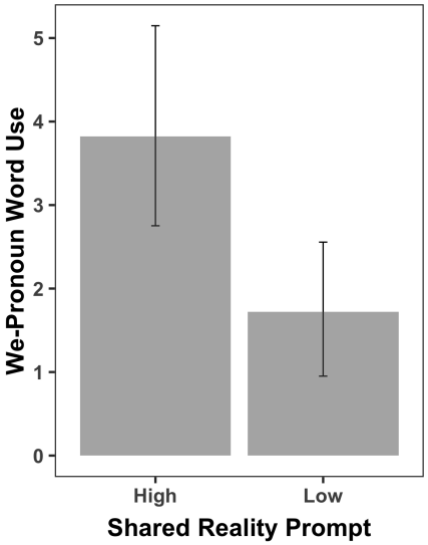

Figure 6. Shared reality and We-Pronoun Use (Study 3a).

Effect of shared reality prompt on Percentage of We-Pronoun Word Use in response to the 'feelings' question. Bootstrapped 95% Confidence Intervals displayed.

We replicated these effects in Study 3b. When describing how they felt during the conversation, participants in the Low SR condition (M = 1.22, SD = 2.68) used a significantly lower percentage of We pronouns than those in the High SR condition (M = 3.81, SD = 5.71): β = -0.56, t(149) = -3.54, p = 0.001, 95% CI [-0.88, -0.25].This effect remained significant when controlling for emotional valence: β = -0.58, t(148) = -3.29, p = 0.001, 95% CI [-0.93, -0.23]. We found both of these effects in response to the conversation topic prompt (See *Appendix*).

Certainty concerns. When reporting their feelings about the conversation, participants in the Low SR condition (M = 18.53, SD = 10.93) used a significantly greater percentage of words conveying certainty concerns than those in High SR condition (M = 14.12, SD = 9.49), $\beta = 0.42$, $t(149) = 2.64$, $p = 0.009$, 95% CI [0.11, 0.74]. This result is illustrated in *Figure 7*. This effect remained significant in a multiple regression analysis controlling for emotional valence: $\beta = 0.37$, $t(148) = 2.05$, $p = 0.043$, 95% CI [0.01, 0.72].

In contrast, participants did not differ in their use of certainty concern words in answer to the question about conversation topics ($\beta = 0.19$, $p = 0.249$). This finding is important, because it suggests that participants were not discussing topics that are inherently more relevant to certainty in the low (vs. high) condition.

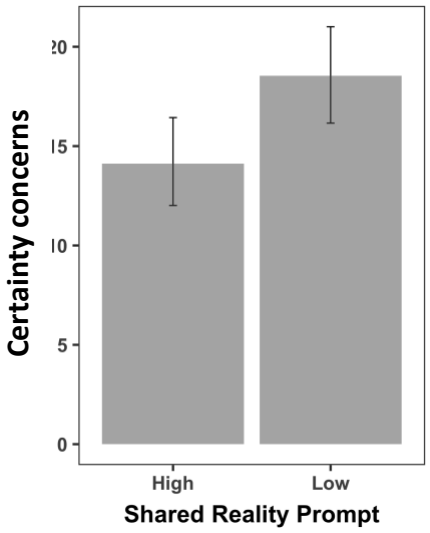

Figure 7. Shared reality and Certainty Concern Word Use (Study 3a).

Effect of shared reality prompt on Percentage of words related to certainty concerns in response to 'feelings' question in Study 3a. Bootstrapped 95% Confidence Intervals displayed.

We replicated these effects in Study 3b. When reporting their feelings about the conversation, participants in the Low SR condition (M = 19.09, SD = 16) used a significantly greater percentage of certainty concern words than those in High SR condition (M = 13.39, SD =

13.55), $\beta = 0.38$, $t(149) = 2.32$, $p = 0.022$, 95% CI [0.06, 0.7]. This effect remained significant in a multiple regression analysis controlling for emotional valence: $\beta = 0.65$, $t(148) = 3.74$, $p < 0.001$, 95% CI [0.31, 0.99]. In contrast, participants did not differ in their use of certainty concern words in answer to the question about conversation topics ($\beta = 0.2$, $p = 0.221$).

Discussion

Across Studies 3a and 3b, participants were randomly assigned to describing their feelings during a discussion in which they experienced low (*vs.* high) generalized shared reality. Overall, results indicate that threatening generalized shared reality by recalling a moment of low (*vs.* high) generalized shared reality decreased the implicit sense of 'we'-ness and elicited certainty concerns.

First, we found that participants in the low (*vs.* high) generalized shared reality condition used a significantly lower percentage of "we" pronouns. These results furthered the construct validity we sought to establish in this paper. Results suggest that threatening participants' sense of generalized shared reality momentarily lessened their sense of 'we'-ness, which should be expected given that we conceptualize shared reality as producing a sense of self-other overlap. This result remained significant when statistically adjusting for valence, thus ruling out valence as a potential alternative explanation. Further, a simple perspective-recounting explanation (i.e., that participants were explaining one perspective rather than two in the high vs. low condition) cannot explain this effect, given that this effect was found in answer to the question about how participants *felt* during the conversation and not just about what they were discussing.

Further, participants in the low (*vs.* high) generalized shared reality used a significantly greater percentage of word conveying concerns with certainty. This finding suggests that participants in the low versus high shared reality condition were concerned with the extent which they felt that they understood and made sense of things. Again, this finding remained significant

when controlling for valence. This effect was not found in response to the question about discussion topic, suggesting that the topic was not necessarily more relevant to certainty in the low (*vs.* high) condition.

Studies 3a and 3b have the benefit of external validity from the fact that participants were asked to recall experiences from their own lives. However, their internal validity could be limited in that the manipulations may have influenced other uncontrolled variables, such as the presence of conflict. Studies 4a and 4b were designed to address such potential confounds by using a minimal, well-established manipulation of shared reality. These studies also extended the previous studies by considering what happens with strangers rather than close partners. What are the relational and epistemic consequences of shared realities between strangers? We sought to address this additional question in the next study.

Studies 4a & 4b

Study 4a

Study 4a examines whether experimentally manipulating shared reality between strangers would influence relational and epistemic outcomes. We used a standard shared reality paradigm in which the goal of the participant is to create a shared understanding with a study partner about a third person. We hypothesized that participants who received false feedback that they had *successfully* (*vs*. unsuccessfully) created a shared reality with their partner would experience greater closeness and epistemic trust.

Methods

Participants

Past research informed our chosen sample size (Echterhoff et al., 2005; Echterhoff et al., 2008). Participants were 128 Columbia University affiliates who were compensated either with course credit or $5. Prior to data analysis, six participants were excluded for failing an attention check, and twenty-four were excluded for expressing suspicion about the veracity of their partner during a funneled suspicion check.[4] Our final sample consisted of 98 Columbia University affiliates (86 Female; Mean Age = 20.23 (*SD* = 2.85)).[5]

Procedure

Participants completed a standard shared reality communication paradigm (Higgins, 1992; Higgins & Rholes, 1978; see Echterhoff & Schmalbach, 2018 for a review). The study was

[4] Following previous research (Kopietz et al., 2010), participants were excluded who expressed suspicion of the existence of their partner in answer to the open-ended question, "Did you think your audience would read your message?"

[5] Due to the substantial number of participants failing attention and suspicion checks, in both studies, to ensure that we had not biased our sample by removing these participants, we re-ran all analyses with the full sample. The results did not change appreciably.

ostensibly a continuation of an interpersonal perception study that had begun the previous semester involving a group of thirty student volunteers. Participants were to communicate with an undergraduate in our lab (their study partner) who had worked with this group. Their task would be to read a passage about Michael, one of the thirty students in the group, and to describe Michael to their partner without mentioning Michael's name so that their partner would be able to identify him from the group of thirty students (similar to the game "Guess Who"). They were randomly assigned to hear that their partner liked (or disliked) Michael. They read an evaluatively ambiguous description of Michael (equally likeable or dislikeable, see Echterhoff et al., 2005 and *Appendix*) and then wrote a description of Michael to their partner. After a 5-minute anagram filler task (while their message was ostensibly being sent to their partner), participants were randomly assigned to receive feedback that their partner had *correctly or incorrectly* identified Michael, which implies that they either *successfully or unsuccessfully created a shared reality* about him (i.e., a similar impression). Participants then completed a funneled suspicion check and the questionnaires described below, and provided demographic information.

Measures

Closeness. (Ryan, 1982, α = .67) Participants rated their agreement (1–Not at all true, 7–Very true) with the *relatedness* subscale of the Intrinsic Motivation Inventory (e.g., "I feel close to my partner," and "It is likely that my partner and I could become friends if we interacted a lot.")

Epistemic Trust. (Echterhoff, et al., 2005) Participants rated their agreement (1—Not at all, 7—Very much) with one item: "Is my partner a person whose judgment about other people one can trust?"

Results

Closeness. Shared reality feedback had a significant effect on closeness such that participants in the shared reality success condition ($M = 3.85$, $SD = 0.79$, N = 46) felt significantly closer to their partners than did those in the shared reality failure condition ($M = 3.51$, $SD = 0.67$, N = 52); $t(96) = 2.25$, $p = 0.027$, $d = 0.464$. (See *Figure 8*)

Epistemic Trust. Participants in the shared reality success condition ($M = 3.89$, $SD = 1.22$) felt significantly greater epistemic trust towards their partners than did those in the shared reality failure condition ($M = 3.33$, $SD = 1.18$); $t(96) = 2.32$, $p = 0.022$, $d = 0.467$. (See *Figure 8*)

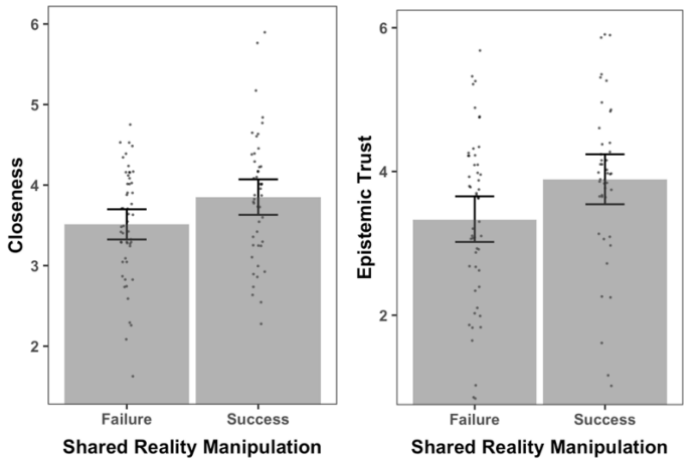

Figure 8. Effect of shared reality feedback on closeness and epistemic trust (Study 4a).

Discussion

Supporting our hypotheses, participants who received false feedback that they had successfully (*vs*. unsuccessfully) established shared realities with their partners felt significantly closer to them trusted them more as sources of truth. These results suggest even shared realities manipulated by the standard shared reality paradigm can foster epistemic trust and feelings of closeness between strangers.

One potential alternative explanation for this result is that the feedback may have colored participants' moods, leading them to see their partners in a more positive or negative light. Thus, we conducted another experimental study to rule out this alternative.

Study 4b

In Study 4b, we sought to replicate and extend the findings of Study 4a to examine the effect of shared reality on other relational variables; specifically, anticipated rapport (upon imagining an interaction with one's partner—which could play a considerable role in shaping how actual interactions play out (see Jones, 1986) and the desire to work with one's partner again.

Methods

Participants

We aimed for a sample size of 200 to permit exclusions while maintaining over 80% power to detect effect sizes comparable to those found in Study 4a. Participants were 201 Mechanical Turk workers who were compensated with $1.50. Prior to data analysis, forty participants were excluded because of failure on at least one of two attention checks. Additionally, thirteen participants were excluded for using "Michael" in their message (and thus failing to follow directions), and three were excluded for having plagiarized part of their message from the original description. Finally, sixteen participants were excluded for expressing suspicion about the existence of their partners.[6] Our final sample consisted of 139 participants (99 Female; Mean Age = 33.47 (*SD* = 10.34)).

Procedure

The procedure was identical to that of Study 2 but modified for an M-Turk context (See *Appendix*).

[6] Participants were excluded who expressed suspicion about the existence of their partner in answer to the question: "Would you be interested in working with your partner again in the future? Why or why not?"

Measures

Interpersonal Closeness. (Ryan, 1982; $\alpha = 0.78$) We used the same items as in Study 4a.

Epistemic Trust. (Echterhoff et al., 2008; $\alpha = 0.94$) In this study, we used the full-length version of the epistemic trust scale. Participants rated their agreement (1—not at all; 7—very much) with four items (e.g., "Is my partner a person whose judgment about other people one can trust?").

Anticipation of Rapport, Short Form (adapted by Miles, Griffiths, Richardson, & Macrae, 2010; originally in Bernieri, Davis, Rosenthal, & Knee, 1994). Participants were asked to imagine interacting with their partners and to indicate the extent to which each word described their expectations (0—not at all; 8—extremely). Five items assessed positive rapport (*comfortable, friendly, harmonious, positive, satisfying*; $\alpha = 0.85$) and five negative rapport (*awkward, boring, cold, dull, slow*; $\alpha = 0.80$). We subtracted negative from positive rapport to calculate overall rapport (zero represented a neutral interaction).

Desire to work together again. Participants were asked an open-ended question: "Would you be interested in working with your partner again in the future? Why or why not?" Their responses were coded by two raters (ICC(1) = 0.90) on a scale of 1-5 (1—expressed a strong desire not to work with him/her again; 5—expressed a strong desire to work with him/her again), whose ratings were averaged.

Mood (Control variable). Participants responded to the question: "How do you feel right now?" (as in Echterhoff et al., 2005) on a slider scale from 1-5 using a frowning-smiling emoticon (1 – item).

Results

See *Figure 9* for each of these results.

Closeness. Participants in the shared reality success condition (M = 4.15, SD = 0.88, N = 72) felt significantly closer to their partners than those in the shared reality failure condition (M = 3.43, SD = 0.94 , N = 67), $t(137) = 4.67$, $p < .001$, $d = 0.791$.

Epistemic Trust. Participants in the shared reality success condition (M = 4.53, SD = 1.11) felt significantly greater epistemic trust towards their partners than did those in the failure condition (M = 3.25, SD = 0.95), $t(137) = 7.32$, $p < .001$, $d = 1.239$.

Anticipated Rapport. Participants in the shared reality success condition (M = 1.04, SD = 1.96) anticipated significantly better rapport towards their partners than did those in the failure condition (M = -0.26, SD = 2.24), $t(137) = 3.63$, $p < .001$, $d = 0.618$.

Desire to Work Together Again. Participants in the shared reality success condition (M = 3.88, SD = 1.00) expressed a significantly greater desire to work with their partners again compared to those in the failure condition (M = 2.57, SD = 1.28), $t(137) = 6.63$, $p < .001$, d = 1.141.

Controlling for Mood. The effect of shared reality feedback on mood was non-significant ($t(137) = 0.35$, $p = .72$), and unsurprisingly, the aforementioned effects did not change substantially when adjusting for mood.

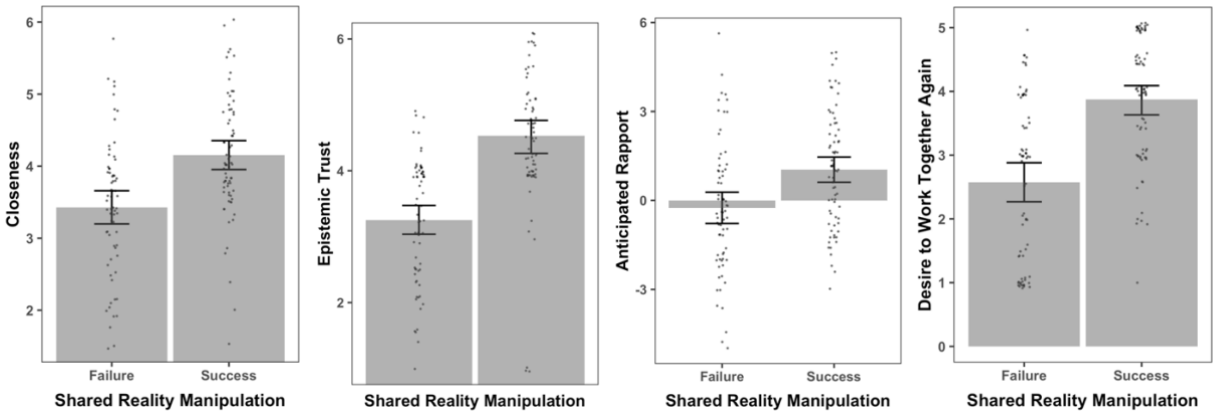

Figure 9. Effect of shared reality feedback on all outcomes (Study 4b).

Effect of shared reality feedback on closeness, epistemic trust, anticipated rapport, and the desire to work together again in Study 4b. Rapport was calculated by subtracting negative from positive rapport, so the zero point represents neutral rapport.

Discussion

This study replicated the two findings from Study 4a, such that participants who received false feedback that they had successfully (*vs*. unsuccessfully) established a shared reality with their partners felt significantly closer to them and trusted them further as sources of truth. This study also extended these findings to other dependent measures: the desire to work with one's partner again and anticipated rapport when imagining interacting with one's partner. Finally, the study found that shared reality feedback did *not* influence participants' mood, ruling out the possibility that success (*vs.* failure) feedback put participants in a positive (*vs.* negative) mood and colored their ratings of their partners.

In Study 5, we sought to extend our study of shared reality even further by investigating the effects of shared reality between strangers in a *real-time, dyadic online chat setting*. This context allowed us to investigate the observable interaction behaviors giving rise to the experience of generalized shared reality. Importantly, Study 5 was also designed to examine the effects of shared reality on other outcomes of interest; notably, the experience of 'clicking', *actual* rapport, and the experiences of joint sense-making and certainty. Finally, Study 5 examined whether generalized shared reality predicted each of these outcome variables over and above the effects of target-specific agreement.

Study 5

Introduction

In this study, we sought to examine the relational and epistemic effects of generalized shared reality between stranger dyads chatting online. Participants chatted in real-time about several ambiguous images. In terms of relational outcomes, we hypothesized that generalized shared reality would predict interpersonal closeness and the desire to chat together again (replicating Study 4), *actual* rapport, and 'clicking.' In terms of epistemic outcomes, we predicted that generalized shared reality would be associated with epistemic trust (replicating Study 4), joint sense-making, perceived attitude convergence, and certainty. Importantly, we also sought to demonstrate that generalized shared reality predicted each of these outcomes beyond the perceived similarity of non-inner states and other interpersonal constructs, notably perceived partner responsiveness and IOS—two other interpersonal constructs that have been shown to manifest between strangers. Finally, we also sought to demonstrate that generalized shared reality led to relational and epistemic outcomes over and above target-specific shared reality, in order to confirm that the effects of generalized shared reality are not accounted for by sharing inner states about a particular target.

This study also aimed to examine the behavioral antecedents of generalized shared reality. Given that we theorize that generalized shared reality arises out of actual interactions between individuals, we sought to explore the kinds of interaction behaviors that facilitate the creation of generalized shared reality in naturalistic conversations. We specifically propose that certain observable interaction behaviors, like finishing each other's sentences, saying things at the same time, or vocalizing agreement and shared feelings, will give rise to the subjective experience of

generalized shared reality. In turn, this generalized shared reality will enhance relational and epistemic outcomes. In other words, we predict that the experience of generalized shared reality will mediate the relationship between these interaction behaviors and these relational and epistemic outcomes—i.e., the interaction behaviors will produce relational and epistemic outcomes to the extent to which they are subjectively experienced as a generalized shared reality by the participants.

Methods

Participants

We recruited a sample of 281 workers using Mechanical Turk, who participated for financial compensation. Of those, 251 matched with a chat partner and completed the chatting task. Of these, twelve were excluded for failing at least one of two attention checks (their partner's data was retained). We then screened the chats based on the descriptions of robot identification in recent Mechanical Turk studies and excluded any participants who appeared to have either been a robot (one) or chatted with a robot (three). Finally, three participants were excluded for expressing the erroneous belief that their partner was either a member of the research team or a robot during a suspicion check (i.e., in answer to the open-ended question, "Did you enjoy working with your partner?"). All exclusions were conducted prior to data analysis. Our final sample consisted of 232 participants (133 Female; 38.2 (*SD* = 11.46)). This sample granted us 80% power to detect an effect as small as $f^2 = .034$ (with .02 defined as a small effect size, and .15 as medium (Cohen, 1988).

Procedure

Participants were paired on arrival to an online chat page. They were instructed to work together to answer several questions about two images, with the goal of figuring out what was

really going on in the pictures together. The images were selected from a set of ambiguous social interactions used in previous shared reality research (Kopietz, et al., 2010, Study 2; originally from the Multi-Motive Grid [Sokolowski, Schmalt, Langens, & Puca, 2000]). The server prompted participants with a new discussion question every two minutes for a total of six questions (12 minutes). Questions were crafted to generate discussion (for example, "Why do you think the man in the hooded sweatshirt and the man with the pipe are talking?" See *Appendix* for images and questions). After chatting, participants answered a series of interpersonal questionnaires (presented in a randomized order) and then a series of questionnaires assessing their opinions about the images (also randomized), and finally, asked to provide demographic information and to complete a funneled suspicion check.

Measures

Generalized Shared Reality

Generalized Shared Reality Behavioral Coding. We developed a four-item coding scheme based on our conceptualization of the phenomenology of generalized shared reality. Three independent raters, blind to hypotheses and any self-report measures, coded how frequently each dyad displayed the following behaviors during their chat on a scale of 1 (Not at all) to 7 (Very frequently): *Vocalizing thought similarity* (e.g., "That's exactly what I was thinking!"), *Vocalizing agreements or shared feelings* (e.g., "I totally agree", "So true"), *Saying things nearly at the same time* (e.g., near-synchronous exclamations, single-word utterances, or phrases with the same meaning), and *Finishing each other's sentences* (e.g., riffing off of each other's ideas, seemingly sharing the same stream of consciousness). As inter-rater reliability was sufficiently high (0.81), items were averaged to create a composite score.

Generalized Shared Reality (SR-G) (α = .95). We modified the shared reality items used in Study 2 to be specific to the interaction context. Participants rated their agreement (1–Strongly Disagree, 7–Strongly Agree) with eight items like, "During our discussion, we shared the same thoughts and feelings about things," "…we thought of things at the exact same time," "…we saw the world in the same way."

Relational Outcomes

Clicking. Participants rated their agreement (1–Strongly Disagree, 7–Strongly Agree) with one item: "I felt like my partner and I 'clicked'."

Closeness (α = .90). We used the same closeness measure as in Study 4.

Rapport. We used the same items as in Study 4b, but asked in reference to the actual interaction: positive (α = 0.93), negative (α = 0.91). In all analyses, rapport was re-scaled to a 1-7 scale in order to match the other variables when centered (given the multi-level analyses).

Desire to chat together again. Participants rated their agreement (1–Strongly Disagree, 7–Strongly Agree) with one item: "I would be interested in continuing our discussion."

Epistemic Outcomes

Epistemic Trust. (α = .96). Participants rated their agreement (1–Not at all, 7–Very much) with 3 items modified from Echterhoff and colleagues (2008) to measure the extent to which they trusted their partners as sources of truth about the pictures: "One can rely on my partner's impression of the pictures," "My partner is a credible source of information with regard to the pictures," "My partner is a person whose judgment about the pictures one can trust."

Joint Sense-making (α = .96). Participants rated their agreement (1–Strongly Disagree, 7–Strongly Agree) with five items we wrote to measure the extent to which participants felt that they had made sense of the pictures with their chat partners: "I feel that through our conversation, my

chat partner and I made sense of the pictures together," "…merged our impressions of the pictures," "…worked together to understand the pictures," "…interpreted what was going on in the pictures together," "…influenced each other's perceptions of the pictures."

Perceived attitude convergence. Participants answered two questions (1–Very Different, 7–Very Similar): *perceived initial agreement*: "In general, how similar were your *initial* perceptions of the pictures (before you really talked about them)?" and *perceived final agreement*: "In general, how similar were your perceptions of the pictures *after* you had talked about them?" In all analyses measuring perceived attitude convergence, we used perceived final agreement as the dependent variable and adjusted for initial agreement.

Certainty (α = *.94*). Participants rated their agreement (1–Strongly Disagree, 7–Strongly Agree) with three items we wrote to measure certainty: "I am certain of what I think is really going on in the pictures," "I am sure of my impression of the scenes in the pictures," "I have a pretty good idea of what I think is happening in the pictures."

Control Variables

Inclusion of Other in the Self. We used the same measure as in the previous studies (Aron et al., 1992).

Perceived Partner Responsiveness (α = .93). Participants rated their agreement (1–Strongly Disagree, 7–Strongly Agree) with three items (Maisel & Gable, 2009): "My chat partner understood me," "…valued my abilities and opinions," "…really listened to me.," assessing the degree to which participants perceived that their partners had understood, valued, and cared for core aspects of themselves.

Perceived General Similarity (α = .98). We modified the five perceived similarity items used in Study 2 to be specific to the interaction context (e.g., "My partner and I seemed to be very similar people.")

Perceived target-specific agreement. We used the *perceived final agreement* item mentioned above as a control variable in other analyses in order to explore the effects of generalized shared reality on these outcomes over and above target-specific agreement.[7]

Results

All analyses were conducted as multi-level models with participants nested within dyads, using the *lme4* package in R (Bates, Mächler, Bolker, & Walker, 2014). Generalized shared reality significantly predicted all relational outcomes of interest: closeness, clicking, anticipated rapport, and the desire to chat together again. In addition, generalized shared reality predicted each of these relational outcomes even when adjusted for perceived similarity, perceived partner responsiveness, IOS, and target-specific agreement. (See *Table 6; Figure 10*)

[7] We also included a target-specific shared reality measure currently being developed by Schmalbach, Rossignac-Milon, Keller, Echterhoff, & Higgins (2019), with items like "My partner and I are on the same wavelength with regards to the images." The results do not change appreciably when using these items as a covariate instead of the perceived final agreement item. Given that this measure is yet unpublished, we report the results using the single perceived final agreement item.

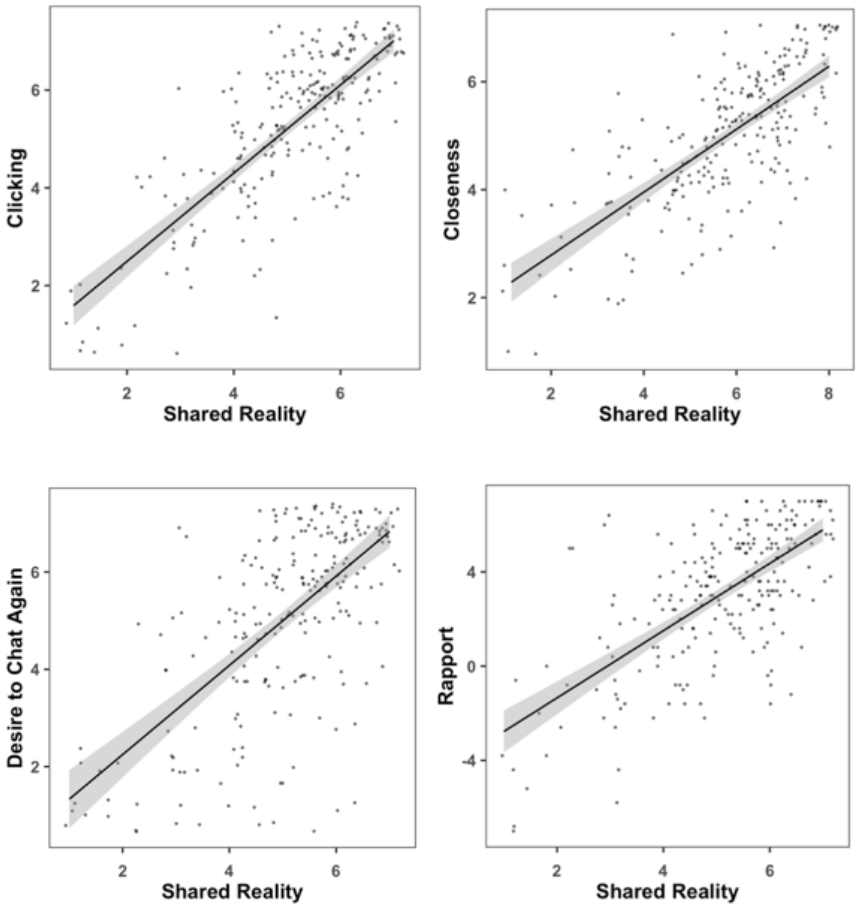

Figure 10. Relational Outcomes (Study 5).

Effect of shared reality on closeness, clicking, rapport, and the desire to chat again.

Generalized shared reality also significantly predicted all of the epistemic outcomes of interest: trust, certainty,[8] joint sense making, and perceived attitude convergence, even after adjusting for perceived similarity, perceived partner responsiveness, IOS, and target-specific

[8] Because the word "certain" appears in one of the shared reality items and could be a source of content contamination, we ran the same analysis without that item. Shared reality continued to significantly predict epistemic certainty, even when adjusting for the other predictors.

agreement. (See *Table 6; Figure 11*)

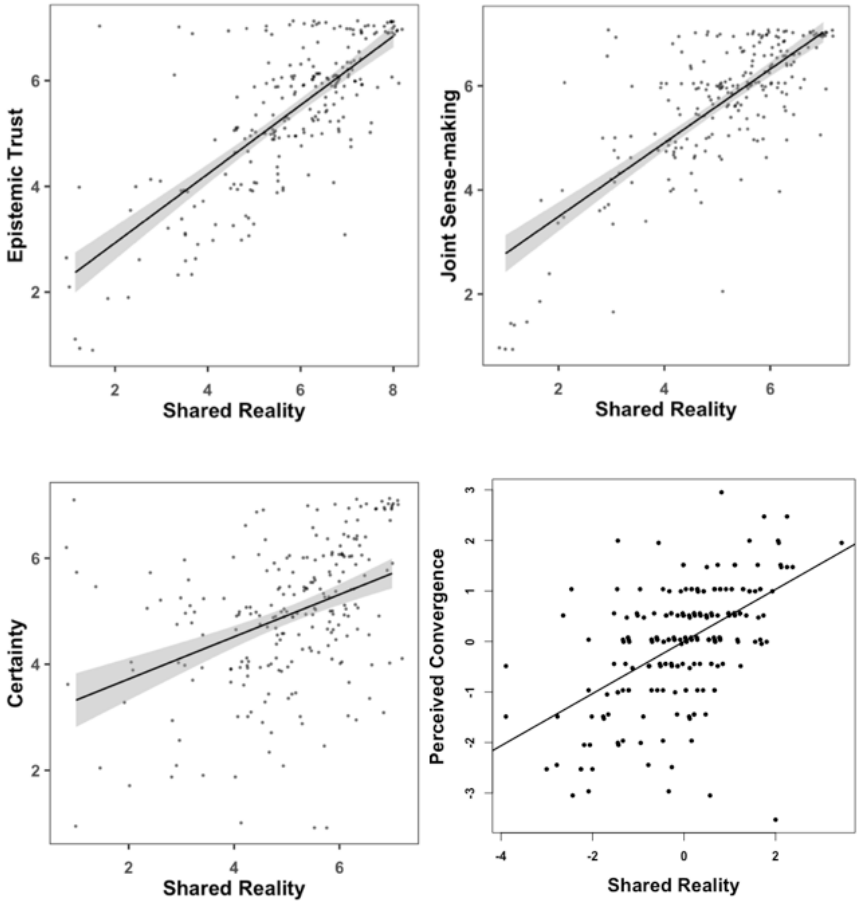

Figure 11. Epistemic Outcomes (Study 5).

Effect of shared reality on epistemic trust, joint sense-making, certainty, and perceived convergence in Study 5.

Table 6. *Regression Analyses (Study 5).*

Series of regression analyses examining relational and epistemic outcomes. All analyses were conducted as multilevel models with participants nested within-dyad. One column displays the effect of shared reality on each of the outcome variables, and the other displays the same effect adjusting for each competing predictor. The coefficients are centered. Each cell contains the centered (unstandardized) coefficient and 95% Confidence Intervals. * indicates p < .05; ** indicates p < .01, *** indicates p < .001.

Outcomes	SR-G (single predictor)	Adjusting for perceived similarity	Adjusting for PPR	Adjusting for IOS	Adjusting for target-specific agreement
Relational					
Closeness	.68 [.60, .77]***	.23 [.11, .36]***	.37 [.25, .49]***	.50 [.41, .60]***	.54 [.43, .64]***
Rapport	.67 [.57, .76]***	.28 [.12, .43]***	.32 [.18, .45]***	.53 [.41, .64]***	.56 [.44, .68]***
Desire to chat again	.92 [.78, 1.06]***	.23 [.01, .44]*	.65 [.44, .86]***	.71 [.54, .88]***	.81 [.63, 1.00]***
Clicking	.89 [.80, .99]***	.38 [.24, .52]***	.60 [.46, .73]***	.69 [.58, .80]***	.80 [.68, .93]***
Epistemic					
Epistemic Trust	.73 [.64, .82]***	.43 [.29, .58]***	.44 [.32, .57]***	.62 [.52, .73]***	.48 [.38, .59]***
Joint Sense-making	.67 [.59, .76]***	.68 [.53, .82]***	.31 [.21, .42]***	.61 [.51, .72]***	.48 [.38, .58]***
Certainty	.43 [.31, .55]***	.32 [.11, .52]**	.36 [.18, .54]***	.35 [.21, .50]***	.30 [.15, .46]***
Perceived attitude convergence	.65 [.56, .75]***	.42 [.26, .58]***	.22 [.08, .35]**	.48 [.36, .60]***	-

Next, we ran a series of mediation models to investigate the role of generalized shared reality in mediating the relationship between shared reality behaviors and each outcome variable.[9] We found that the observable interaction behaviors displayed by the dyads significantly predicted the extent to which they experienced generalized shared reality. Further, self-reported generalized shared reality mediated the relationship between the observed shared reality behaviors and the relational outcomes (See *Table 7, Figure 12* for 'clicking'). These results suggest that the shared reality behaviors fostered a sense of closeness, clicking, rapport, and the desire to chat again to the extent to which they were experienced by the participants as a generalized shared reality, which in turn predicted these outcome variables. We found the same pattern for the epistemic outcomes (See *Table 7, Figure 13* for certainty). Though the total effect of shared reality behaviors on certainty was non-significant, the indirect effect was significant.

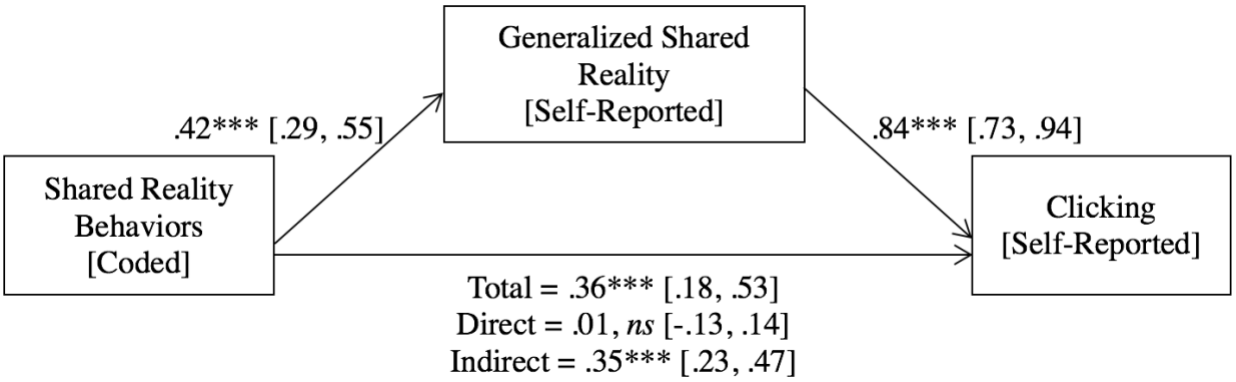

Figure 12. Mediation model: Clicking (Study 5).

Self-reported generalized shared reality mediated the relationship between shared reality behaviors (coded by observers) and self-reported clicking.

[9] In order to run multi-level mediation models, we were required to drop incomplete dyads. Ten participants were dropped whose partner chatted with them but did not complete the rest of the study (i.e., dropped out part-way through), eleven were dropped whose partner failed the attention check, and three were dropped whose partner was suspicious that they were either a member of the research team or a robot. Our final n for these analyses is 208.

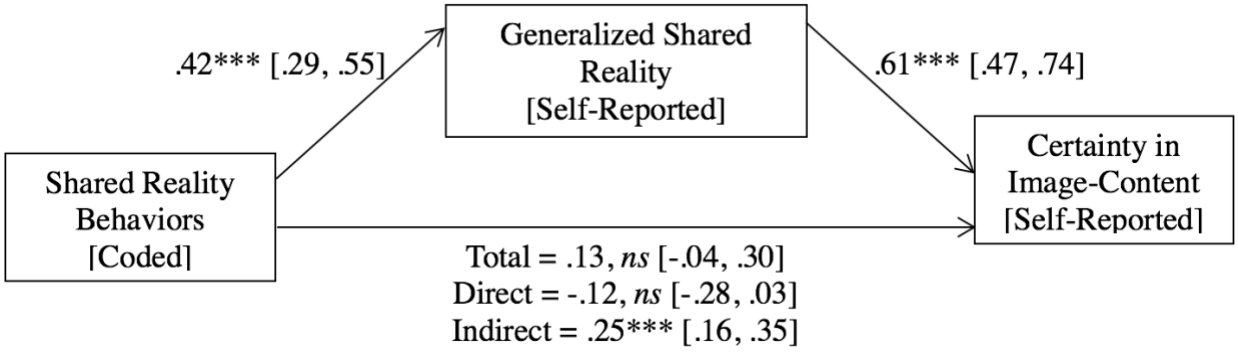

Figure 13. Mediation model: Certainty (Study 5).

Self-reported generalized shared reality mediated the relationship between shared reality behaviors (coded by observers) and self-reported certainty in image content.

Table 7. *Mediation Model Results (Study 5).*

These mediation models were conducted using multi-level models in order to nest within-dyad. For each path, the centered beta coefficient is displayed, along with 95% CI and the *p*-value.

Outcomes	a path	b path	c path	c' path	ab path
Relational					
Clicking	.42 [.29, .55], < .001	.84 [.73, .94], < .001	.36 [.18, .53], < .001	.01 [-.13, .14], .933	.35 [.23, .47], < .001
Closeness	.42 [.29, .55], < .001	.63 [.53, .73], < .001	.31 [.17, .45], < .001	.05 [-.07, .17], .422	.26 [.17, .35], < .001
Rapport	.42 [.29, .55], < .001	.61 [.50, .72], < .001	.19 [.04, .34], .011	-.06 [-.20, .08], .386	.25 [.16, .35], < .001
Desire to chat again	.42 [.29, .55], < .001	.94 [.77, 1.11], < .001	.23 [.02, .45], .033	-.16 [-.35, .03], .098	.39 [.25, .53], < .001
Epistemic					
Epistemic trust	.42 [.29, .55], < .001	.65 [.55, .75], < .001	.36 [.22, .49], < .001	.08 [-.03, .20], .155	.27 [.18, .37], < .001
Joint sense-making	.42 [.29, .55], < .001	.55 [.47, .64], < .001	.50 [.37, .62], < .001	.27 [.16, .38], < .001	.23 [.15, .31], < .001
Certainty	.42 [.29, .55], < .001	.61 [.47, .74], < .001	.13 [-.04, .30], .128	-.12 [-.28, .03], .121	.25 [.16, .35], < .001
Convergence	.42 [.29, .55], < .001	.49 [.38, .60], < .001	.20 [.13, .28], < .001	.16 [.03, .29], .013	.37 [.23, .50], < .001

Discussion

In this study, we found that self-reported generalized shared reality between strangers predicted important relational and epistemic outcomes. In terms of relational outcomes, generalized shared reality predicted interpersonal closeness, the experience of clicking, rapport, and the desire to chat together again. This finding suggests that generalized shared reality plays an important role in initial interpersonal connection. In terms of epistemic outcomes, we found that generalized shared reality predicted several outcomes: epistemic trust, joint sense-making, perceived attitude convergence, and certainty about what was really happening in the images. Importantly, each of these effects remained significant beyond the perceived similarity of partners, perceived partner responsiveness, and IOS.

Further, these results remained significant after controlling for target-specific shared reality. This finding highlights that generalized shared reality influences each of these outcomes beyond simply sharing inner states about a particular target. They point to the additive power of generalized shared reality in shaping these outcomes over and above simply agreeing about one specific topic of conversation. In other words, the effect of generalized shared reality on these relational and epistemic outcomes was not accounted for by target-specific shared reality. This finding is especially remarkable considering the fact that some of the epistemic outcomes were target-specific—for example, the certainty items asked about how certain participants felt that they knew what was really going on *in the images*. The experience of generalized shared reality—about the world at large—predicted this certainty about the images over and above the extent to which partners shared inner states about the images themselves. These results speak to the power of generalized shared reality in influencing the experience of certainty about objects in the world.

This study provides important evidence that shared reality, albeit a subjective experience, is to some extent grounded in a kernel of truth—in the actual interaction behaviors displayed by the dyad during the chat. These interaction behaviors are noticeable to outside observers and actually correspond to the extent to which the participants subjectively experience a sense of generalized shared reality. This study also identified these behaviors as a source of generalized shared reality. Because of the temporal order of this study, in which participants do not have a generalized shared reality before they interact, participants are creating the generalized shared reality through their behaviors during the interaction. This finding suggests that generalized shared reality arises out of the experience of verbal agreement, finishing each other's sentences, saying things at the same time, etc.

Generalized shared reality involves the experience of feeling that in conversation, the joint perceptions established with one's partner attain a degree of felt objectivity. This point raises an important conceptual distinction between generalized shared reality and the experience of certainty. The former involves the perception of the dyad as a unit (how much do *we* feel more certain through *our* discussion) vs. the individual as the unit (how much do *I* privately feel more certain after our discussion). There is also an important temporal difference between generalized shared reality, which involves joint certainty experienced during the discussion, and the private experience of certainty experienced afterwards. Despite these conceptual distinctions, in order to guard against content-contamination, we removed the generalized shared reality item that included the word "certainty" from all analyses examining certainty as an outcome and found that all effects remained significant. This suggests that generalized shared reality influences private certainty even when removing the element of joint certainty from the construct.

Finally, generalized shared reality mediated the relationship between these observable behaviors and the outcomes of interest. Thus, the extent to which the dyad displayed these shared reality behaviors predicted the extent to which they felt like they clicked, felt close to each other, experienced rapport, and wanted to chat together again, insofar as they were subjectively experienced as a generalized shared reality by the participants. The same pattern held for epistemic outcomes: the shared reality behaviors contributed to certainty, joint sense-making, epistemic trust, and convergence to the extent to which they gave rise to this subjective experience of generalized shared reality. These results further exemplify the importance of the subjective experience of generalized shared reality for conversations to result in these relational and epistemic outcomes, and also confirm the non-redundancy of generalized shared reality with these outcomes.

General Discussion

Introduction

Across five studies using varied methodology (daily diary, experimental, and dyadic interactions) and using varied measurements (self-report, linguistic markers, behavioral coding), we identified the occurrence of generalized shared reality in interpersonal relationships both between close and newly-acquainted partners. Further, we examined both the relational and epistemic outcomes of generalized shared reality, and identified behavioral antecedents. In Studies 1a & 1b, generalized shared reality predicted self-other overlap between close partners at the daily level, in situ. In Studies 2a-2d, we found that this effect persisted when accounting for conceptually-related close relationship constructs. As a proof-of-concept, we also found that generalized shared reality uniquely corresponded to the likelihood of having experienced 'merged minds,' a moment of particularly pronounced generalized shared reality. In Studies 3a and 3b, we investigated the effects of recalling a moment of low (vs. high) generalized shared reality with a romantic partner and found that threatening shared reality decreased implicit self-other overlap and increased certainty concerns. Next, in Studies 4a & 4b, we found that manipulating shared reality between strangers using an established paradigm increased closeness, anticipated rapport, the desire to work together again, and epistemic trust. Finally, in Study 5, we used an ecologically-rich, naturalistic online chat paradigm in which stranger dyads jointly made sense of ambiguous images. We found that self-reported generalized shared reality predicted key relational outcomes (interpersonal closeness and the experience of 'clicking') and key epistemic outcomes (epistemic trust, joint sense-making, perceived attitude convergence, and certainty) over and above other constructs, including target-specific shared reality. Further, generalized shared reality mediated

the relationship between observable interaction behaviors of shared reality and these outcome variables. These results make several contributions to both the shared reality literature and the interpersonal relationships literature.

Contribution to Shared Reality Literature

The present research extends previous research on shared reality. Previous work has primarily examined shared reality about particular targets. In contrast, we demonstrated the existence of generalized shared reality—the subjective experience of having inner states in common with a partner about the world in general. We found that generalized shared reality occurs both between close partners and between strangers interacting for the first time. Our work explored the phenomenological experience of generalized shared reality—what it actually *feels like* to develop a shared reality with another in everyday conversations, and we developed a set of self-report items to measure this construct. Moreover, we found that these items predicted relational and epistemic outcomes over and above target-specific shared reality, suggesting that the effects of generalized shared reality on these outcomes cannot be accounted for by sharing inner states about a particular target. This new construct represents a significant extension of previous work on shared reality.

Further, previous work in the field of shared reality has predominantly examined how relational and epistemic motives facilitate the creation of shared reality. In other words, shared reality has been examined as an outcome of these motives. Though shared reality theory proposes that shared reality enhances closeness and certainty, whether or not shared reality contributes to these variables has never, to our knowledge, actually been examined in the shared reality literature. This work demonstrates that shared reality itself is a *source* of these relational and epistemic

outcomes. Further, we found that shared reality predicts these outcomes over and above other interpersonal constructs.

We also examined behavioral antecedents of generalized shared reality and found that generalized shared reality mediated the relationship between these behaviors and epistemic and relational outcomes. This work is the first to our knowledge to demonstrate that shared reality, though a subjective experience, is rooted in actual interaction behaviors that are noticeable to outside observers.

Finally, we tested these effects both in the laboratory and in real-world, ecologically-rich settings involving both daily diary responses and actual conversational settings. The majority of shared reality research has been conducted in contexts with minimal-to-no interaction between participants. For these reasons, this work significantly extends the shared reality research as it investigates shared reality closer to the way in which it manifests in nature.

It should also be noted that this work makes a contribution to the literature on epistemic motives more broadly. Little work has examined how one's sense of certainty can fluctuate depending on one's experiences with a close partner. We demonstrated that simply recalling an instance of low shared reality with one's partner can elicit compensatory efforts to restore one's sense of certainty by trying to make sense of things. Similarly, this work demonstrated that partners felt more certain about a set of images they examined to the extent to which they created a sense of generalized shared reality. This work highlights the fundamentally interpersonal nature of the satisfaction of epistemic motives.

Contribution to Close Relationships Literature

This phenomenological conceptualization of generalized interpersonal shared reality also makes a significant contribution to the close relationships literature. The experience of finishing

each other's sentences and exchanging knowing glances is an important component of lay descriptions of close relationships, yet no research has conducted theory-driven investigations to directly tap into the nature of this feeling. In the current work, we ground this experience in social-psychological theory and demonstrate its critical role in interpersonal relationships, at the daily level, as a chronic feature of close relationships, and as an experience between strangers.

Further, we identify generalized shared reality as an important source of self-other overlap. The downstream consequences of self-other overlap have received considerable empirical attention, but less is known about variables contributing to self-other overlap in the first place. This paper contributes to the understanding of how self-other overlap develops. This work also points to the critical epistemic function of interpersonal relationships by examining the role of close partners as a source of certainty about the world. Despite the numerous approaches that have posited close relationships as an important source of certainty and meaning (Andersen & Przybylinski, 2018; Heine, et al., 2006; Mikulincer, et al., 2003; Murray et al,. 2018; Swann, 2012), little work has examined the effects of close partners on the experience of certainty.

We also found that shared reality plays an important role in initial interactions between strangers. Colloquial descriptions of relationship initiation often invoke the idea of 'clicking,' yet little work in social psychology has explored the factors contributing to this experience. This work identifies generalized shared reality as an important source of this 'clicking' experience. This work also suggests that generalized shared reality can play a role in fostering the initial sense of closeness and rapport, over and above the effects of perceived partner responsiveness and inclusion of the other in the self. The results also demonstrated that shared reality predicted the desire to work together again and the desire to chat together again. This outcome suggests that shared reality may spark new relationships and collaborations.

This paper also beings to answer the call for close relationships research to examine relational activity focus (Clark et al., 2008), in which partners are focused on the world outside of their relationship. To date, interpersonal relationships research has focused primarily on constructs that involve partners focusing on themselves, each other, or the relationship. This work is some of the first to examine how partners jointly make sense of the world around them.

Shared Reality as a Distinct Relationship Construct

This work also identified generalized shared reality as empirically distinct from other existing relationship constructs. Across several studies, in exploratory factor analyses including items from several conceptually-related constructs, the generalized shared reality items we developed consistently loaded onto a separate factor, suggesting that these items tap into a novel construct. Further, several studies found evidence that generalized shared reality predicted particular variables over and above other measures, notably perceived partner responsiveness, general similarity, and perceived value similarity, suggesting that it is not the same as these constructs. It also predicted variables between strangers, such as 'clicking,' over and above perceived similarity, perceived partner responsiveness, and IOS.

Further, generalized shared reality was the only variable to predict the experience of having 'merged minds' in a regression analyses with each other close relationship variable including IOS, suggesting that shared reality is uniquely tied to the experience of merged minds—an important phenomenological experience in close relationships that other relationship constructs have hitherto been silent on. This result serves as a proof-of-concept, given our conceptualization of merged minds as a particularly pronounced moment of shared reality.

Generalized shared reality also predicted various epistemic outcomes—joint sense-making, epistemic trust, perceived convergence, and certainty—over and above other interpersonal

relationships constructs. This confirms our hypothesis that shared reality would uniquely predict epistemic outcomes and situates shared reality as the construct most proximal to epistemic motives in interpersonal relationship constructs.

Limitations & Future Directions

Though we established generalized shared reality as an important construct in interpersonal relationships, the scope of processes we accounted for in these studies was limited. Future work can leverage this new conceptualization to explore the role of shared reality in a variety of interpersonal phenomena. For example, generalized shared reality, to the extent to which it involves the development of merged memory systems (Rossignac-Milon & Higgins, 2018), may play an important role in memory processes such as collective remembering (Harris, Barnier, Sutton, & Keil, 2014). The cognitive synchrony element of generalized shared reality may translate into other forms of synchrony, such as behavioral mimicry (Chartrand & Lakin, 2013), and physiological synchrony (Timmons, Margolin, & Saxbe, 2015), given the multi-modal nature of synchrony (Cacioppo et al., 2014, Shamay-Tsoory, Saporta, Marton-Alper, & Gvirts, 2019; Wheatley, Kang, Parkinson, & Looser, 2012). The experience of something being valid and true may be amplified when partners with a high sense of shared reality are physically together: events may feel more real, sensations clearer, and interpretations more certain (for an example of such experience amplification, see Boothby, Clark, & Bargh, 2014; Boothby, Smith, Clark, & Bargh, 2017).

Future work could extend these findings to examine whether shared reality during initial interactions promotes romantic relationship initiation and attraction. Perhaps shared reality has the potential to spark new romantic relationships and provoke the experience of falling in love.

The effect of shared reality on the desire to work together again could have important implications in organizational contexts. Future work could examine how the creation of shared reality influences subsequent task cooperation.

The potentially bidirectional nature of generalized shared reality and these outcome variables deserves to be further investigated. This paper focused on the effect of shared reality on relational and epistemic variables. We theorize that interpersonal closeness and certainty may both in turn enhance the experience of generalized shared reality. Future research could test the potentially mutual influence of these variables. Perhaps shared reality and these outcomes are linked through a helical process—spiraling over time.

Another important feature of generalized shared reality is that it is relationship-specific—it pertains to shared inner states with a *particular* partner. Shared realities are an inherent part of any communication exchange, in which partners draw on a shared understanding of the words they use and of the prescriptive conversational norms they follow (Higgins, 2019). However, not all conversations involve shared inner states that are unique to the dyad—i.e., that are shared with a particular interaction partner, but not with other people in general. We predict that these more idiosyncratic target-specific shared realities with another person are more likely to contribute to the sense of generalized shared reality with this person than are target-specific shared realities that are shared with most people. This idea is supported by research demonstrating that sharing rare (vs. common) attitudes has a more powerful effect on interpersonal bonding (Alves, 2018).

The dyadic nature of shared reality raises an interesting question about the accuracy of partners' perceived shared reality (Gagné & Lydon, 2004). Shared reality is inherently a subjective perception, and can thus be unfounded: one partner may feel that s/he has a shared reality with the other, when in fact the other partner does not reciprocate that perception. What are the relational

repercussions of erroneously assuming the existence of a generalized shared reality? Can partners reap benefits from an erroneous generalized shared reality so long as their misperception is maintained (e.g., Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002)? What are the interpersonal consequences of realizing that one's generalized shared reality was wrongly assumed? Whether it was initially perceived erroneously or whether it simply faded over time, the disintegration of generalized shared reality may play a key role in relationship dissolution and contribute significantly to subsequent suffering (Rossignac-Milon & Higgins, 2018). Breakups, estrangements, and divorce are not just problems of outcome interdependence: partners lose more than just valued outcomes from each other's contributions to the relationship. They lose their shared reality, and the loss of this critical source of truth and certainty can make them feel that the world no longer makes sense or feels real.

Conclusion

In sum, this research suggests that shared reality has important relational and epistemic consequences, influencing both how people connect with each other and make sense of the world. In terms of relational outcomes, results suggest that shared reality is a critical source of (1) self-other overlap between close partners, and (2) clicking, closeness, rapport, and the desire to work together again between newly acquainted partners. In terms of epistemic outcomes, results suggest that shared reality fosters the experience of epistemic trust, joint sense-making, perceived attitude convergence, and certainty. Thus, shared reality may produce both a relational and epistemic "glue", binding partners not only to each other, but also to their shared way of understanding reality.

References

Acitelli, L. K., Douvan, E., & Veroff, J. (1993). Perceptions of conflict in the first year of marriage: How important are similarity and understanding? *Journal of Social and Personal Relationships*, *10*(1), 5–19.

Acitelli, L. K. (1988). When spouses talk to each other about their relationship. *Journal of Social and Personal Relationships*, *5*(2), 185-199.

Acitelli, L. K., Kenny, D. A., & Weiner, D. (2001). The importance of similarity and understanding of partners' marital ideals to relationship satisfaction. *Personal Relationships, 8*(2), 167–185.

Agnew, C. R., Van Lange, P. A. M., Rusbult, C. E., & Langston, C. A. (1998). Cognitive interdependence: Commitment and the mental representation of close relationships. *Journal of Personality and Social Psychology*, *74*(4), 939–954.

Alberts, J. K., Yoshimura, C. G., Rabby, M., & Loschiavo, R. (2005). Mapping the topography of couples' daily conversation. *Journal of Social and Personal Relationships*, *22*(3), 299-322.

Alves, H. (2018). Sharing rare attitudes attracts. *Personality and Social Psychology Bulletin, 44*(8), 1270-1283.

Andersen, S. M. & Przybylinski, E. (2018). Shared Reality in Interpersonal Relationships. *Current Opinion in Psychology, 23*, 42-46.

Anderson, C., Keltner, D., & John, O. P. (2003). Emotional convergence between people over time. *Journal of Personality and Social Psychology, 84*(5), 1054–1068.

Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of Other in the Self Scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, *63*(4), 596–612.

Aron, A., Aron, E. N., Tudor, M., & Nelson, G. (1991). Close relationships as including other in the self. *Journal of Personality and Social Psychology, 60*(2), 241-253.

Aron, A. P., Mashek, D. J., & Aron, E. N. (2004). Closeness as including other in the self. In D. J. Mashek & A. P. Aron (Eds.), *Handbook of closeness and intimacy* (pp. 27–41). Mahwah, NJ: Lawrence Erlbaum Associates.

Aron, A. P., Mashek, D. J., McLaughlin-Volpe, T., Wright., S., Lewandowski, G., Aron, E. N. (2005). Including Close Others in the Cognitive Structure of the Self. In M. W. Baldwin (Eds.), *Interpersonal Cognition* (pp. 206-232). New York, NY: Guilford Press.

Auger, E., Hurley, S., & Lydon, J. E. (2016). Compensatory relationship enhancement: An identity motivated response to relationship threat. *Social Psychological and Personality Science*, *7*(3), 223–231.

Baskett, G. D., Byrne, D., & Hodges, L. (1971). Behavioral Indicators of Interpersonal Attraction 1. *Journal of Applied Social Psychology*, *1*(2), 137-149.

Bates, D., Mächler, M., Bolker, B., & Walker, S. (2014). Fitting linear mixed-effects models using lme4. *arXiv preprint arXiv:1406.5823*.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497.

Baxter, L. A., & Pittman, G. (2001). Communicatively remembering turning points of relational development in heterosexual romantic relationships. *Communication Reports, 14*(1), 1–17.

Bell, R. A., Buerkel-Rothfuss, N. L., & Gore, K. E. (1987). "Did you bring the yarmulke for the cabbage patch kid?" The idiomatic communication of young lovers. *Human Communication Research*, *14*(1), 47–67

Berger, P., & Kellner, H. (1964). Marriage and the construction of reality. *Diogenes, 12(*46), 1–24.

Berscheid, E. (1995). Help wanted: A grand theorist of interpersonal relationships, sociologist or anthropologist preferred. *Journal of Social and Personal Relationships,* 12(4), 529-533.

Berscheid, E., Snyder, M., & Omoto, A. M. (1989). The Relationship Closeness Inventory: Assessing the closeness of interpersonal relationships. *Journal of Personality and Social Psychology, 57*(5), 792–807.

Berscheid, E., Snyder, M., & Omoto, A. M. (2004). Measuring closeness: The relationship closeness inventory (RCI) revisited. In D. J. Mashek & A. Aron (Eds.), *Handbook of closeness and intimacy* (pp. 81–101). Mahwah, NJ: Lawrence Erlbaum Associates.

Bernieri, F. J., Davis, J. M., Rosenthal, R., & Knee, C. R. (1994). Interactional synchrony and rapport: Measuring synchrony in displays devoid of sound and facial affect. *Personality and Social Psychology Bulletin*, *20*(3), 303-311.

Birnbaum, G. E., Reis, H. T., Mizrahi, M., Kanat-Maymon, Y., Sass, O., & Granovski-Milner, C. (2016). Intimately connected: The importance of partner responsiveness for experiencing sexual desire. *Journal of Personality and Social Psychology*, *111*(4), 530.

Bolger, N., Davis, A., & Rafaeli, E. (2003). Diary methods: Capturing life as it is lived. *Annual Review of Psychology, 54*, 579–616.

Bolger, N., & Laurenceau, J. P. (2013). Intensive longitudinal methods. *New York, NY: Guilford*.

Boothby, E. J., Clark, M. S., & Bargh, J. A. (2014). Shared experiences are amplified. *Psychological Science*, *25*(12), 2209–2216.

Boothby, E. J., Smith, L. K., Clark, M. S., & Bargh, J. A. (2017). The world looks better together: How close others enhance our visual experiences. *Personal Relationships*, *24*(3), 694–714

Buehlman, K. T., Gottman, J. M., & Katz, L. F. (1992). How a couple views their past predicts their future: Predicting divorce from an oral history interview. *Journal of Family Psychology*, *5*(3-4), 295.

Butler, E. A. (2015). Interpersonal affect dynamics: It takes two (and time) to tango. *Emotion Review*, *7*(4), 336-341.

Byrne, D. (1961). Interpersonal attraction and attitude similarity. *The Journal of Abnormal and Social Psychology*, *62*(3), 713–715.

Cacioppo, S., Zhou, H., Monteleone, G., Majka, E. A., Quinn, K. A., Ball, A. B., . . . & Cacioppo, J. T. (2014). You are in sync with me: Neural correlates of interpersonal synchrony with a partner. *Neuroscience, 277*, 842–858.

Chartrand, T. L., & Lakin, J. L. (2013). The antecedents and consequences of human behavioral mimicry. *Annual Review of Psychology*, *64*, 285–308.

Chen, C. Y., Rossignac-Milon, M., & Higgins, E. T. (2018). Feeling distressed from making decisions: Assessors' need to be right. Journal of Personality and Social Psychology, 115(4), 743-761. http://dx.doi.org.ezproxy.cul.columbia.edu/10.1037/pspp0000181

Clark, M. S., Graham, S. M., Williams, E., & Lemay, E. P. (2008). Understanding relational focus of attention may help us understand relational phenomena. In J.P. Forgas & J. Fitness (Eds.), *Social relationships: Cognitive, affective and motivational processes (*pp.131-146). New York: Psychology Press.

Coates, J. (1997). The construction of a collaborative floor in women's friendly talk. *Typological studies in language, 34*, 55-90.

Cohen J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.

Davis, J. L., & Rusbult, C. E. (2001). Attitude alignment in close relationships. *Journal of personality and social psychology*, *81*(1), 65.

De La Ronde, C., & Swann, W. B., Jr. (1998). Partner verification: Restoring shattered images of our intimates. *Journal of Personality and Social Psychology, 75*(2), 374–382.

DeVellis, R. F. (2016). *Scale development: Theory and applications* (Vol. 26). London, United Kingdom: Sage Publications.

Duck, S. (1994). Steady as (s)he goes: Relational maintenance as a shared meaning system. In D. J. Canary & L. Stafford (Eds.), *Communication and relational maintenance* (pp. 45-60). San Diego, CA, US: Academic Press.

Duck, S., Rutt, D. J., Hoy, M., & Strejc, H. H. (1991). Some evident truths about conversations in everyday relationships all communications are not created equal. *Human communication research, 18*(2), 228-267.

Echterhoff, G., & Higgins, E. T. (2017). Creating shared reality in interpersonal and intergroup communication: The role of epistemic processes and their interplay. *European Review of Social Psychology, 28*(1), 175–226.

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*(3), 257–276.

Echterhoff, G., Higgins, E. T., Kopietz, R., & Groll, S. (2008). How communication goals determine when audience tuning biases memory. *Journal of Experimental Psychology: General*, *137*(1), 3–21.

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*(5), 496–521.

Echterhoff, G., Kopietz, R., & Higgins, E. T. (2013). Adjusting shared reality: Communicators' memory changes as their connection with their audience changes. *Social Cognition, 31*(2), 162–186.

Echterhoff, G., Kopietz, R., & Higgins, E. T. (2017). Shared reality in intergroup communication: Increasing the epistemic authority of an out-group audience. *Journal of Experimental Psychology: General, 146,* 806-825.

Echterhoff, G., & Schmalbach, B. (2018). How shared reality is created in interpersonal communication. *Current opinion in psychology, 23*, 57-61.

Fehr, B. (1996). *Friendship processes* (Vol. 12). Sage.

Fischer, A. H., & Manstead, A. S. (2008). Social functions of emotion. *Handbook of emotions*, *3*, 456-468.

Fitzsimons, G. M., Finkel, E. J., & vanDellen, M. R. (2015). Transactive goal dynamics. *Psychological Review*, *122*(4), 648–673.

Fletcher, G. J., Simpson, J. A., & Thomas, G. (2000). The measurement of perceived relationship quality components: A confirmatory factor analytic approach. *Personality and Social Psychology Bulletin*, *26*(3), 340–354.

Fox, J. (2016) *Applied Regression Analysis and Generalized Linear Models*, Third Edition. Thousand Oaks, CA: Sage Publications.

Gagné, F. M., & Lydon, J. E. (2004). Bias and accuracy in close relationships: An integrative review. *Personality and Social Psychology Review, 8*(4), 322–338.

Garrod, S., & Pickering, M. J. (2009). Joint action, interactive alignment, and dialog. *Topics in Cognitive Science*, *1*(2), 292-304.

Gere, J., & MacDonald, G. (2010). An update of the empirical case for the Need to Belong. *Journal of Individual Psychology, 66,* 93-115.

Girme, Y. U., Overall, N. C., & Faingataa, S. (2014). "Date nights" take two: The maintenance function of shared relationship activities. *Personal Relationships*, *21*(1), 125–149.

Gonzaga, G. C., Campos, B., & Bradbury, T. (2007). Similarity, convergence, and relationship satisfaction in dating and married couples. *Journal of personality and social psychology*, *93*(1), 34.

Gottman, J. M., & Levenson, R. W. (1999). What predicts change in marital interaction over time? A study of alternative models. *Family Process*, *38*(2), 143-158.

Hardin, C. D., & Conley, T. D. (2001). A relational approach to cognition: Shared experience and relationship affirmation in social cognition. In G. B. Moskowitz (Ed.), *Cognitive social psychology: The Princeton Symposium on the Legacy and Future of Social Cognition* (pp. 3–17). Mahwah, NJ: Lawrence Erlbaum Associates.

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: Vol. 3. The interpersonal context* (pp. 28–84). New York, NY: Guilford Press.

Harris, C. B., Barnier, A. J., Sutton, J., & Keil, P. G. (2014). Couples as socially distributed cognitive systems: Remembering in everyday social and material contexts. *Memory Studies, 7*(3), 285–297.

Heine, S. J., Proulx, T., & Vohs, K. D. (2006). The meaning maintenance model: On the coherence of social motivations. *Personality and Social Psychology Review*, *10*(2), 88-110.

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. (2012). *Beyond pleasure and pain: How motivation works*. New York, NY: Oxford University Press.

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*(4), 363-378.

Hobbs, J. R. (1990). Topic drift. *Conversational organization and its development*, *38*, 3-22.

Ickes, W., Tooke, W., Stinson, L., Baker, V. L., & Bissonnette, V. (1988). Naturalistic social cognition: Intersubjectivity in same-sex dyads. *Journal of Nonverbal Behavior*, *12*(1), 58-82.

Ireland, M. E., Slatcher, R. B., Eastwick, P. W., Scissors, L. E., Finkel, E. J., & Pennebaker, J. W. (2011). Language style matching predicts relationship initiation and stability. *Psychological Science*, *22*(1), 39–44

Jones, E. E. (1986). Interpreting interpersonal behavior: The effects of expectancies. *Science*, *234*(4772), 41-46.

Kaiser, H. F. (1958). The varimax criterion for analytic rotation in factor analysis. *Psychometrika, 23,* 187-200.

Karan, A., Rosenthal, R., & Robbins, M. L. (2018). Meta-analytic evidence that we-talk predicts relationship and personal functioning in romantic couples. *Journal of Social and Personal Relationships*, Advance Online Publication.

Kenny, D. A. (1995). Relationship science in the 21st century. *Journal of Social and Personal Relationships, 12,* 597–600.

Kopietz, R., Hellmann, J. H., Higgins, E. T., & Echterhoff, G. (2010). Shared-reality effects on memory: Communicating to fulfill epistemic needs. *Social Cognition*, *28*(3), 353–378.

Koudenburg, N. (2018). Regulating Shared Reality with Micro-Dynamics in the Form of Conversation. *Current Opinion in Psychology, 23*, 34-37.

Kruglanski, A. W. (1990). Lay epistemic theory in social-cognitive psychology. *Psychological Inquiry*, *1*(3), 181-197.

Kurtz, L. E., & Algoe, S. B. (2017). When sharing a laugh means sharing more: Testing the role of shared laughter on short-term interpersonal consequences. *Journal of Nonverbal Behavior*, *41*(1), 45–65.

Kuznetsova, A., Brockhoff, P. B., & Christensen, R. H. B. (2017). lmerTest Package: Tests in Linear Mixed Effects Models. *Journal of Statistical Software, 82*(13).

Launay, J., & Dunbar, R. I. (2015). Playing with strangers: which shared traits attract us most to new people?. *PloS one*, *10*(6), e0129688.

Leikas, S., Ilmarinen, V. J., Verkasalo, M., Vartiainen, H. L., & Lönnqvist, J. E. (2018). Relationship satisfaction and similarity of personality traits, personal values, and attitudes. *Personality and Individual Differences, 123,* 191-198.

Lerner, G. H. (1991). On the syntax of sentences-in-progress. *Language in society*, *20*(3), 441-458.

Lerner, G. H. (1996). On the" semi-permeable" character of grammatical units in conversation: Conditional entry into the turn space of another speaker. *Studies in interactional sociolinguistics*, *13*, 238-276.

Lewis, C. S. (1960). *The four loves*. New York : Harcourt, Brace.

Linardatos, L., & Lydon, J. E. (2011). Relationship-specific identification and spontaneous relationship maintenance processes. *Journal of Personality and Social Psychology*, *101*(4), 737–753.

Lydon, J. E., Jamieson, D. W., & Zanna, M. P. (1988). Interpersonal similarity and the social and intellectual dimensions of first impressions. *Social Cognition*, *6*(4), 269-286.

Maisel, N. C., & Gable, S. L. (2009). The paradox of received social support: The importance of responsiveness. *Psychological Science*, *20*(8), 928-932.

Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of golden rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling, 11*(3), 320–341.

Mashek, D. J., Aron, A., & Boncimino, M. (2003). Confusions of self with close others. *Personality and Social Psychology Bulletin, 29*(3), 382–392.

Matsunaga, M. (2010). How to factor-analyze your data right: Do's, don'ts, and how-to's. *International Journal of Psychological Research, 3*(1), 97–110.

McFarland, D. A., Jurafsky, D., & Rawlings, C. (2013). Making the connection: social bonding in courtship situations. *American journal of sociology*, *118*(6), 1596-1649.

Mikulincer, M., Florian, V., & Hirschberger, G. (2003). The existential function of close relationships: Introducing death into the science of love. *Personality and Social Psychology Review, 7*(1), 20–40.

Miles, L. K., Griffiths, J. L., Richardson, M. J., & Macrae, C. N. (2010). Too late to coordinate: Contextual influences on behavioral synchrony. *European Journal of Social Psychology*, *40*(1), 52-60.

Montoya, R. M., & Horton, R. S. (2013). A meta-analytic investigation of the processes underlying the similarity-attraction effect. *Journal of Social and Personal Relationships*, *30*(1), 64-94.

Montoya, R. M., Horton, R. S., & Kirchner, J. (2008). Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships*, *25*(6), 889–922.

Murray, S. L., Holmes, J. G., Bellavia, G., Griffin, D. W., & Dolderman, D. (2002). Kindred spirits? The benefits of egocentrism in close relationships. *Journal of Personality and Social Psychology*, *82*(4), 563–581

Murray, S. L., Holmes, J. G., & Griffin, D. W. (1996). The self-fulfilling nature of positive illusions in romantic relationships: Love is not blind, but prescient. *Journal of Personality and Social Psychology*, *71*(6), 1155–1180.

Murray, S. L., Holmes, J. G., Griffin, D. W., & Derrick, J. L. (2015). The equilibrium model of relationship maintenance. Journal of Personality and Social Psychology, 108, 93–113. doi:10.1037/

Murray, S. L., Holmes, J. G., & Pinkus, R. T. (2010). A smart unconscious? Procedural origins of automatic partner attitudes in marriage. *Journal of Experimental Social Psychology*, *46*(4), 650-656.

Murray, S. L., Lamarche, V., & Seery, M. D. (2018). Romantic relationships as shared reality defense. *Current Opinion in Psychology, 23*, 34-37.

Murray, S. L., Lamarche, V. M., Gomillion, S., Seery, M. D., & Kondrak, C. (2017). In defense of commitment: The curative power of violated expectations. *Journal of Personality and Social Psychology, 113(*5), 697-729.

Pennebaker, J. W., Booth, R. J., Boyd, R. L., & Francis, M. E. (2015). Linguistic Inquiry and Word Count: LIWC2015. Austin, TX: Penne- baker Conglomerates (www.LIWC.net).

Pierce, G. R., Sarason, I. G., & Sarason, B. R. (1991). General and relationship-based perceptions of social support: Are two constructs better than one? *Journal of Personality and Social Psychology*, *61*(6), 1028–1039.

Pierucci, S., Echterhoff, G., Marchal, C., & Klein, O. (2014). Creating shared reality about ambiguous sexual harassment: The role of stimulus ambiguity in audience-tuning effects on memory. *Journal of Applied Research in Memory and Cognition*, *3*(4), 300–306.

Pinel, E. C. (2018). Existential isolation and I-sharing: Interpersonal and intergroup implications. *Current Opinion in Psychology, 23*, 84-87.

Pinel, E. C., Long, A. E., Landau, M. J., Alexander, K., & Pyszczynski, T. (2006). Seeing I to I: a pathway to interpersonal connectedness. *Journal of personality and social psychology*, *90*(2), 243.

Przybylinski, E., & Andersen, S. M. (2015). Systems of meaning and transference: Implicit significant-other activation evokes shared reality. *Journal of Personality and Social Psychology*, *109*(4), 636–661.

Reis, H. T. (2003). *A self-report measure of perceived partner responsiveness*. Unpublished data, University of Rochester.

Reis, H. T., Clark, M. S., & Holmes, J. G. (2004). Perceived partner responsiveness as an organizing construct in the study of intimacy and closeness. In D. J. Mashek & A. P. Aron (Eds.), *Handbook of closeness and intimacy* (pp. 201–225). Mahwah, NJ: Lawrence Erlbaum Associates.

Reis, H. T., & Gable, S. L. (2015). Responsiveness. *Current Opinion in Psychology*, *1*, 67-71.

Reis, H. T., Lemay Jr, E. P., & Finkenauer, C. (2017). Toward understanding understanding: The importance of feeling understood in relationships. *Social and Personality Psychology Compass*, *11*(3), e12308.

Rempel, J. K., Holmes, J. G., & Zanna, M. P. (1985). Trust in close relationships. *Journal of Personality and Social Psychology, 49*(1), 95–112.

Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software, 48*(2), 1–36.

Rossignac-Milon, M., Higgins, E. T. (2018). Epistemic Companions: The Development of Shared Reality in Close Relationships. *Current Opinion in Psychology, 23*, 66-71.

Rusbult, C. E., Kumashiro, M., Kubacka, K. E., & Finkel, E. J. (2009). "The part of me that you bring out": Ideal similarity and the Michelangelo phenomenon. *Journal of Personality and Social Psychology, 96(1)*, 61–82.

Rusbult, C. E., Martz, J. M., & Agnew, C. R. (1998). The Investment Model Scale: Measuring commitment level, satisfaction level, quality of alternatives, and investment size. *Personal Relationships*, *5*(4), 357–387.

Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. Journal of personality and social psychology, 43(3), 450.

Schmalbach,B., Rossignac-Milon, M., Keller, V., Echterhoff, G., & Higgins, E. T. (2019). Spreading shared reality: How experiencing common inner states transfers to a new shared reality. Manuscript in preparation.

Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. *Advances in Experimental Social Psychology, 25*, 1–65.

Schwartz, S. H. (2003). *European Social Survey Core Questionnaire Development – Chapter 7: A Proposal for Measuring Value Orientations across Nations*. London: European Social Survey, City University London.

Shamay-Tsoory, S. G., Saporta, N., Marton-Alper, I. Z., & Gvirts, H. Z. (2019). Herding Brains: A Core Neural Mechanism for Social Alignment. *Trends in cognitive sciences*. Online-first publication.

Shrout, P. E., & Yip-Bannicq, M. (2017). Inferences about competing measures based on patterns of binary significance tests are questionable. *Psychological methods, 22*(1), 84.

Simpson, J. A. (2007). Psychological foundations of trust. *Current directions in psychological science*, *16*(5), 264-268.

Sinclair, S., Lowery, B. S., Hardin, C. D., & Colangelo, A. (2005). Social tuning of automatic racial attitudes: the role of affiliative motivation. *Journal of personality and social psychology*, *89*(4), 583.

Skorinko, J. L., & Sinclair, S. (2018). Shared reality through social tuning of implicit prejudice. *Current opinion in psychology, 23,* 109-112.

Smith, P. (2016). *M train*. New York, NY: Alfred A. Knopf.

Sokolowski, K., Schmalt, H. D., Langens, T. A., & Puca, R. M. (2000). Assessing achievement, affiliation, and power motives all at once: The Multi-Motive Grid (MMG). *Journal of Personality Assessment*, *74*(1), 126-145.

Stephen, T. D. (1984). A Symbolic Exchange Framework for the Development of Intimate Relationships. *Human Relations, 37*(5), 393-408.

Swann, W.B., & Brooks, M. (2012). Why Threats Trigger Compensatory Reactions: The Need for Coherence and Quest for Self-Verification. *Social Cognition*, *30*, 758-777.

Tausczik, Y.R., Pennebaker, J.W. (2010). The psychological meaning of words: LIWC and computerized text analysis methods. *Journal of Language and Social Psychology 29*(1), 24-54.

Timmons, A. C., Margolin, G., & Saxbe, D. E. (2015). Physiological linkage in couples and its implications for individual and interpersonal functioning: A literature review. *Journal of Family Psychology*, *29*(5), 720–731.

Treger, S., Sprecher, S., & Erber, R. (2013). Laughing and liking: Exploring the interpersonal effects of humor use in initial social interactions. *European Journal of Social Psychology*, *43*(6), 532–543.

Walsh, C. M., & Neff, L. A. (2018). We're better when we blend: The benefits of couple identity fusion. *Self and Identity*, *17*(5), 587-603.

Werner, C., & Parmelee, P. (1979). Similarity of activity preferences among friends: Those who play together stay together. *Social Psychology Quarterly*, 62-66.

Wheatley, T., Kang, O., Parkinson, C., & Looser, C. E. (2012). From mind perception to mental connection: Synchrony as a mechanism for social understanding. *Social and Personality Psychology Compass*, *6*(8), 589-606.

Woods, W. C., Lakey, B., & Sain, T. (2016). The role of ordinary conversation and shared activity in the main effect between perceived support and affect. *European Journal of Social Psychology*, *46*(3), 356–368.

Worthington, R. L., & Whittaker, T. A. (2006). Scale development research: A content analysis and recommendations for best practices. *The Counseling Psychologist*, *34*(6), 806-838.

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology*, *9*(2), 79–94.

Appendix

Study 2a-2d—Demographic break-down and sample size justifications

In Study 2a, we sought to collect enough data to ensure adequate statistical power to detect a small-to-medium effect size of shared reality in an increment to adjusted R^2 metric (f^2 of ~.07; Cohen, 1988). A minimum of 120 participants would ensure 80% power to detect a standardized f^2 effect size of .07 (based on an increment of .04 in R^2 when adding shared reality as a predictor to a model with four other predicts and a base R^2 of .40). We aimed to collect data from at least 135 Amazon Mechanical Turk workers to allow for exclusions based on attention checks. Participants were 138 M-Turk workers who participated for financial compensation of $1.20. Thirteen were excluded for failing at least one of two attention checks. The final sample consisted of 125 participants. Their mean age was 35.41 (*SD* = 11.80), 55.79% were female, and 79.71% were heterosexual. Their average relationship length was 9.00 years (*SD* = 7.60), and 63.04% were cohabiting and/or married.

In Study 2b, we sought to run a similar number of participants. Participants were 144 M-Turk workers, who participated for a financial compensation of $1.50. Fourteen were excluded because they failed at least one of two attention checks. The final sample consisted of 130 participants. Their mean age was 36.03 (*SD* = 11.70), 61.54% were female, and 84.62% were heterosexual. Their average relationship length was 10.27 years (*SD* = 9.73), and 80% were cohabiting and/or married.

The effect size of the incremental validity of shared reality in Study 2b was lower than that estimated in our original power analysis; thus, in Study 2c we sought to increase our sample size to enable detection of a smaller effect. A minimum of 165 participants would ensure 80% power

to detect a standardized f^2 effect size of .05. We sought to run at least 195 participants to allow for exclusions. Participants were 198 Amazon Mechanical Turk workers who participated for a financial compensation of $2.25. Thirty-two participants were excluded because they failed at least one of three attention checks. The final sample consisted of 166 participants. Their mean age was 34.63 (*SD* = 10.44), 62.05% were female, and 87.35% were heterosexual. Their average relationship length was 8.80 years (*SD* = 8.63), and 79.52% were cohabiting and/or married.

In Study 2d, we aimed to run a similar number of participants. Participants were 198 Amazon Mechanical Turk workers who participated for financial compensation of $2.50. Twelve were excluded because they failed at least one of two attention checks. The final sample consisted of 186 participants. Their mean age was 37.17 (*SD* = 11.39), 61.29% were female, and 91.40% were heterosexual. Their average relationship length was 9.60 years (*SD* = 7.67), and 87.10% were cohabiting and/or married. Additionally, two participants were excluded for all analyses including the Relationship Closeness Inventory because they left the frequency question blank.

Studies 2a-2d—Descriptive statistics for shared reality across samples

The mean value for shared reality was as follows: Study 2a: 4.59 (SD = 0.82, min = 1.00, max = 6.43); Study 2b: 5.27 (SD = 1.09, min = 1.50, max = 7.00); Study 2c: 5.22 (SD = 1.09, min = 1.75, max = 7.00), Study 2d: 5.36 (SD = 1.09, min = 1.38, max = 7.00)

Studies 2a-2d – Added Variance Explained by SR-G

As expected, in Study 2a, shared reality strongly predicted IOS ($\beta = 0.65$, $t(123) = 9.58$, $p < 0.0001$, 95% CI [0.52, 0.79]). To examine the added variance explained by shared reality, we conducted a multiple linear regression analysis to examine the relationship between shared reality and IOS adjusting for all of the other variables (see *Table 3).* Shared reality significantly predicted IOS ($\beta = 0.35$, $t(119) = 3.58$, $p < 0.0001$, 95% CI [0.16, 0.54]). This increment of .047 in adjusted

R^2 metric when adding shared reality as a predictor to the model with a base adjusted R^2 of .482 corresponds to a standardized f^2 effect size of .099.

In Study 2b, shared reality strongly predicted IOS (β = 0.62, $t(128) = 8.88$, $p < 0.0001$, 95% CI [0.48, 0.76]). In a multiple linear regression analysis examining the relationship between shared reality and IOS adjusting for all other close relationship variables (see *Table 3)*, shared reality significantly predicted IOS (β = 0.21, $t(122) = 2.49$, $p = 0.014$, 95% CI [0.04, 0.38]). This increment of .018 in adjusted R^2 metric when adding shared reality as a predictor to the model with a base adjusted R^2 of .549 corresponds to a standardized f^2 effect size of .042.

In Study 2c, Shared reality strongly predicted IOS (β = 0.75, $t(164) = 14.44$, $p < 0.0001$, 95% CI [0.64, 0.85]). In a multiple linear regression analysis examining the relation between shared reality and IOS adjusting for all other close relationship variables (see *Table 3)*, shared reality significantly predicted IOS (β = 0.28, $t(156) = 4.02$, $p < 0.0001$, 95% CI [0.14, 0.42]). This increment of .028 in adjusted R^2 metric when adding shared reality as a predictor to a model with a base adjusted R^2 of .675 corresponds to a standardized f^2 effect size of .095.

In Study 2d, shared reality strongly predicted IOS (β = 0.60, $t(184) = 10.16$, $p < 0.0001$, 95% CI [0.48, 0.72]). In a multiple linear regression analysis examining the relationship between shared reality and IOS adjusting for all other variables (see *Table 3)*, shared reality significantly predicted IOS (β = 0.21, $t(172) = 2.39$, $p = 0.018$, 95% CI [0.04, 0.38]). This increment of .014 in adjusted R^2 metric when adding shared reality as a predictor to the model with a base adjusted R^2 of .460 corresponds to a standardized f^2 effect size of .027.

To address any multicollinearity concerns, in each study we computed the Variance Inflation Factor (VIF) of shared reality in this model to assess whether the degree of correlation between shared reality and the covariates was problematic (Fox, 2016). VIF's are typically

considered problematic if they exceed 3. Shared reality VIF's were consistently below this cutoff across Studies 2-5.

Study 3a – Additional Analyses

We-Pronouns. When describing the conversation topic, participants in the Low SR condition (M = 6.95, SD = 7.96) used a significantly lower percentage of We pronouns than those in the High SR condition (M = 11.11, SD = 8.12): b = -0.5, $t(149)$ = -3.18, p = 0.002, 95% CI [-0.82, -0.19]. This effect remained significant when controlling for emotional valence: β = -0.44, $t(148)$ = -2.66, p = 0.009, 95% CI [-0.77, -0.11].

Identifying Emotional Valence of Words as a Control Variable. We controlled for emotional valence in order to ensure that the effects of the prompts were not purely due to valence. We report this valence effect here: When describing how they felt during the conversation, participants in the Low SR condition (M = -9.95, SD = 23.53) used significantly more negatively (*vs.* positively) valenced words than those in the High SR condition (M = 12.86, SD = 22.68): β = -0.89, $t(149)$ = -6.06, p = 0, 95% CI [-1.18, -0.6]. When describing how they felt during the conversation, participants in the Low SR condition (M = -0.59, SD = 2.8) used significantly less negatively (vs. positively) valenced words than those in the High SR condition (M = 1.56, SD = 3.56): β = -0.64, $t(149)$ = -4.13, $p < 0.001$, 95% CI [-0.95, -0.33].

Study 3b – Additional Analyses

We-Pronouns. When describing the conversation topic, participants in the Low SR condition (M=6.97, SD=6.68, N=75) used a significantly lower percentage of We-pronouns than those in the High SR condition (M=10.49, SD=7.40, N=71), $t(144)$ = -3.01, p = 0.003). This effect

remained significant controlling for emotional valence of the words: β = -0.45, t = -2.79, p = 0.006, 95% CI [-0.78, -0.13].

Identifying Emotional Valence of Words as a Control Variable. We controlled for emotional valence in order to ensure that the effects of the prompts were not purely due to valence. We report this valence effect here: When describing how they felt during the conversation, participants in the Low SR condition (M = -15.12, SD = 27.58) used significantly more negatively (vs. positively) valenced words than those in the High SR condition (M = 12.68, SD = 31.59): β = -0.85, t(149) = -5.67, p < 0.001, 95% CI [-1.15, -0.56]. When describing how they felt during the conversation, participants in the Low SR condition (M = -0.59, SD = 2.8) used significantly more negatively (vs. positively) valenced words than those in the High SR condition (M = 1.56, SD = 3.56): β = -0.64, t(149) = -4.13, p < 0.001, 95% CI [-0.95, -0.33].

Description of Michael used in Study 4a (Echterhoff et al., 2005; Echterhoff et al., 2008): 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.

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.

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.

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

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.

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.

Modified Description of Michael used in Study 4b (pre-tested for evaluative ambiguity in an M-Turk sample):

Michael always wants to say exactly what's on his mind. When a friend once asked him to comment on her painting, he told her that more work on it would be necessary.

Michael spends a great amount of his time in search of excitement and adventure. He has already climbed Mt. McKinley, done some skydiving, shot the Colorado rapids in a kayak, gone down-hill mountain-biking at night, and backcountry skied—without any avalanche safety training. He has been injured, and even risked death, a number of times.

Michael is a skilled conversationalist and makes acquaintances easily. He has so many acquaintances that his conversations can seem hurried and superficial. He is quick to make plans with people, without necessarily having the intention of following through with them.

Michael reads a lot. He tends to correct grammatical mistakes made in his presence. He's a good speaker and can talk at length about all kinds of topics.

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.

Shared reality paradigm modified for M-Turk context in Study 4a:

Participants were told that the study was the continuation of a long-term online study investigating interpersonal interactions that was conducted over the course of 3 months. They were told that they would be randomly assigned through an online database to communicate with another participant, who would be one of 30 people who participated in that study. After a short pause during which the system appeared to be searching for another participant, they received a message from the experimenter informing them that they had been paired with another participant named Sam (selected because of its gender-androgyny). They were then told that they would be given a passage that described Michael, who was also one of the 30 participants from the fall study, and that Sam liked (or disliked) Michael. Their task was to describe Michael without mentioning Michael's name, so that Sam could identify Michael from the 30 other participants. Participants then wrote their message to their partner. After completing 10-minutes-worth of filler tasks (during which their partner was ostensibly reading their description), participants received a message from the experimenter giving them feedback that Sam had correctly (success feedback) or incorrectly (failure feedback) identified Michael as the target of their message. Participants then answered a series of interpersonal questions about Sam and about their mood. Lastly, Participants answered demographic questions and a funneled suspicion check was administered.

Images and Chat Questions in Study 5

Picture 1

1. Why do you think the man in the hooded sweatshirt and the man with the pipe are talking?
2. What do you think will happen next (after the moment in the picture)? Why?
3. Considering what you have discussed, how do you think you would feel in this situation if you were the man in the hooded sweatshirt?

Picture 2

1. What are the people in the picture talking about?
2. Why is the man with black hair standing?
3. Considering what you have discussed, what do you think the mood in the room is like?

Standardized Regression Coefficients for Multiple Linear Regression Model of Inclusion of Other in Self (IOS) as a Function of All Close Relationship Variables Across Studies 2a-2d

	Study 2a		Study 2b		Study 2c		Study 2d	
Predictor	β	95% CI	β	95% CI	β	95% CI	β	95% CI
(Intercept)	0.06	[-0.24, 0.35]	0.00	[-0.11, 0.11]	0.00	[-0.08, 0.08]	0.00	[-0.11, 0.11]
Satisfaction	0.04	[-0.25, 0.34]	0.24	[-0.06, 0.55]	0.26	[-0.00, 0.53]	0.20	[-0.05, 0.45]
Commitment	0.32*	[0.07, 0.58]	-0.15	[-0.35, 0.06]	0.12	[-0.06, 0.30]	-0.02	[-0.17, 0.13]
Responsiveness	0.21	[-0.06, 0.48]	0.25	[-0.08, 0.58]	0.05	[-0.17, 0.27]	0.03	[-0.19, 0.26]
Identification	-0.10	[-0.32, 0.12]	0.28**	[0.08, 0.47]	0.23**	[0.09, 0.37]	0.00	[-0.16, 0.16]
Intimacy			0.15	[-0.13, 0.43]	0.03	[-0.18, 0.23]	0.20	[-0.04, 0.44]
Support			-0.13	[-0.36, 0.09]	0.18*	[0.02, 0.34]		
Trust					-0.22*	[-0.40, -0.05]		
Value Similarity					0.05	[-0.05, 0.14]	0.10	[-0.02, 0.22]
General Similarity							0.01	[-0.13, 0.15]
Rel. Centrality							0.20**	[0.06, 0.35]
Rel. Close. Inv.							0.09	[-0.04, 0.21]
Shared Reality	0.35***	[0.16, 0.54]	0.21*	[0.04, 0.37]	0.27***	[0.14, 0.41]	0.21*	[0.04, 0.38]

Note. *$p < .05$; **$p < .01$, ***$p < .001$. Measures not included in the study are left blank.

Log Odds Estimates for Multiple Logistic Regression Model of Likelihood of Reporting the Experience of 'Merged Minds' as a Function of All Close Relationship Variables in Study 2d

Predictor	*Log Odds Estimate*	95% CI
(Intercept)	-0.42	[-0.78, -0.07]
Satisfaction	0.07	[-0.80, 0.94]
Commitment	0.00	[-0.54, 0.55]
Responsiveness	0.20	[-0.53, 0.94]
Identification	-0.38	[-0.92, 0.15]
Intimacy	-0.41	[-1.22, 0.40]
Value Similarity	0.23	[-0.19, 0.64]
General Similarity	-0.05	[-0.50, 0.40]
Rel. Centrality	-0.24	[-0.72, 0.23]
Rel. Close. Inv.	0.18	[-0.23, 0.58]
IOS	0.14	[-0.33, 0.61]
SR-G	1.72***	[0.97, 2.46]

Note. ***$p < .001$. N = 184. All predictor variables are standardized.

Results Summary for Exploratory Factor Analysis with Items from All Constructs in Studies 2a-2d.

In each study, we retained the number of factors greater than 1 (Kaiser, 1958). Note that for each of the SR-G items cross-loading onto other factors, these items loaded more strongly onto the SR-G factor, and for each of the non-SR-G items cross-loading onto the SR-G factor, these items loaded more strongly onto the factor that held the majority of their items.

Study	**2a**	**2b**	**2c**	**2d**
Number of factors with eigenvalues greater than 1	7	9	9	9
Which factor did the SR-G items load onto?	4th	4th	4th	2nd
Did all the SR-G Items load on the SR-G factor? How highly?	yes (.43-.96)	yes (.56-1)	yes (.44-.92)	yes (.67-.78)
How many SR-G items cross-loaded on other factors, and which ones? **Note, these items loaded more strongly onto the SR-G factor*	2 - item 3: .41 on factor 1 (with satisfaction/ responsiveness items) - item 7: .44 on factor 3 (identification items)	2 - item 4: .36 - item 7: .33 (both on factor 3, identification items)	0	0
How many other items cross-loaded on the SR-G factor, and which ones? **Note, these items loaded more strongly onto their own respective factors*	3 - Satisfaction item 6 (.33) - Commit. item 6 (.35) - Responsiv. item 11 (.34)	0	1 - Commit. item 3: (.36)	1 - Identif. item 5: (.38)

Correlation Matrices of Close Relationship Variables in Study 2a, 2b, & 2c.

	SR-G	1	2	3	4
1. IOS	**0.65**				
2. Responsiveness	**0.69**	0.66			
3. Commitment	**0.63**	0.66	0.73		
4. Satisfaction	**0.62**	0.64	0.86	0.83	
5. Identification	**0.73**	0.57	0.68	0.77	0.67

	SR-G	IOS	Intimacy	Responsiveness	Commitment	Satisfaction	Identification
IOS	**0.62**	-	-	-	-	-	-
Intimacy	**0.65**	0.69	-	-	-	-	-
Responsiveness	**0.66**	0.70	0.87	-	-	-	-
Commitment	**0.63**	0.55	0.70	0.67	-	-	-
Satisfaction	**0.61**	0.69	0.89	0.90	0.67	-	-
Identification	**0.62**	0.62	0.66	0.66	0.78	0.62	-
Support	**0.60**	0.58	0.76	0.86	0.65	0.80	0.61

	SR-G	1	2	3	4	5	6	7	8
1. IOS	**0.75**	-	-	-	-	-	-	-	-
2. Intimacy	**0.66**	0.7	-	-	-	-	-	-	-
3. Responsiveness	**0.69**	0.7	0.83	-	-	-	-	-	-
4. Commitment	**0.74**	0.76	0.75	0.76	-	-	-	-	-
5. Satisfaction	**0.72**	0.77	0.91	0.88	0.83	-	-	-	-
6. Identification	**0.68**	0.72	0.63	0.63	0.77	0.7	-	-	-
7. Support	**0.63**	0.68	0.75	0.82	0.69	0.8	0.58	-	-
8. Trust	**0.63**	0.60	0.74	0.86	0.70	0.81	0.60	0.79	-
9. Value Similarity	**0.37**	0.38	0.32	0.32	0.40	0.38	0.31	0.32	0.29

Correlation Matrix of Constructs in Study 5.

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. SR Behav												
2. SR-G	.43**											
3. Close	.36**	.73**										
4. Rapport	.28**	.67**	.80**									
5. Chat Int.	.21**	.65**	.72**	.74**								
6. Click	.35**	.78**	.75**	.77**	.74**							
7. Resp	.43**	.76**	.74**	.71**	.60**	.75**						
8. IOS	.14*	.60**	.64**	.55**	.54**	.66**	.60**					
9. Sim	.30**	.82**	.79**	.71**	.73**	.82**	.71**	.71**				
10. Certain	.06	.43**	.33**	.33**	.34**	.34**	.36**	.34**	.39**			
11. Epis.Trust	.38**	.73**	.70**	.62**	.55**	.68**	.72**	.55**	.72**	.35**		
12. Sense	.52**	.74**	.67**	.65**	.58**	.70**	.79**	.51**	.61**	.30**	.67**	
13. Agree	.41**	.66**	.62**	.54**	.49**	.60**	.67**	.48**	.60**	.39**	.70**	.68**

Note. ** indicates $p < .001$