Failure to Share Reality and its Consequences for Self-Concept Clarity

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Abstract

Shared Reality Theory argues that people are motivated to perceive the world in similar ways to people around them to fulfill epistemic and relational motives. However, most research on shared reality has focused on dyads. Taking a broader perspective, disagreement with members of one's social networks may threaten shared reality, with downstream consequences for confidence in core cognitive structures, including the self-concept. In four studies, we manipulated (Study 1) and measured (Studies 2-4) perceived disagreement within an individual's social network. Results revealed that, especially when epistemic and social motives were high, disagreeing with or perceiving disagreement in one's social network was associated with lower self-concept clarity, which mediated negative consequences for well-being. Comparing network disagreement to network diversity, we found that disagreement better explained effects on self-concept clarity. These results suggest that one's broader social network can impact attempts to share reality, with consequences for the self and well-being.

Failure to Share Reality and its Consequences for Self-Concept Clarity

When sitting down at the dinner table, we are often advised to steer away from topics like politics and religion. We eschew these controversial subject matters because we hope to avoid having to outwardly disagree with one another, and with good reason—most of us find it quite uncomfortable to disagree with people whose opinions we value. The motivation to minimize discrepancies between our views and those of the important people in our lives is central to Shared Reality Theory (SRT; Hardin & Higgins, 1996; Hardin & Conley, 2001), which states that people have a fundamental need to “share reality.” That is, people strive to reach a mutual understanding of the world with close others. Establishing shared reality with others is postulated to incorporate both epistemic and relational motives—derived from people’s desire to understand their dynamic world, and to feel connected to others.

Yet inevitably, people will discuss controversial issues with others and find that they sometimes do not share reality with their conversation partner. When we discover that individuals within our social circle hold views that are discrepant from our own, we become less certain and more conflicted about our views (Visser & Mirabile, 2004), and our attitudes become less stable (Levitan & Visser, 2009). From the perspective of SRT, disagreement with others signals that: 1) one might be incorrect and 2) one lacks connection to the group.

In the current research, we investigate two crucial research questions. First, we test the notion that failing to share reality with close others has consequences that are considerably more far-reaching, shaking not only our confidence in specific attitudes but in our *sense of who we are* (i.e., self-concept clarity). Second, we aim to test if the relationship between shared reality (i.e., perceived mutual understanding with others) and the clarity of people’s sense of self is stronger for people with chronically high epistemic or relational needs.

Shared Reality and Attitudes in the Social Context

Shared Reality Theory is a theoretical framework that integrates the insights of models such as Social Comparison Theory (Festinger, 1954), social influence (Deutsch & Gerard, 1955), and Self-Verification (Swann & Read, 1981), to argue that people are fundamentally motivated to achieve a shared understanding of the world with important others. As described by this framework, people seek to verify their perceptions against those of close others' in service of core epistemic and relational motives. By confirming that one's understanding of the world is shared with others who are considered to be valid judges, shared reality is theorized to reduce uncertainty and increase perceptions that the world is stable and orderly (Hardin & Higgins, 1996; Hardin & Conley, 2001). In addition, shared beliefs and attitudes serve to cement important relationships, serving needs for social connection.

To the extent that an individual's social ties—the friends, family members, co-workers, neighbors, and other connections that make up their personal network—share the same beliefs, attitudes, background, and ideology, they should be better able to achieve validation of their beliefs and experience less interpersonal conflict. And if differences of opinion do arise, individuals should be motivated to tune their beliefs to those of their relationship partners, reducing such discrepancies. Indeed, empirical evidence supports the notion that social networks exert such social influence on individuals' attitudes (Huckfeldt & Sprague, 1991).

While social influence processes have been studied extensively in the context of social networks, shared reality has typically been explored in the context of dyadic relationships and communication (e.g., Echterhoff, Higgins, & Groll, 2005; Lowery, Hardin, & Sinclair, 2001; cf. Echterhoff, Kopietz, & Higgins, 2017). Broadening the scope from a one-on-one social context to the network level presents additional complications for the individual—while tuning one's

attitude to an interaction partner may temporarily foster shared reality and mitigate personal concerns, experiencing disagreement across a broader range of relationships may have deeper consequences. For example, the fact that social network members have the potential to hold distinct attitudes from one another means that there may not be a single attitude to tune to. As a result, disagreement with social network members may not be easily resolved, and achieving shared reality with all network members may be impossible.

While attitudinally homogeneous networks may be the norm, many individuals' networks remain attitudinally heterogeneous (e.g., Choi, Lee, & Metzgar, 2017; Kim & Kim, 2017; Guidetti, Cavazza, & Graziani, 2016; Goel, Mason, & Watts, 2010; Visser & Mirabile, 2004; Mutz, 2002; Bienenstock, Bonacich, & Oliver, 1990; Simmel, 1955). Previous work exploring the consequences of such social networks is generally consistent with the claim that disagreeing with one's social network members threatens attempts to form a shared reality. For example, greater disagreement is associated with greater uncertainty and ambivalence about the issue in question (Visser & Mirabile, 2004), suggesting failure to receive validation of one's attitudes. Further, while individuals who disagree with their networks are more prone to shifting their attitudes, they primarily do so in response to strong (vs. weak) arguments (Levitan & Visser, 2008), while individuals in homogenous networks do not distinguish based on argument strength, suggesting that agreeing with members of one's network satiates epistemic motives while disagreeing with them does not. Finally, people who disagree with a portion of their network members are also less likely to act on their attitudes, especially in ways that would be highly visible (e.g., active political participation), in order to avoid conflict with social network members (Mutz, 2002), underscoring the relational consequences of failing to share reality.

Shared Reality and the Self

Previous work has identified consequences of failing to achieve shared reality for the issue on which mutual understanding was sought. In audience tuning studies, for example, cues that shared reality was not achieved eliminate the impact of message tuning on personal attitudes (Echterhoff, Higgins, & Groll, 2005). However, the motives that underlie shared reality are broader in scope than the specific issue in question, suggesting that threats to shared reality could have consequences beyond the specific attitude issue. Moreover, the broader set of relationships entailed in an individual's social network may increase the scope of consequences for failing to share reality.

We posit that one locus of these underlying motives—and thus a potential site for exploring the consequences of having them blocked—is the self-concept. A variety of theories posit that the self represents our assessment of our fulfillment of both relational (Leary et al., 1995) and epistemic motives (Greenwald, 1980; Stinson et al., 2010). Because of its role in linking stored representations about the individual self (including one's capacity to correctly make judgments about the world), and one's position in the social world, the self-concept sits at a crucial nexus in the negotiation of and consequences of achieving shared reality. Thus, we propose that achieving—or failing to achieve—shared reality should have consequences for the self that extend beyond the single issue of interest.

Specifically, we propose that perceiving that shared reality cannot effectively be achieved should increase feelings of uncertainty and ambivalence about the self-concept—in other words, it should reduce self-concept clarity (Campbell et al., 1996). Self-concept clarity represents an individual's subjective judgment about how well they know themselves. Self-concept clarity varies both between individuals, and within individuals (Schwartz et al., 2011), presumably impacted by experiences of self-affirmation versus self-threat. Indeed, threats to the motives

underlying shared reality implicate self-concept clarity—social rejection reduces self-concept clarity, especially among individuals high in rejection sensitivity (Ayduk, Gyurak, & Luerssen, 2009), and experiences of subjective uncertainty lead individuals to compensate by bolstering self-concept clarity (McGregor & Marigold, 2003), suggesting efforts to protect the self-concept against disruptions posed by threats to epistemic motives. Moreover, lower self-concept clarity is also associated with failing to receive self-verification from close others (Emery et al., 2018)—essentially failing to achieve shared reality about oneself. Such findings suggest that threats to shared reality may also threaten the clarity of the self-concept.

Importantly, disruptions to self-concept clarity can have far-reaching implications for self-regulation, interpersonal relationships, and psychological well-being (Light, 2017). Low self-concept clarity is implicated in a variety of maladaptive self-regulatory behaviors, including self-handicapping (Thomas & Gadbois, 2007), use of passive and avoidant coping strategies (Smith, Wethington, & Zhan, 1996), and being more easily distracted by alternative goals (Light, Rios, & DeMarree, 2018). More distally, people with low self-concept clarity also report more depressive symptoms, perseverative thinking, and poorer physical health, even when controlling for a close correlate of self-concept clarity, self-esteem (DeMarree & Bobrowski, 2017). Thus, to the extent that failing to achieve a sense of shared reality threatens self-concept clarity, decreased clarity about the self should also mediate downstream negative consequences for well-being.

Motives for Shared Reality

As previously described, the drive to achieve shared reality is connected to both epistemic and relational concerns—people desire to confirm that their beliefs about the world are correct, and also use shared understandings to cement relationships with valued others (Echterhoff, Higgins, & Levine, 2009). As with other consequences of shared reality, we

hypothesize that disagreeing with social network members will impact self-concept clarity to a greater extent when these motives are important to the individual. While other research on shared reality has manipulated epistemic (Lun et al., 2007) and relational motives (Pierucci, Klein, & Carnaghi, 2013), individuals also differ in the chronic strength of these motives. Accordingly, shared reality should be more desirable—and thus threats to shared reality more negatively impactful—for individuals who have chronically heightened epistemic needs (i.e., need for structure) and/or relational needs (i.e., need to belong).

For example, people widely vary in their personal need for structure (Neuberg & Newsom, 1993) and their need to affiliate with others (Leary et al., 2013). Thus, failure to achieve shared reality should be particularly consequential to people that are higher on either or both of these two chronic motives. Similarly, situational factors that heighten or satiate the strength of either motive should moderate the effects of failing to share reality. Because SRT posits that shared reality satisfies both motives simultaneously, it is difficult to know whether the effects of failing to share reality is more dependent on epistemic or relational motives, or both, as the theory states. One primary goal of the current research is to empirically test this unresolved question.

Social Network Structure

In addition to individual differences in the motives underlying shared reality, features of the social environment may exacerbate the impact of disagreeing with one's social network. For example, structural features of the network itself may alter how individuals are able to manage their efforts to achieve shared reality. Social networks differ in their level of density—that is, the number of ties between social network members. For example, if Mary's three friends Ted, Bill, and Bob all know each other quite well, her social network would be denser than Sarah's social

network if Sarah's three friends Susan, Frank, and Karen are all strangers to one another. A variety of studies note that denser networks are associated with more consistent adherence to social and ethical norms (Brass, Butterfield, & Skaggs, 1998; Chung et al., 2011; Schafer, 2014; Swartout, 2013; Haynie, 2001). This may be because denser networks increase opportunities for information to flow among network members, meaning that one's behavior is more likely to impact one's reputation among network members who are not present.

The fact that denser networks are associated with stricter social norms suggests that the risk of rejection for holding a discrepant attitude may be higher, thus heightening the affiliative needs for achieving shared reality. As a result, denser networks should lead to more negative consequences for self-concept clarity.

Present Research

In four studies, we explored the consequences of disagreeing with social network members for achieving shared reality. Specifically, we hypothesized that people whose social networks contained greater disagreement would be less able to achieve shared reality within their social network, leading to lower self-concept clarity. Given that shared reality is valued as a means to achieve epistemic certainty and maintain strong relationships, we further hypothesized that the consequences of disagreeing with one's social network should be especially impactful for people whose epistemic and relational needs are especially strong, either due to dispositional differences in the strength of the motives, or due to situational factors that strengthen certain motives. We further hypothesized that structural features of the social network, like the density of ties among network members, will exacerbate the effects of heightened shared reality motives. Finally, we hypothesized that reduced self-concept clarity should mediate the indirect effects of heterogeneous social networks on well-being.

In Study 1 ($N = 117$), we experimentally manipulated perceptions of disagreement and explored whether consequences for self-concept clarity differed between participants high versus low in the need for personal structure (Neuberg & Newsom, 1993). In Study 2, we replicated these patterns of association, and additionally explored moderation by belonging needs, in a correlational study of a large, nationally-representative sample ($N = 1,100$). In Study 3, we replicated the basic association between social network disagreement and self-concept clarity, and investigated its downstream associations with well-being, in a second large, nationally-representative sample ($N = 1,219$). In addition, we explored moderation again by belonging needs, here assessed through situational factors that enhance or diminish the strength of belonging needs (i.e., seeing one's future as limited vs. expansive; Carstensen, 2006), and by structural network features (i.e., density) that might enable or thwart attempts to achieve shared reality with specific network ties without threatening other relationships. Finally, in Study 4 ($N = 604$), we compared network disagreement to the diversity of attitudes expressed by social network members to assess which variable better explained effects on self-concept clarity.

Study 1

Method

Participants

Participants were 117 residents of the United States and Canada (62 women), recruited through Amazon's Mechanical Turk. Participants' ages ranged from 19 to 70 years, with a mean age of 36.54 ($SD = 11.98$). Sample size was determined by a rule of thumb of 60 participants per condition, though sensitivity analyses indicate that this study has power of .80 to detect an effect size of $f > .26$.

Procedure

To manipulate perceived social network disagreement, participants were asked to think of an issue that was either controversial among their friends, family members, co-workers, and neighbors (high disagreement condition), or an issue on which there was consensus among their social network members (low disagreement condition). In addition, participants in the high disagreement condition were asked to list two social network members who disagreed with one another on the specific issue, while participants in the low disagreement condition were asked to list two social network members who agreed with one another.

After completing the network disagreement manipulation, participants responded to several items assessing perceptions of their social network. These items were adapted from the Attitude Homophily items from the Perceived Homophily Scale (McCroskey, Richmond, & Daly, 1975), and consisted of seven semantic differential items, with the end points reflecting either high network disagreement, or low network disagreement (e.g., “Think like each other/Do not think like each other,” see Appendix A for the full list of items). Participants responded to these items on six-point scales. Items were recoded such that higher numbers reflected higher levels of disagreement (i.e., lower levels of homophily), and the recoded items were averaged to create an index of perceived network disagreement ($\alpha = .92$; $M = 3.19$, $SD = 1.10$).

After completing the items on perceived network homophily, participants responded to the full Self-Concept Clarity Scale (Campbell et al., 1996; Sample item: “I spend a lot of time wondering about what kind of person I really am,” reverse-coded). Participants responded to each item on a five-point, fully-labeled scale from *Strongly Disagree* to *Strongly Agree*. Items were averaged to create an index of self-concept clarity ($\alpha = .85$; $M = 3.67$, $SD = .77$).

Participants next responded to the Personal Needs for Structure Scale (Neuberg & Newsom, 1993; sample item: “I don’t like situations that are uncertain,”). Participants responded

to each of the 12 items on a six-point, fully-labeled scale from *Strongly Disagree* to *Strongly Agree*. Items were averaged to create an index of personal need for structure ($\alpha = .88$; $M = 4.19$, $SD = .82$).

Embedded among the self-report scales were two attention checks—"Sometimes I think I know how to answer a question before I've read the whole question. Please select Agree for this question," and "I read everything carefully. If you are reading carefully, please select Disagree for this response." Six participants failed to select the indicated responses on these items and were excluded from subsequent analyses¹.

Results

Participants in the high disagreement condition reported that their social networks has lower homophily ($M = 3.63$, $SD = 1.12$) than did participants in the low disagreement condition ($M = 2.75$, $SD = .88$; $t(109) = -4.58$, $p < .001$, Cohen's $d = .87$). Thus, our manipulation successfully affected participants' perceptions of disagreement among their social network members.

We predicted that perceiving high levels of disagreement in one's social network would decrease self-concept clarity for individuals with high personal need for structure, but not for individuals with low personal need for structure. Thus, we conducted a regression analysis with disagreement condition, personal need for structure, and their interaction predicting participants' reported self-concept clarity. This analysis yielded a significant main effect of network disagreement condition, ($B = 2.26$, $SE = .74$, $t(107) = 3.06$, $p = .003$, 95% CI: (.80, 3.73), $\eta_p^2 = .080$), a significant effect of personal need for structure, ($B = .29$, $SE = .12$, $t(107) = 2.48$, $p <$

¹ Four participants who failed the manipulated check were in the low network disagreement condition, while two were in the high network disagreement condition. Including these participants in analyses did not change the pattern or significance of reported effects.

.015, 95% CI: (.058, .53), $\eta_p^2 = .054$), as well as a significant interaction between disagreement condition and personal need for structure, ($B = -.52$, $SE = .17$, $t = -3.02$, $p = .003$, 95% CI: (-.87, -.18), $\eta_p^2 = .078$; see Figure 1.)

Figure 1: Study 1: Self-concept clarity as a function of network disagreement condition and personal need for structure (plotted at +1 SD and -1 SD).

To explore this interaction, we used the Johnson-Neyman method to assess regions of significance. This analysis indicated that the high disagreement condition led to lower levels of self-concept clarity when personal need for structure was higher than 1.2 standard deviations above the mean, ($B = -.43$, $SE = .22$, $t(107) = -1.74$, 95 % CI: (-.87, 0), $\eta_p^2 = .035$) but led to significantly *higher* levels of self-concept clarity when personal need for structure was lower than .56 standard deviations below the mean ($B = .32$, $SE = .17$, $t(107) = 1.98$, 95% CI: (0, .66), $\eta_p^2 = .035$). In other words, when personal need for structure was high, perceiving greater disagreement in one's social network decreased self-concept clarity relative to perceiving one's social network as homogenous. However, when personal need for structure was moderate to low,

perceiving greater disagreement increased self-concept clarity relative to perceiving one's network as homogeneous.

Discussion

Supporting our hypothesis that disagreeing with social network members has a negative causal influence on self-concept clarity, Study 1 found that reported self-concept clarity was influenced by perceptions of disagreement in one's social network. Participants high in Personal Need for Structure reported lower self-concept clarity when they focused on points of contention and disagreement in their social network than when focusing on points of consensus. These findings are consistent with our hypothesis that disagreement with social network members threatens the perception that shared reality can be achieved, and that epistemic motives (i.e., need for structure) are implicated in this process.

Unexpectedly, participants low in need for structure reported higher self-concept clarity in the high network disagreement condition. While unpredicted, we speculate that if the epistemic and social motives underlying shared reality are satiated, disagreement among social network member may impact the self-concept through other pathways, such as by affirming personal commitment to universalist values. However, further research is needed to confirm this speculation.

Study 2

By experimentally manipulating perceptions of social network disagreement, we demonstrated a causal impact of such disagreement on participants' self-concept clarity. Notably, we found that this impact differed depending on participants' epistemic needs—people high in need for structure reported lower self-concept clarity when they perceived controversy (vs. consensus), while disagreement increased self-concept clarity among participants low in need for

structure. In Study 2, we sought to replicate this pattern of effects—the interactive effect of social network disagreement and need for structure on self-concept clarity—in a large, nationally representative sample. In addition to epistemic motives, we hypothesized that relational motives would also moderate the effects of social network disagreement on self-concept clarity. Thus, in Study 2, we additionally explored belonging needs as a moderator. This allowed for a more complete test of SRT, which theorizes that sharing reality with others serves epistemic and relational needs simultaneously. Additionally, Study 2 allows, for the first time, a test of SRT that disentangles whether failing to share reality has only epistemic *or* relational implications, or both.

Method

Participants.

A nationally representative sample of 3,041 adults from the United States was recruited by Knowledge Networks. Participants were initially recruited through random-digit dialing, drawing on both listed and unlisted numbers, and internet access was provided to those who did not already have it, allowing them to complete the survey online. Of these participants, 1,100 (561 female) completed the questions related to social network attitudes and self-concept clarity, and are included in the current analyses. Ages ranged from 18 to 92 years (mean age = 50.99 years). Sample size was determined based on available funding and logistical constraints of conducting such a representative sample. However, sensitivity analyses indicate that the sample size is large enough to detect effect sizes of $f > .011$ with power = .95.

Measures.

Social network composition. Participants listed up to five people with whom they had discussed matters of importance in the past six months. Participants identified an average of 3.78

network members ($SD = 1.71$). For each of these network members, participants responded to the question “In general, how different are [name]’s political views from your own views?” on a five-point, fully-labeled scale from *Not at all* different to *Extremely* different. For each participant, a composite measure of disagreement within his or her social network was created by averaging disagreement across network members.

Self-concept clarity. Participants responded to five items from the Self-Concept Clarity Scale: “My beliefs about myself often conflict with one another,” “Sometimes I feel that I am not really the person that I appear to be,” “My beliefs about myself seem to change very frequently,” “If I were asked to describe my personality, my description might end up being different from one day to another day,” and “In general, I have a clear sense of who I am.” (Campbell et al., 1996). Participants responded to each of these items on a five-point, fully-labeled scale from *Definitely not true of me* to *Extremely true of me* ($M = 4.19$, $SD = .67$).

Personal Need for Structure. Participants responded to four items from the Personal Need for Structure Scale: “I enjoy having a clear and structured mode of life,” “I like to have a place for everything and everything in its place,” “I don’t like situations that are uncertain,” and “I hate to change my plans at the last minute” (Neuberg & Newsom, 1993). Participants responded to each of these items on a five-point, fully-labeled scale from *Definitely not true of me* to *Extremely true of me* ($M = 3.19$, $SD = .79$).

Need to Belong. Participants responded to three items from the Need to Belong Scale: “I want other people to accept me,” “I have a strong need to belong,” and “It bothers me a great deal when I am not included in other people’s plans” (Leary et al, 2013). Participants responded to each of these items on a five-point, fully-labeled scale from *Definitely not true of me* to *Extremely true of me* ($M = 2.57$, $SD = .90$).

Results

The present study revealed a significant negative correlation between network disagreement and self-concept clarity, $r(1101) = -.21, p < .001$. Thus, participants who were less able to construct shared reality within their social networks reported lower self-concept clarity than those who were able to achieve shared reality. To explore the role of epistemic and relational motives for seeking shared reality, we investigated whether this relationship was moderated by (a) personal need for structure (epistemic needs) and (b) need to belong (relational needs). Using model 1 from the PROCESS macro in SPSS (Hayes, 2017), we found that the relationship between social network disagreement and self-concept clarity was significantly moderated by personal need structure (interaction: $B = -.26, SE = .13, t(1096) = -1.96, p = .050$, 95% CI: $(-.52, -.0002)$, $\eta_p^2 = .004$; see Figure 2).

Figure 2. Study 2: Self-concept clarity as a function network disagreement and need for structure, plotted at +1 SD and -1 SD for each variable.

A Johnson-Neyman analysis indicated that the the relationship between social network disagreement and self-concept clarity was significantly negative when personal need for structure scores were greater than 1.81—about 1.74 standard deviations below the mean ($B = -.41$, $SE = .021$, $t(1096) = -1.96$, $p = .05$, 95% CI: $(-.82, 0)$, $\eta_p^2 = .004$). Thus, network disagreement was associated with lower self-concept clarity for people with moderate to high levels of personal need for structure but was not significantly associated with self-concept clarity for people with very low levels of need for structure. Notably, even at the lowest reported levels of need for structure, we did not observe the reversal of the predicted effect observed in Study 1. At the lowest reported levels of need for structure, the relationship between network disagreement and self-concept clarity was non-significant, with a negative trend ($B = -.20$, $SE = .31$, $t(1096) = -.65$, $p = .51$, 95% CI: $(-.80, .40)$, $\eta_p^2 = .000$).

Similarly, we used PROCESS model 1 to assess moderation by belonging needs. This analyses revealed a significant main effect of belonging needs, such that higher levels of belonging needs were associated with lower self-concept clarity ($B = -.12$, $SE = .040$, $t(1097) = -3.06$, $p = .002$, 95% CI: $(-.20, -.04)$, $\eta_p^2 = .008$; see Figure 3).

Figure 3. Study 2: Self-concept clarity as a function of network diversity and belonging needs, plotted for values at +1 SD and -1 SD for each variable.

This was qualified by a significant network disagreement $\times$ belonging needs interaction ($B = -.21$, $SE = .11$, $t(1097) = -2.00$, $p = .045$, 95% CI: $(-.43, -.004)$, $\eta_p^2 = .004$). A Johnson-Neyman analysis indicated that the relationship between network disagreement and self-concept clarity was significantly positive at all levels of belonging needs. However, this relationship was significantly weaker when belonging needs were low (-1 SD: $B = -.57$, $SE = .14$, $t(1097) = -4.22$, $p < .0001$, 95% CI: $(-.84, -.31)$, $\eta_p^2 = .015$) than when belonging needs were high (+1 SD: $B = -.95$, $SE = .14$, $t(1097) = -6.60$, $p < .0001$, 95% CI: $(-1.24, -.67)$, $\eta_p^2 = .039$).

Discussion

Study 2 replicated the basic findings of Study 1 in a large, nationally-representative sample with participants reporting on the level of disagreement with their social network members. As in Study 1, disagreement with social network members was associated with lower self-concept clarity among people with high personal need for structure, but not among people

with low need for structure.

In addition to replicating moderation by epistemic needs, we also assessed whether the association with network disagreement was moderated by relational needs. As predicted by SRT, people higher in belonging needs showed a stronger association between network disagreement and self-concept clarity than people lower in belonging needs. To our knowledge, this is the first study to demonstrate that the effects of shared reality are simultaneously impacted by epistemic and social motives.

Unlike Study 1, we did not find in Study 2 that participants with low epistemic needs reported higher SCC when their networks reflected greater disagreement. The lack of evidence for this unexpected result in a larger sample suggests that it is not robust. However, we will return to this finding in the General Discussion.

Study 3

In addition to replicating the basic association between network disagreement and self-concept clarity, Study 3 sought to expand the scope of social network variables assessed. We have argued that disagreeing with social network members should threaten shared reality motives by highlighting issues on which mutual understanding is not achieved, raising that possibility that (a) they could be wrong about important issues (thereby threatening epistemic motives), and that (b) they could risk social rejection for holding discrepant views (thereby threatening affiliative motives). Network structural features like network density could heighten the threat to shared reality motives. Social networks with greater density—that is, networks in which a greater portion of network members know one another, creating a greater density of ties among network members—are associated with stronger social norms (Liu et al., 2018; Brass, Butterfield, & Skaggs, 1998; Chung et al., 2011; Schafer, 2014; Swartout, 2013; Haynie, 2001). A setting with

stricter social norms may increase the likelihood that an individual will experience or anticipate experiencing ostracism for their discrepant views. Especially to the extent that affiliative motives are high, then, people in denser networks should be more threatened by the failure to share reality with social network members.

As in Studies 1 and 2, we expected that these effects would depend on the strength of motives underlying shared reality. However, Study 3 was not designed with the present hypotheses in mind, and thus did not directly measure shared reality motives. However, other indirect measures of such motives were measured. Taking advantage of the present sample's varied aged range, we assessed participants' perception that their time in life was either limited or expansive, a situational factor that impacts the strength of affiliative motives. Socioemotional Selectivity Theory has identified temporal perception as key in explaining age differences in socioemotional motives. Older adults, who tend to perceive their time as limited, focus on and prioritize positive emotion and social cohesion, whereas younger adults, who tend to perceive their time as expansive and prioritize learning (Carstensen, 2006). Indeed, the goals seem to motivate selective pruning of social networks during older adulthood, as social ties that evoke negative emotions are not maintained, while relationships that are sources of positive emotion are prioritized (English & Carstensen, 2014). Thus, perceiving time as limited leads to prioritization of affiliative motives that promote shared reality. Indeed, manipulating participants to perceive time as limited increases social tuning of attitudes (DeWall, Visser, & Levitan, 2006), underscoring that temporal perception influences the strength of shared reality motives. Thus, in the present study, we predicted that social network disagreement would exert the strongest negative impact on self-concept clarity when network ties were densely interconnected, but only among participants who perceived time as limited, and thus had heightened social

motives for shared reality—that is, we predicted a three-way network disagreement $\times$ network density $\times$ social motives interaction.

Finally, in addition to exploring additional moderators of the basic effect, Study 3 examined the downstream consequences of network composition for three distinct facets of well-being. Given that self-concept clarity is frequently positively associated with well-being (Light, 2017), we hypothesized that participants who disagreed with their network members would report poorer well-being than individuals whose attitudes aligned with their network members, to the extent that disagreeing with the social network decreases self-concept clarity. That is, if indeed self-concept clarity is being affected by network disagreement as we hypothesize, then we should observe consequences for the kinds of well-being variables that are typically associated with self-concept clarity. Thus, in Study 3, we measured self-reports of well-being, including the overall quality of life, individuals' perceived stress, and their physical health.

Method

Participants

A nationally-representative sample of 1,738 adults from the United States was recruited by Knowledge Networks. Sample size was determined by available funding for participant recruitment. Participants were initially recruited through random-digit dialing, drawing on both listed and unlisted numbers, and internet access was provided to those who did not already have it, allowing them to complete the survey online. Of these participants, 1,219 (597 female) completed the questions related to social network attitudes and self-concept clarity, and are included in the current analyses². Ages ranged from 18 to 93 years (mean age = 50.17 years). Sensitivity analyses indicate that the sample size is large enough to detect effect sizes of $f >$

² Participants who were excluded from analyses either elected to not answer the relevant questions after being requested for a response from the survey collection system, or dropped out of the survey prior to that point.

.011 with power = .95.

Measures

Network composition. Participants listed up to five people with whom they had discussed matters of importance in the past six months. Participants listed an average of 4.11 names ($SD = 1.27$)³. As in Study 2, for each of these network members, participants reported how different the network member's views on the death penalty were from their own on a five-point, fully-labeled scale from *Not different at all* to *Extremely different*. Responses were recoded on a scale from 0 to 1 to facilitate interpretation of regression coefficients, and for each participant, a composite measure of disagreement within his or her social network was created by averaging disagreement across network members ($M = .22$, $SD = .18$).

Social network density. For each possible pair of network members, participants were asked to indicate how close the two people were on a six-point, fully-labeled scale from *Total strangers* to *Extremely close*. Responses were recoded to range from 0 to 1 and were averaged across all possible pairs of network members to create an index of network density such that higher numbers indicated more relationships among social network members. Density was coded as "0" for participants who named only one network member ($M = .42$, $SD = .22$).

Temporal perception. Participants responded to three items adapted from the Future Time Perspective Scale (Carstensen & Lang, 1996): "When you think about your future, how many new opportunities do you feel you will have?", "How much time do you feel is left in your life?" and "How often do you feel as if time is running out in your life?" on a five-point fully-labeled scale. Item one was anchored from *None* to *A great many*, while item two was anchored from *None* to *A great deal*, and item three was anchored from *Never* to *Always*. Item three was

³ 126 participants (7.8%) did not name any social network members with whom they had discussed matters of importance in the past six months. These participants were excluded from subsequent analyses.

reverse-coded and all items were recoded to range from 0 to 1 and were averaged to create an index of temporal perception such that lower numbers indicated perceiving time as limited, while higher numbers indicated perceiving time as expansive ($\alpha = .66$; $M = .63$, $SD = .19$).

Self-concept clarity. To reduce the length of the overall survey and minimize participant fatigue, participants in the present study completed a shortened version of the Self-Concept Clarity Scale. Participants completed two items from the SCCS, selected to reflect general clarity and stability of self-beliefs, respectively (“If you were to describe your personality, how much would your description change from day to day?” and “How clear is your sense of who you are?”, $\alpha = .41^4$). Responses were rescaled from 0 to 1 (reverse-coded where appropriate) and averaged to create an index of self-concept clarity ($M = .77$, $SD = .17^5$).

Subjective well-being. Participants completed a one-item measure of subjective well-being in which they rated the overall quality of their lives. Responses were recoded from 0 to 1 ($M = .74$, $SD = .20$).

Perceived stress. Participants completed two items from the Perceived Stress Scale (Cohen, et al., 1983): indicating how often in the past month they felt that they could not control the important things in their lives and how often they felt that their problems were getting so big they could not overcome them. Responses were recoded from 0 to 1, and averaged to create an index of perceived stress ($\alpha = .76$; $M = .24$, $SD = .23$).

Self-reported health. Participants rated their physical health on a five-point fully-labeled scale from *very poor* to *excellent*, with higher numbers indicating better health (e.g., Kaplan & Camacho, 1983). Responses were recoded from 0 to 1 ($M = .70$, $SD = .20$).

⁴ These two items were selected to reflect divergent aspects of the Self-Concept Clarity Scale, which likely explains their low correlation. Analyses were also conducted in which the two items were considered as separate measures of self-concept clarity, and results were consistent with those using the composite index.

⁵ For ease of interpretation, self-concept clarity values have been converted to range from 1-5 for all figures.

Results

Primary Analyses: Social Network Composition and Self-concept clarity

Replicating the results of Study 2, network disagreement was a significant negative predictor of self-concept clarity ($r(1219) = -.12, p < .001$)⁶. We next explored whether the relationship was moderated by social network density and strength of social motives (i.e., temporal orientation) using PROCESS Model 3 to explore the three-way interaction. This analysis revealed a significant main effect of temporal perception ($B = .26, SE = .07, t(1211) = 4.02, p = .001, 95\% \text{ CI: } (.12, .39), \eta_p^2 = .013$) such that participants who perceived time as more expansive reported higher self-concept clarity. The analysis also revealed a significant two-way interaction between network disagreement and temporal perception ($B = -.94, SE = .29, t(1211) = -3.19, p = .002, 95\% \text{ CI: } (-1.53, -.36), \eta_p^2 = .008$). These relationships were qualified by a significant three-way network disagreement $\times$ network density $\times$ temporal orientation interaction ($B = 1.37, SE = .47, t(1211) = 2.95, p = .003, 95\% \text{ CI: } (.46, 2.29), \eta_p^2 = .007$; see Figure 4).

⁶ Both the main effect of network disagreement on self-concept clarity, and the indirect effects of network disagreement on all well-being variables mediated by self-concept clarity remain significant when controlling for age, age-squared, gender, race/ethnicity, education, household income, employment status, social network size, social network density, frequency of contact with social network members, and closeness to social network members.

Figure 4. Study 3: Self-concept clarity as a function of network disagreement, network density, and social motives. Values are plotted at +1 SD/-1SD for each variable. The slope for high network density/high social motives is significantly negative. All other slopes are not significantly different from zero.

Follow-up analyses indicated that the network disagreement $\times$ social motives interaction was

significant when network density was high (+1 SD; interaction: $B = .61$, $F(1, 1211) = 10.42$, $p =$

.001, $\eta_p^2 = .008$), but not when network density was re-centered at 1 SD below the mean (interaction: $B = .15$, $F(1, 1211) = .15$, $p = .70$, $\eta_p^2 = .000$). In other words, the network disagreement $\times$ density interaction was significant among participants who perceived time as limited (i.e., were high in social motives), but not among participants who perceived time as expansive (i.e., were low in social motives).

Specifically, focusing on participants embedded in highly dense networks (i.e., +1 SD for network density), network disagreement was associated with lower self-concept clarity when participants perceived time as limited ($B = -.24$, $SE = .050$, $t(1211) = -4.71$, $p < .0001$, 95% CI: $(-.33, -.14)$, $\eta_p^2 = .018$), but the effect was non-significant when time was perceived as expansive ($B = -.007$, $SE = .048$, $t(1211) = -.15$, $p = .88$, 95% CI: $(-.10, .09)$, $\eta_p^2 = .000$). Thus, as predicted, network disagreement had the strongest associations with self-concept clarity when (a) network density was high, and (b) social motives were high.

Secondary Analyses: Downstream Consequences of Low Self-Concept Clarity

As expected, disagreement within participants' social networks was significantly negatively associated with subjective well-being ($r(1221) = -.079$, $p = .006$) and physical health ($r(1214) = -.11$, $p < .001$), and positively associated with perceived stress ($r(1221) = .080$, $p = .005$). We expected these relationships to be, at least partly, a function of social network composition's impact on global self-concept clarity. To test these meditational hypotheses, we added self-concept clarity as an additional predictor in each of these regression equations. In each case, adding self-concept clarity to the equation substantially reduced (in the case of self-reported health) or eliminated (in the case of subjective well-being and perceived stress) the relationship between social network disagreement and each facet of well-being (subjective well-being: $\beta = -.046$, $t(1216) = 1.67$, $p = .10$, $\eta_p^2 = .002$; physical health: $\beta = -.087$,

$t(1209) = 3.10, p = .002, \eta_p^2 = .008$; and perceived stress: $\beta = .039, t(1216) = 1.46, p = .15, \eta_p^2 = .002$). Mediation analyses using PROCESS model 4 (Hayes, 2013) with 5,000 bootstrap resamples confirmed that self-concept clarity was a significant indirect pathway for the effects of social network disagreement on subjective well-being ($B = -.037, SE = .011$, bootstrapped 95% CI: $(-.060, -.018)$, $\kappa^2 = .037$), perceived stress ($B = .051, SE = .014$, bootstrapped 95% CI: $(.025, .079)$, $\kappa^2 = .044$), and physical health ($B = -.029, SE = .009$, bootstrapped 95% CI: $(-.048, -.014)$, $\kappa^2 = .026$)

Discussion

The results of Study 3 replicate the findings of Studies 1 and 2, again showing a negative relationship between disagreement with social network members and self-concept clarity. As predicted, this relationship was strongest when social costs for holding discrepant attitudes were high (i.e., networks were highly dense) and when social motives were high (i.e., when time was perceived as limited). By exploring time perception as a factor that increases the strength of social motives, we replicated the interaction observed in Study 2 with a novel operationalization of social motive strength. Additionally, we predicted and found evidence that the relationship between network attitudinal composition and global self-concept clarity were sufficiently strong and impactful to predict downstream consequences for well-being. Participants who disagreed with their social networks to a greater extent reported lower subjective well-being, increased stress, and poorer health relative to participants in relatively homogenous social networks. These effects were either partially mediated (in the case of physical health) or fully mediated (in the case of subjective well-being and perceived stress) by self-concept clarity.

Disagreement vs. Diversity. Studies 1-3 demonstrate a consistent relationship between network attitudes and self-concept clarity when shared reality motives are heightened. However,

the operationalizations used have the potential to confound two related but distinguishable variables—the level of disagreement experienced with network members, and the diversity of attitudes held by social network members. Indeed, the method of measuring social network attitudes used in studies 2 and 3 has been characterized as “attitudinal diversity” by some authors (e.g., Visser & Mirabile, 2004), and as “disagreement” by others (Ekstrom et al., 2019; Huckfeldt, Mendez, & Osborn, 2004). One reason for this lack of clarity regarding the construct is that disagreement and diversity are predicted to be highly correlated. Given that most individual’s beliefs likely align with those of their social network members, we would expect very few people to disagree with all members of their social network. Thus, there are likely to be more individuals who disagree with a few network members but agree with others (i.e., high disagreement and high diversity) than individuals whose network members by consensus share beliefs that are highly discrepant from that of the target participant (i.e., high disagreement and low diversity).

Despite their similarity, the two constructs could be operationalized independently—disagreement as the average difference between network members’ attitudes and the participant’s attitude, and diversity as the standard deviation of social network members’ attitudes. Moreover, the two constructs speak to slightly different mechanisms by which social network attitudes may threaten shared reality. The presence of disagreement with social network members raises the possibility that the individual’s attitude may be “incorrect,” thereby threatening epistemic motives. But a lack of consensus on the issue among network members may suggest that there is not a “correct” attitude to hold. The former might threaten epistemic motives by suggesting that the individual has misjudged an important topic, and may have incorrect and potentially maladaptive ways of interpreting the world. The latter suggests that attempts to create meaning

may ultimately be futile. While both have the potential to impact the self-concept, we argue that the former is likely to more directly impact self-concept clarity, as questions about one's judgment call into question judgments about oneself.

Study 4

Building on the experimental effects of Study 1, Studies 2 and 3 replicated the relationship between network disagreement and self-concept clarity in large, nationally-representative samples, indicating that the effect is robust to participant demographics. However, the method used to assess social network attitudes—asking participants to report on the level of disagreement with each network member—has the potential to confound disagreement with network members with the diversity of attitudes held by social network members. In Study 4, we seek to address this possible confound by independently measuring disagreement with social network members and network attitudinally diversity, and assessing the unique contribution of each variable.

Method

Pre-registration materials for this study are available at

https://osf.io/4qrb6/?view_only=3af63553492644b4877d15ef558ff78d

Participants

A sample of 604 adults from the United States was recruited using Amazon's Mechanical Turk. Sample size was determined using a pilot test that estimated an effect size of $R^2 = .05$ for the effect of interest. A power analysis indicated that a sample size of at least $N = 293$ would be necessary to obtain a power of .95 for the analyses in question. To ensure sufficient power, even when excluding participants for failed attention checks, we elected to recruit a sample of $N = 600$. A total of 604 participants completed all measures relevant to the present analyses. Of these,

44 participants (7.3% of respondents) incorrectly responded to an attention check and were excluded from analysis. An additional 8 participants (1.3% of respondents) were excluded due to IP addresses that indicated they were not in the US, or for failing to follow directions (e.g., writing random words or names of celebrities when asked to name social network members.) With all exclusions, the final sample size was $N = 552$ (284 female; 3 declined to report their gender). Ages ranged from 18 to 88 ($M = 37.82$, $SD = 11.90$.)

Social network enumeration. Participants listed up to five people with whom they talked on a regular basis about important matters. Participants listed an average of 4.76 network members ($SD = .75$).

Social network attitudes. Participants reported their own attitude, and the attitudes of their network members, towards two different issues—stricter gun control laws, and beliefs about climate change. For the issue of gun control, participants were asked to indicate their attitudes and the attitudes of each network member towards stricter gun control on a seven-point, fully-labeled scale from *Strongly oppose* to *Strongly favor*. For the issue of climate change, participants were asked to report their beliefs and the beliefs of each network member about climate change on a seven-point, fully-labeled scale from *Strongly believes global warming is not happening* to *Strongly believes global warming is happening*.

Social network disagreement. Social network disagreement was calculated by first calculating the level of disagreement with each social network member. We did so by taking the absolute value of the difference between each network member's attitude and the participants' own attitude. Then we calculated social network disagreement for each issue as the average difference between each network member's attitude and the participant's attitude. Mean disagreement for gun control was 1.35 ($SD = 1.17$), and for climate change was 1.21 ($SD = 1.14$)

Modal disagreement for each issue was 0, indicating that while most participants tended to agree with their social network members, some individuals' social networks were heterogeneous with respect to the issues in question.

Social network diversity. Social network diversity was calculated as the standard deviation of social network member's attitudes (excluding the participant's own attitude.) Mean diversity for gun control was 1.17 ($SD = .80$), and for climate change was .97 ($SD = .75$). Modal diversity was 0 for both attitude issues, again indicating that most social networks were relatively polarized with respect to the attitude issues, but that some did represent a greater diversity of attitudes.

Self-concept clarity. Participants responded to the full 12-item Self-Concept Clarity Scale (Campbell et al., 1996) on a five-point, fully-labeled scale from *Strongly disagree* to *Strongly agree* ($M = 3.5$, $SD = 1.00$).

Need to belong. Participants responded to the full 10-item Need to Belong Scale (Leary et al., 2013) on a seven-point, fully-labeled scale from *Strongly disagree* to *Strongly agree* ($M = 3.99$, $SD = 1.13$).

Personal need for structure. Participants responded to the full 12-item Personal Needs for Structure Scale (Neuberg & Newsom, 1993) on a six-point, fully-labeled scale from *Strongly disagree* to *Strongly agree* ($M = 4.01$, $SD = .81$).

Results

To assess the network disagreement and diversity as predictors of self-concept clarity, we first examined the correlations of all variables⁷. As shown in Table 1, network disagreement on both attitude issues was significantly negatively correlated with self-concept clarity. Network

⁷ One-tailed tests were used for all pre-registered hypotheses.

diversity on climate change was significantly negatively correlated with self-concept clarity, but not on gun control. Thus, network disagreement more consistently predicted self-concept clarity.

Table 1

Correlations between self-concept clarity, network disagreement, and network diversity

	Self-Concept Clarity	Gun Control Disagreement	Climate Change Disagreement	Gun Control Diversity
Gun Control Disagreement	-.085*			
Climate Change Disagreement	-.14***	.40***		
Gun Control Diversity	-.021	.51***	.25***	
Climate Change Diversity	-.12***	.35***	.45***	.45***

Note. * $p < .05$, ** $p < .01$, *** $p < .005$.

Following up on these analyses, we directly compared the role of disagreement and diversity in predicting self-concept clarity by including both as predictors in a multiple regression. We performed separate analyses for gun control and climate change. For the issue of gun control, network disagreement continued to significantly predict self-concept clarity ($\beta = -.10$, $t(541) = 2.06$, $p = .02$), while network diversity was not a significant predictor ($\beta = .03$, $t(541) = .61$, $p = .73$). Similarly, for the issue of climate change, network disagreement remained a significant predictor of self-concept clarity ($\beta = -.10$, $t(542) = 2.12$, $p = .018$), while network diversity was only marginally significant ($\beta = -.08$, $t(542) = 1.57$, $p = .059$).

We next turned to interactions with belonging needs. We calculated two independent regression models, one for each attitude issue, predicting self-concept clarity as a function of network disagreement, network diversity, belonging needs, and the two-way interaction terms for network disagreement $\times$ belonging needs and network diversity $\times$ belonging needs. For the issue

of gun control, this identified a significant network disagreement $\times$ belonging interaction ($B = -.088$, $SE = .040$, $t(539) = 2.22$, $p = .013$, $\eta_p^2 = .008$). A Johnson-Neyman analysis indicated that the predictive value of network disagreement was significantly negative when belonging needs were .32 standard deviations below the mean or higher—in other words, the relationship between network disagreement and self-concept clarity was negative for all participants, except those with low need to belong (see Figure 5, top panel).

Figure 5. Study 4: Self-concept clarity as a function of network disagreement and belonging needs for gun control and climate change attitude issues. Values are plotted at +1SD/-1SD for each variable, with network diversity held at the mean.

By contrast, the diversity $\times$ belonging needs interaction was not significant⁸ ($B = .095$, $SE = .052$, $t(539) = 1.83$, $p = .97$, $\eta_p^2 = .006$).

For the issue of climate change, there was a marginal network disagreement $\times$ belonging needs interaction ($B = -.064$, $SE = .040$, $t(540) = 1.61$, $p = .054$, $\eta_p^2 = .006$). A Johnson-Neyman analysis indicated that the relationship between network disagreement and self-concept clarity was significantly negative when belonging needs were .09 standard deviations above the mean or higher—in other words, the relationship was significantly negative for participants with moderate to high levels of belonging needs, but not significant among participants with low belonging needs (see Figure 5, bottom panel). By contrast, the network diversity $\times$ belonging needs interaction was not significant ($B = .046$, $SE = .051$, $t(540) = .91$, $p = .82$, $\eta_p^2 = .002$).

We repeated this same process to assess for interactions with need for structure. For the issue of gun control, the network disagreement $\times$ need for structure interaction was not significant ($B = -.014$, $SE = .060$, $t(539) = .23$, $p = .41$, $\eta_p^2 = .000$), and neither was the network diversity $\times$ need for structure interaction ($B = -.042$, $SE = .082$, $t(539) = .52$, $p = .30$, $\eta_p^2 = .000$). Similarly, for the issue of climate change, the network disagreement $\times$ need for structure interaction was not significant ($B = -.037$, $SE = .055$, $t(540) = .68$, $p = .25$, $\eta_p^2 = .001$), and neither was the network diversity $\times$ need for structure interaction ($B = .078$, $SE = .072$, $t(540) = 1.08$, $p = .86$, $\eta_p^2 = .002$).

Exploratory analyses. Notably, we did not observe a significant two-way network disagreement by need for structure interaction. An explanation is suggested by Echterhoff and

⁸ Our pre-registration plan specified one-tailed tests for our directional hypotheses. We hypothesized a negative effect of network diversity that increased in magnitude with increasing belonging needs, while actual results indicated an interaction in the opposite direction (higher belonging needs attenuated the effects of network diversity). Thus the reported p -value may appear discrepant from the reported t -value, as it is based on a one-tailed test predicting the opposite pattern of effects.

colleagues (2017), who found that audience tuning in order to achieve shared reality was heightened when the audience for a message represented several individuals with a consensus opinion. They argued that consensus increases the epistemic authority of an audience's opinion, thereby increasing the motive to share reality. Among our participants who held discrepant opinions from their social network members, the social network members themselves may have greater or lesser degrees of consensus, thereby influencing their epistemic authority. To test this hypothesis, we use regression to assess the three-way network disagreement $\times$ need for structure $\times$ network diversity interaction. For the issue of gun control, this analysis yielded a significant three-way interaction ($B = .13$, $SE = .053$, $t(537) = 2.34$, $p = .019^9$, $\eta_p^2 = .010$; see Figure 6) such that the network disagreement $\times$ need for structure interaction was significant when network diversity was low (1.39 SDs below the mean).

⁹ All exploratory analyses used two-tailed tests.

Figure 6. Study 4: Self-concept clarity as a function of network disagreement, network diversity, and need for structure for gun control attitude issue. Values are plotted at +1SD/-1SD for each variable.

When network diversity was re-centered one standard deviation below the mean, the relationship between network disagreement and self-concept clarity was significantly negative when need for structure was high ($B = -.21$, $SE = .084$, $t(537) = 2.60$, $p = .010$), but was non-significant when need for structure was low ($B = .005$, $SE = .075$, $t(537) = .06$, $p = .95$).

Similarly, for the issue of climate change, the three-way network disagreement $\times$ need for structure $\times$ network diversity interaction was marginally significant ($B = .095$, $SE = .054$, $t(538) = 1.77$, $p = .077$, $\eta_p^2 = .006$; see Figure 7).

Figure 7. Study 4: Self-concept clarity as a function of network disagreement, network diversity, and need for structure for climate change attitude issue. Values are plotted at +1SD/-1SD for each variable.

The two-way network disagreement $\times$ need for structure interaction approached significance when network diversity was zero (in other words, when network members had

complete consensus ($B = -.13$, $SE = .07$, $t(538) = 1.82$, $p = .069$). Among participants with low network diversity, network disagreement was significantly negatively predictive of self-concept clarity when need for structure was high ($B = -.22$, $SE = .076$, $t(538) = 2.91$, $p = .004$), but non-significant when need for structure was low ($B = -.05$, $SE = .065$, $t(538) = .75$, $p = .46$). Thus, moderation by epistemic motives was evident when the epistemic authority of network members was higher due to their consensus on the issue in question.

Discussion

Across analyses and attitude issues, network disagreement consistently predicted self-concept clarity. By contrast, controlling for disagreement, network diversity inconsistently predicted self-concept clarity. Moreover, while network disagreement revealed the predicted interactions with belonging needs, the network diversity $\times$ belonging interactions were in the opposite direction as hypothesized. Thus Study 4 implicates network disagreement, not network diversity, as the crucial variable impacting self-concept clarity.

General Discussion

These studies provide evidence consistent with the claim that social environments that make achieving shared reality difficult or impossible have negative consequences for the self-concept. Moreover, these studies highlight the role of motives underlying the drive to achieve shared reality. In Study 1, participants high in epistemic motives—operationalized as dispositional personal need for structure—reported feeling less clear and certain about themselves after considering points of controversy among their social network members than after calling to mind points of consensus. In Study 2, we used a large, nationally-representative sample to demonstrate that people who have higher levels of disagreement with their social networks reported lower self-concept clarity and that this association was again moderated by

individual differences in both epistemic (need for structure) and relational (need to belong) motives. In Study 3, we again replicated the association between network disagreement and self-concept clarity in a second nationally-representative sample and explored the role of other network features like the density of ties. We explored associations with downstream consequences of low self-concept clarity, showing that heterogeneous social networks had indirect consequences for self-reported health and well-being. Finally, in Study 4, we clarified that these effects are primarily driven by the experience of disagreeing with social network members, rather than the diversity of attitudes represented in the social network.

The novel contributions of this research are multiple. First, to our knowledge, this is one of the first explorations of shared reality outside of dyadic relationships, or communication to groups made up of members with uniform opinions (Higgins et al., 2007). While dyads in the form of pair-bonded relationships hold a special place in human attachment (Fletcher et al., 2015), and thus may exert unique influence on motivation and cognition, human social cognition evolved in the context of small groups, and thus social influence processes must be explored within broader networks of relationships in order for social cognition to be fully understood (Caporael, 1997). Disagreement with a single audience may impact the attitude itself, but repeated disagreement with multiple significant others may lead to more global impacts on the self.

Moreover, exploring social networks rather than dyadic relationships allowed us to explore how network structural features moderated the effects of disagreement on self-concept clarity. In Study 3, we found that social network density moderated the extent to which disagreeing with social network members predicted self-concept clarity, but only among participants with heightened affiliative motives. In Study 4, we directly compared the impacts of

network disagreement and network diversity, finding that disagreement consistently predicted lower self-concept clarity while diversity did not. Interestingly, exploratory analyses suggested that the two dimensions of social network attitudes may moderate one another. Exploratory analyses suggested that greater diversity among social network members may actually reduce the extent to which disagreement threatens epistemic motives. Although previously unexplored, this is consistent with Echterhoff and colleagues (2017) contention that consensus increases the epistemic credibility of others' beliefs. If social network members do not agree with one another, this suggests that any one of them may be incorrect in their beliefs, thus reducing the epistemic threat posed by disagreeing with them. However, if social network members have a consensus in terms of their attitudes—that is, if the diversity of attitudes they hold is low—this increases their credibility as having the “correct” attitude, thereby increasing the epistemic threat to the target participant for disagreeing with them. Notably, these analyses were exploratory and should be confirmed in additional studies, but they highlight the benefits of exploring shared reality in social networks more generally.

In addition to broadening the relational context of shared reality, we explored the mechanism of these effects by identifying motives thought to underlie shared reality striving as crucial to the observed effects. In Studies 1 and 2, only participants high in epistemic motives showed negative consequences of failing to achieve shared reality; in Studies 2 and 4, the effects on self-concept clarity were strongest among participants high in relational motives. And in Study 3, network disagreement was most strongly associated with self-concept clarity when social motives were high (as indexed by perception of time as limited) and social costs for inconsistent attitude expression were high (i.e., when social networks were dense). While all four studies identified negative associations between network disagreement and self-concept clarity

when shared reality motives were high, Study 1 also found a reversal of this effect among people low in Personal Need for Structure. This reversal was not hypothesized and was not replicated in the larger, more representative sample in Study 2, suggesting that the effect may not be robust. However, it is possible that while holding distinct attitudes from network members threatens epistemic and shared reality motives, doing so may simultaneously fulfill other motives (a point we will return to), leading to positive consequences for people whose epistemic and social motives are either satiated or dispositionally weak.

In addition to exploring novel contexts and consequences of motives to share reality, the present research also contributes to our understanding of how the self is impacted by interpersonal relationships. Previous research has demonstrated that dyadic relationships can impact the content of the self-concept (Aron et al., 1991), evaluations of the self (Baldwin, Carrell, & Lopez, 1990), and self-concept clarity (Slotter, Gardner, & Finkel, 2010; Luchies et al., 2010; Emery et al., 2018). However, relatively little research has explored how *social networks* influence the self-concept (cf. Walker & Lynn, 2013; McFarland & Pals, 2005). The present research suggests that attention to the network-level of analysis is necessary to understand the effects of individual relationship partners on the self-concept—emergent properties of the social network can impact the self-concept over and above the influence of the dyadic relationships that make up the network.

Notably, we present this research amidst the background of a society that is increasingly politically polarized (Pew Research Center, 2017), characterized both by greater discrepancies between social attitudes of members of different political parties, and greater animosity toward members of opposing political parties. While studies over the past few decades consistently show that many people do maintain social connections with people with different attitudes and

ideologies, there is some indication that motivation to avoid people with discrepant views is increasing. The present research could help explain the motives underlying such ideological homophily—having connections to people with different views makes it more difficult to achieve shared reality with network members, which reduces self-concept clarity, and subsequently, diminishes well-being. This suggests that the motives underlying shared reality—the desire for epistemic certainty and relational security—may predict avoidance of people with differing political ideologies, and that experiences that activate or threaten these motives will increase this avoidance. However, this suggests an opportunity to reduce partisan avoidance by affirming these motives. Future research should explore the role of such affirmations in increasing willingness to connect with members of opposing ideological groups.

An open question is why individuals do not shift their attitudes to reduce discrepancy with network members. In response to this question, we first note that individuals can hold the average attitude among their social network members—thereby minimizing differences between them and their network members—and still experience substantial disagreement with network members to the extent that network members hold a diversity of attitudes. Moreover, there is a variety of reasons that individuals hold the attitudes they do apart from their experience of social influence (Maio & Olson, 1994). Individuals may maintain a discrepant attitude because it serves value-expressive functions that outweigh the costs of a shared reality. Future research should investigate the role of attitude functions in potentially mitigating downstream consequences to health and well-being.

Moreover, while shared reality may motivate people to avoid contact with attitudinal outgroup members, other motives push people to seek out such connections. For example, the motives for self-expansion—to extend the content of the self by forming relationships with

dissimilar others—motivates people to seek out connections with people from different ethnic and cultural groups (Dys-Steenbergen, Wright, & Aron, 2016; Paolini et al., 2016). Self-expansion motives may similarly motivate people to form connections with people who hold diverse attitudes, though notably self-expansion motives are reduced when self-concept clarity is low (Emery, Walsh, & Slotter, 2015). Thus, opposing self-expansion and self-clarity motives may lead to an equilibrium in levels of disagreement with network members—self-expansion promotes increased contact with attitudinal outgroup members, until the point that shared reality is threatened and self-concept clarity is reduced, thus reducing the motives to form new connections with people with discrepant attitudes.

Future research might also explore how features of the attitude issue itself moderate the effects of network disagreement on self-concept clarity. It may be more crucial for individuals to achieve shared reality on some issues than others—for example, issues that affect one's current goals and decisions. For example, a parent may be more concerned than a non-parent about achieving shared reality on the issue of the benefits of charter schools, because the parent may be facing the decision of what kind of school would be best for their children, and desire epistemic certainty about that decision. Similarly, attitudes that are sources of personal identity (Zunick, Teeny, & Fazio, 2017) may heighten shared reality motives. Identification with an attitude may heighten epistemic motives for shared reality, as it may be particularly threatening to contemplate being incorrect about an attitude that serves as a basis for identity. But self-defining attitudes may also heighten social motives for achieving shared reality, as rejection of one's position attitude might be experienced as personal rejection.

Limitations

The present studies are not without their limitations. First, although we observed

significant associations between network disagreement and self-concept clarity across studies, the effect sizes observed were relatively small, potentially raising questions about the practical impact of these effects. We argue that these modest effects sizes do not mean these results are not important. In general, the present four studies include relatively subtle or limited operationalizations of threats to shared reality, and thus modest effect sizes are to be expected (Prentice & Miller, 1992). Crucially, the method of each study allows for only a small snapshot of the heterogeneity of an individual's social network. Study 2 asked participants about general political beliefs, Study 3 asked about attitudes toward capital punishment, and Study 4 asked about the issues of gun control and climate change. In addition to variation on these issues, the individual's social network may reflect consensus or controversy on a broad range of other issues. A multidimensional assessment of social network disagreement might reveal stronger impacts on self-concept clarity.

In addition, while the experiment in Study 1 demonstrated a causal impact of perceptions of network disagreement on self-concept clarity, Studies 2-4 were correlational. As such, we cannot confirm the causal chain by which network disagreement impacts health and well-being as mediated by self-concept clarity. While longitudinal evidence suggests that self-concept clarity predicts later well-being (Richman et al., 2016; Shin, Steger, & Henry, 2016), other evidence suggests that the relationship is reciprocal (van Dijk et al., 2014). Thus, longitudinal or experimental evidence is needed to bolster the mediational pathways explored in Study 3.

Conclusion

The present research highlights one of the challenges of social connections that bridge attitudinal divides. While there may be benefits of having social ties to people with discrepant attitudes, such cross-cutting connections also threaten core motives underpinning shared reality.

This research reveals these challenges and underscores the importance of considering the impact of relationships beyond dyadic arrangements in understanding the dynamics of shared reality.

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Appendix A

Social Network Homophily Scale from Study 1

Take a moment to think about your friends, family members, co-workers, and neighbors-- the people in your life who make up your daily social network.

Please describe the members of your social network using the items below. Make a mark that indicates where your social network falls in relation to the descriptions on either side-- a mark more towards the left indicates that you think the statement on the left better describes your social network, while a mark towards the right indicate that you think the statement on the right better describes your social network.

Are different from one another--- --- --- --- ---Are similar to one another

Think like each other--- --- --- --- ---Do not think like each other

Behave like each other--- --- --- --- ---Do not behave like each other

Believe similar things--- --- --- --- ---Believe different things

Think similar things are important--- --- --- --- ---Think different things are important

Appendix B

Social Network Disagreement Manipulation from Study 1

High Disagreement condition

People's social networks can differ in terms of how they feel about various political and social issues. Among some groups of people, certain issues are seen as very straight-forward, and there is a lot of consensus about the right opinion to hold. Other groups can view issues as very controversial, where there are a lot of different opinions about the right answer.

Take a moment to think about the people who make up your social network—your friends, family members, co-workers, and neighbors. What is an issue that is very controversial among your social network, where people hold a variety of different opinions?

Please list the first name or initials of two people in your social network who disagree with each other about this issue:

Low Disagreement condition

People's social networks can differ in terms of how they feel about various political and social issues. Among some groups of people, certain issues are very controversial, where there are a lot of different opinions about the right answer. Among other groups of people, other issues are seen as very straight-forward, and there is a lot of consensus about the right opinion to hold.

Take a moment to think about the people who make up your social network—your friends, family members, co-workers, and neighbors. What is an issue on which

there is a lot of consensus among your social network, where people tend to hold very similar opinions?

Please list the first name or initials of two people in your social network who agree with each other about this issue: