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Just you and I: The role of social exclusion in the formation of interpersonal relationships

Developing and maintaining interpersonal relationships represent a central goal in the lives of most people. A recent large-scale study by Mar, Mason, and Litvack (2012) indicated that 73.2% of the 17,000 + people surveyed reported that 'other people' dominate their thoughts when their minds are free to wander. Likely because of the vital importance that others play in our mental lives, both our emotional and physical well-being are jeopardized when we experience threats to optimal levels of social acceptance. Indeed, individuals who experience social rejection or exclusion suffer from a variety of cognitive, affective, and somatic ill-effects (Baumeister, De Wall, Ciarocco, & Twenge, 2005; Pickett, Gardner, & Knowles, 2004; Zadro, Williams, & Richardson, 2005).

Despite the importance of close relationships and the social interaction they provide, instances of social exclusion, or ostracism, are common. Recent research has established the profoundly negative emotional impact of ostracism on its targets (Eisenberger, Lieberman, & Williams, 2003; Williams, 2007; Baumeister & Leary, 1995), as well as on its sources (Ciarocco, Sommer, & Baumeister, 2001; Legate, De Haan, Weinstein, & Ryan, 2013; Poulson & Kashy, 2011; see Zadro & Gonsalkorale, 2014 for a review). Less understood are the cognitive im- plications of exclusion and, in particular, its impact on how interpersonal relationships are experienced and perceived. How do acts of social exclusion affect our perceptions of our own and other relationships?

Initial insight into this question derives from research by Wyer (2008) suggesting that social exclusion is a cue to the quality of others' social relationships. In that research, participants observed relationships which did or did not actively exclude others. Perceiving social exclusion had a number of consequences. First, two individuals who excluded others were judged to be closer and more similar to each other. Second, using a memory confusion paradigm, Wyer (2008) established that mental representations of relationship partners who engaged in exclusion were assimilated in memory (i.e., perceivers processed information about them in a similar way), whilst they were contrasted from the individuals who they had excluded (i.e., perceivers processed information about them in ways that differentiated them to a greater extent). Thus, observing social exclusion in a relationship impacts how that relationship is represented in memory. Importantly, to the extent that one's representations of two people are assimilated, one may be likely to generalize judgments, emotions and behav-iors triggered by one relationship partner onto the other (e.g., Kang, Hirsh, & Chasteen, 2010; Lickel, Miller, Stenstrom, Denson, & Schmader, 2006).

An intriguing question emerging from this research is whether exclusion might also be used as a cue or signal by perceivers within a relationship. If so, social exclusion may establish or advertise a relationship's level of closeness — both to the other person in the relationship and to outsiders. At an intragroup level, Pickett and Brewer (2004) suggest that the exclusion of marginal group members may enhance one's sense of belonging or inclusion in a group. Other research (e.g., Feinberg, Willer, & Schultz, 2014; Kim, 2014) has described ostracism as a critical feature in the development of groups. This view is compatible with Kurzban and Leary's (2001) evolutionary analysis of the adaptive utility of social exclusion in the establishment of coalitions. They suggest that groups form for purposes of within-group cooperation and out-group exploitation, thus one function of social exclusion is to ensure that one's social group is not infiltrated by outsiders which would dilute the availability of its resources. In sum, there are converging sources of theoretical and empirical evidence that so-cial exclusion has benefits for within-group cohesion (albeit through different proposed mechanisms).

The research by Wyer (2008) raises the possibility that a similar out- come may occur at the interpersonal level — i.e., excluding others may enhance one's sense of belonging or inclusion in a dyadic relationship and, relatedly, may be a signal to others that the relationship is a close one. The study reported here investigated this question by bringing to- gether three previously unacquainted individuals and creating an episode of social exclusion or inclusion. We then assessed the effects of exclusion on a number of measures, including self-reported perceptions of each dyadic relationship within the group. We also collected a memory confusion measure designed to assess the likelihood that responses associated with each member of the group would be misattributed to one of the others. Past research (Wyer, 2008; Mashek, Aron, & Boncimino, 2003; Sedikides, Olsen, & Reis, 1993) suggests that conditions that foster the perception of closer relation- ships also promote greater memory confusions (i.e., misattributing responses associated with one relationship partner to the other part- ner). In our paradigm, we seek to determine whether exclusion not only influences perceived relationship closeness but also leads to assimilation or contrast of self and other representations as assessed by a memory confusion measure.

Method

1.1 Participants

Participants included 141 undergraduate students at a large university in Southwest England who were tested in same-sex groups of three in exchange for course credit or a payment of £6 (approximately $9.50). Data from seven sessions (N = 21) were excluded because participants did not comply with exclusion instructions. Thus the final dataset com- prised of 120 participants (90 female, Mage = 19.7 years).[1] The number of sessions (and hence participants) was decided a priori based on the sample sizes reported by Zadro et al. (2005), whose studies were the basis for the paradigm used here, and on those reported by Sedikides et al. (1993) who employed a memory confusion measure similar to the one used here. The average sample size in the Zadro et al. (2005) studies was 10 per between-participants condition, Sedikides et al.'s (1993) studies involved 25 participants per between-participants condition.
We initially tested 23–24 per between-participants condition, although the final data set included only 20 per condition.

1.2. Design

Each group of three unacquainted same-sex participants was randomly assigned to the Exclusion or Inclusion condition. Within each testing session, participants were randomly assigned to one of three roles: Instigator, Ally, or Target.

1.3. Procedure

Upon arrival at the laboratory, a female experimenter directed each participant to sit in one of three chairs arranged in a row. Participants assigned to the Target role were seated in the middle chair, with those assigned to the Instigator and Ally roles seated on either side. The experimenter explained that the study would begin with a role-playing exercise in which each participant would be given individual instructions. In the role-playing exercise, participants were asked to imagine that they had a chance meeting with two other students (i.e., the other participants) on the train.

1.3.1. Exclusion manipulation

The individual instructions given to participants varied as a function of condition and role. In both Exclusion and Inclusion conditions, Allies and Targets were instructed to role-play a conversation taking place on a crowded train, and were advised that they might base their conversation around an item of gossip. Allies were additionally instructed to model their behavior on that of the Instigator, as if they were particularly motivated to befriend the Instigator.[2]

For Instigators in the Inclusion condition, the instructions were identical to those given to Targets (see above). For Instigators in the Exclusion condition, the instructions indicated that the experiment aimed to assess the effects of being included vs. ignored in a social interaction and that their role was to include or ignore the Target participant. They were further informed that enough participants in previous sessions had already chosen the 'include' option, so they were requested to take part in the 'ignore' condition. They were instructed that, if they agreed to take part in the 'ignore' condition, they should completely ignore the Target participant and talk over them to the Ally to ensure that the Target felt truly ignored. This procedure was adapted from Ciarocco et al. (2001) and was chosen to enhance ecological validity by ensuring that the Instigators felt that they had freely chosen to exclude the Target.

1.3.2. Idea generation task

Participants were then left for approximately 5 min to carry out the role-playing exercise, during which an audio/video recording was obtained. After 5 min, the experimenter returned to introduce the next part of the study, described as a creativity exercise (adapted from the Alternative Uses Test; Christensen, Guilford, Merrifield, & Wilson, 1960). Participants were instructed to take turns generating creative uses for a series of common household objects (paperclip, brick, shoe, button) which were identified by the experimenter.

The order of turn-taking was counterbalanced to avoid order effects in a subsequent memory task. When prompted by the experimenter, each participant generated a novel use for the given object. The process was repeated until each participant had generated four uses for each of the four objects.

After the idea generation task, participants were directed to computer stations in individual cubicles. All dependent measures were administered via computer using EPrime 2.0. Dependent measures were administered in the order listed below.

1.4. Dependent measures

1.4.1. Inclusion of other in the self (IOS)

Participants were presented with three versions of the IOS scale (Aron, Aron, & Smollan, 1992). The IOS scale shows a series of pairs of circles, which overlap to varying degrees. Each circle represents one individual in a relationship, and the extent to which the circles

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[1] The decision to omit sessions where Instigator participants did not comply with the instructions was made before the study was run and before any data analysis had been conducted. Nonetheless, we conducted parallel analyses in which data from all reflects how close the relationship is. Using the IOS scale, participants indicated the extent to which they perceived themselves as close to each of the other two participants, as well as the extent to which they perceived the other two participants as close to each other. The order of the three IOS scales was counterbalanced across participants.

[2] Please see Supplementary materials for details of an independent study into how these instructions are likely to have been interpreted.

1.4.2. Ratings of other participants

[3] Participants then answered a series of questions about their perceptions of the other two participants. Specifically, they rated each participant (using 9-point scales) on the extent to which they felt close to them, felt similar to them, liked them, thought that they could be friends with them, would like to see them again, and thought that they could trust them. The order in which the other participants were rated was counterbalanced.

1.4.3. Ratings of interaction

Next, participants answered a series of questions (again using 9-point scales) regarding their own behavior towards the other participants, and the other participants' behavior towards them during the interaction.
In particular, they were asked to rate their own and others' warmth, supportiveness, expression of positive feelings, expression of positive evaluations, and friendliness.

1.4.4. Need to Belong and Primary Needs

As a replication of prior research (e.g., Pickett et al., 2004; Zadro et al., 2005), participants completed the Need to Belong Scale (Leary, Kelly, Cottrell, & Schreindorfer, 2013) and a measure of Primary Needs used by Zadro et al. (2005) to assess need for self-esteem, belonging, control, and meaningful existence (all proposed to be threatened by social exclusion, Zadro et al., 2005; Zadro, Boland, & Richardson, 2006). As in the original version, the Need to Belong Scale comprised of 10 items rated on a 5-point scale (strongly disagree to strongly agree). A shortened version of the Primary Needs scale comprised eight items (two relating to each need) rated on a 0–100 scale (not at all to completely).

1.4.5. Memory measure
The final dependent measure was aimed at testing participants' memory for the ideas generated in the first part of the study. Participants were asked to recall the four novel uses they had generated for each of the objects, as well as the four uses each of the other participants had generated. Participants were given as much time as they needed to list as many items as they could recall.

1.4.6. Manipulation checks
Finally, participants were asked to indicate the extent to which they felt ignored and the extent to which they felt included during the roleplaying exercise. These ratings were made on a 5-point scale (not at all to very much).

2. Results[4]

2.1. Manipulation checks
Reliability of participants' ratings of the extent to which they were ignored and the extent to which they were included (reverse-scored) was satisfactory ($\alpha = .71$) and thus these ratings were averaged to form an experienced exclusion score. A two-way (Role × Condition)

[3] As an exploratory measure we also asked participants to rate themselves and each of the other participants on a number of personality traits, values, and attitude issues. We hoped to examine overlap in these ratings for evidence of similarity. However ratings showed very poor internal consistency, making them unsuitable for analysis.
[4] Additional analyses, including complete means tables for each dependent measure, are available in Supplementary materials.

analysis of variance (ANOVA) carried out on these scores yielded a significant main effect of Role, F(2, 113) = 22.156, p b .001, ηp 2 = .282, which was qualified by a significant Role × Condition interaction, F(2, 113)=26.409, p b .001, ηp 2 =.319 (see Table 1). Simple effects analyses within each Role indicated that Allies experienced significantly less exclusion in the Exclusion condition than in the Inclusion condition, F(1, 113)=7.351, p=.008, ηp 2 =.061. The same was true, but to a lesser extent, for Instigators, F(1, 113)=2.843, p = .095, ηp 2 =.025. In contrast, and confirming the effectiveness of our manipulation, Targets experienced significantly more exclusion in the Exclusion condition than in the Inclusion condition, F(1, 113) = 44.406, p b .001, ηp 2 = .282.

2.2. Measures of closeness

2.2.1. Self-other and other–other Overlap

Participants' perceptions of the closeness of their own relationships with each of the other participants, and of the other participants' relationship with each other, were assessed by three Inclusion of Other in Self (IOS) scale items, which measured self-other and other–other overlap.

First, each participant completed an IOS scale for their relationship with each of the other two participants, and for the relationship between the other two participants. Thus, each participant generated an IOS judgment for the Instigator–Ally relationship, the Instigator-Target relationship, and the Ally-Target relationship. These three relationship judgments were entered as repeated measures in a mixed-model ANOVA where Role and Condition were entered as between participants factors. This analysis yielded significant main effects of both Relationship (F(2, 226)=32.38, p b .001, ηp 2 =.22) and Condition (F(1, 113)=3.97, p b .05, ηp 2 =.03. However, both of these effects were qualified by a significant Relationship × Exclusion interaction, F(2, 226) = 41.03, p b .001, ηp 2 = .27. No other main or interaction effects approached significance (next largest F(4, 226) = 1.48, p = .21, ηp 2 =.03).

Simple effects analyses confirmed that whilst the Instigator–Ally relationship was given higher IOS ratings in the exclusion condition than in the inclusion condition, F(1, 13)=11.78, p = .001, ηp 2 =.09, the reverse was true for both the Instigator–Target relationship (F(1, 13)= 27.08, p b .001, ηp 2 =.19) and the Ally–Target relationship (F(1, 113)= 12.24, p = .001, ηp 2 = .10; see Table 2). Notably, Role did not moderate the critical interaction, indicating that perceptions of relationship closeness were shared among all participants.

2.2.2. Explicit ratings

Participants also reported their perceptions of each of the other participants on a number of dimensions: closeness, similarity, friendship potential, desire for future contact, liking and trust. These dimensions showed high internal consistency (α's = .84–.88 for each dyad) and hence were averaged into a single index of relationship cohesiveness. These Relationship indices were then entered as repeated measures in a mixed-model ANOVA where Exclusion condition and Role were between-participants factors. This analysis revealed significant main effects of Relationship (F(2, 226) =25.98, p b .001, ηp 2 = .19) and Condition (F(1, 13)=7.90, p=.006, ηp 2 =.07), both of which were qualified by a significant Relationship × Condition

[5] Data from5 participants were excluded from this analysis because they failed to recall more than 5 items in total (out of a total of 48 possible).
[6] Analyses carried out without the covariate yielded similar results.
[7] Correlations are reported in full in the Supplementary online materials

Table 1
Experienced exclusion (means with 95% CI), by condition and role.

Condition	Role		
	Instigator	Ally	Target
Exclusion	1.30 (0.84–1.74)	1.25 (0.81–1.69)	3.93 (3.49–4.36)
Inclusion	1.83 (1.39–2.26)	2.11 (1.66–2.55)	1.85 (1.41–2.29)

interaction, F(2, 226)=24.94, p b .001, ηp 2 = .18 (see Table 3).
Simple main effects of Condition were tested on ratings of each Relationship. Whilst the Instigator–Ally relationship was perceived as significantly more cohesive (F(1, 113) = 8.97, p = .003, ηp 2 = .07) in the exclusion condition, the opposite was true for perceptions of the Instigator–Target relationship (F(1, 113) = 26.77, p b .001, ηp 2 = .19) and the Ally–Target relationship (F(1, 113)=12.45, p=.001, ηp 2 =.10).
It is worth noting that the three-way interaction involving Role was also significant F(4, 226) = 2.69, p = .03, ηp 2 = .05, but the nature of the interaction was one of degree rather than direction (i.e., the Condition × Relationship interaction was significant (and of the pattern described above) for participants in each Role condition, although the magnitude of the interaction varied: FInstigator (2, 76) = 6.89, p = .002, ηp 2 = .15; FAlly(2, 76) = 18.82, p b .001, ηp 2 = .34, FTarget(2, 76) = 5.54, p = .006, ηp 2 = .13).

2.2.3. Memory confusions[5]

In addition to measuring self-other and other–other overlap using the IOS scales, we obtained an indirect measure of self-other and other–other assimilation from a memory confusion measure. We coded participants' recall of novel uses from the idea generation exercise as correct recall, memory confusion (a correctly recalled item attributed to the wrong person), or intrusion (an item that was not mentioned during the exercise).
Of particular interest are the memory confusions. We analyzed these using a Confusion Type (Instigator–Target vs. Instigator–Ally vs. Ally–Target) × Role × Condition Analysis of Covariance, with intrusions entered as a covariate to control for overall levels of false memory errors.[6] Not surprisingly, the analysis yielded a significant Confusion Type × Role interaction, F(4, 216) = 6.89, p b .001, ηp 2 = .11, indicating that participants were more likely to confuse ideas generated by the other two participants than they were to commit memory confusions involving themselves. More interestingly, although the overall Confusion Type × Condition interaction did not reach significance, F(2, 216) = 1.87, p = .16, ηp 2 = .02, the interaction between Condition and the quadratic contrast comparing the combined Instigator–Target and Ally–Target confusions to the Instigator–Ally confusions was significant, F(1, 108) = 4.06, p = .046, ηp 2 = .04. The nature of this interaction indicated that Instigator–Target and Ally–Target confusions were less likely to occur in the Exclusion condition than in the Inclusion condition, whereas the opposite was true of Instigator–Ally confusions. This suggests greater overlap between Instigator and Ally representations, and less overlap between the Target and the other participants, when the interaction was characterized by exclusion (see Table 4). This pattern was not moderated by Role, indicating that it occurred to the same extent for all participants. Notably, exploratory analyses in which IOS and explicit closeness ratings were entered as covariates indicated that neither was a significant predictor of memory confusions (F's b 1).
Although we did not specify hypotheses regarding correct recall, one might posit that overall recall performance would be worse for targets of exclusion (in line with previous research

Table 2
IOS ratings for each dyad, by condition. Means with 95% CI.

Relationship	Condition	
	Exclusion	Inclusion
Instigator–Ally	3.42 (3.11–3.72)	2.66 (2.35–2.97)
Instigator–Target	1.77 (1.49–2.05)	2.81 (2.53–3.10)
Ally–Target	1.95 (1.66–2.24)	2.68 (2.38–2.97)

indicating that being ostracized depletes one's cognitive resources; Baumeister et al., 2005). We found no evidence of this in the present study, as the Exclusion × Role interaction failed to reach significance, $F(2, 108) = 1.72$, $p = .18$, $\eta p\ 2 = .03$. The complete data are available from the authors; in the interest of brevity, we note only that there was the to-be-expected interaction between Role and Recall Type, $F(4, 218) = 277.78$, p b .001, $\eta p\ 2 = .84$: participants showed a strong tendency to recall more items that they had generated themselves than those generated by the other participants.

2.3. Relationships among relationship & memory measures

In exploratory analyses,we computed correlations between IOS ratings and two aspects of memory performance:memory confusions and correct recall for others' ideas. If explicit measures of relationship closeness are derived from the extent to which self-other or other–other representations overlap, then one might expect that IOS ratings for a particular dyad and memory confusions for the same dyad might be strongly correlated. Our analyses7 indicated that there were no such consistent correlations. Although overall correlations were weakly positive (r's = +.08 to +.18, average r = +.11), there was considerable variability across subsets of participants.

As noted above, participants showed the greatest level of accurate recall for ideas they generated themselves, which is consistent with self-reference effects often found in memory (Rogers, Kuiper, & Kirker, 1977). However, if self and other representations overlap, one might expect that there should also be a memory advantage for other-relevant information. To examine this, we computed correlations between IOS ratings for each dyad to which a participant belonged her/himself with memory for ideas generated by the other member of the dyad. These correlations were weakly positive (r's + .04 to +.27, average r = .16) but as above, there was considerable variability in the strength (and direction) of the associations. We address to these findings further in the Discussion section.

2.4. Need to Belong and Primary Needs

The Need to Belong Scale (Leary et al., 2013) proved to have poor internal consistency among our sample ($\alpha = -.68$). Not surprisingly, then, analysis of responses on the full scale yielded no meaningful results (all F′s b 1). Because the scale has been reported to be reliable in numerous studies (e.g., Leary et al., 2013),we further examined its characteristics in the present study and discovered that two items (‘I need to feel that there are people I can turn to in times of need’ and ‘It bothers me a great deal when I am not included in other people's plans’) had negative item-total correlations, suggesting that their removal would improve internal consistency (which it did, $\alpha = .71$). A revised score was computed based on the remaining 8 items and was analyzed in a Role × Condition ANOVA. This analysis produced a significant effect of Role, $F(1, 108)= 3.264$, $p = .042$, $\eta p\ 2 = .06$, such that Allies reported a greater need to belong ($M = 3.615$, $SE = .10$) than did Instigators ($M = 3.345$, $SE = .10$) or Targets ($M = 3.259$, $SE = .10$). This effect was not moderated by Condition, $F(1, 108)$ b 1,

Table 3
Explicit relationship ratings for each dyad, by condition. Means with 95% CI.

Relationship	Condition	
	Exclusion	Inclusion
Instigator–Ally	6.73 (6.40–7.06)	6.02 (5.69–6.35)
Instigator–Target	4.78 (4.43–5.12)	6.06 (5.71–6.41)
Ally–Target	4.93 (4.54–5.33)	5.93 (5.53–6.32)

nor did Condition have a significant main effect, F(1, 108) b 1.
The individual subscales of the Primary Needs scale (Zadro et al.,2005) showed variable reliability (α's ranging from −.34 for the selfesteem scale to +.91 for the belonging subscale).[8] The overall scale showed only moderate reliability (α = .62). Analysis of the scale yielded significant main effects of Condition (F(1, 114) = 4.44, p =.037, ηp 2 = .04) and of Role (F(2, 114) = 18.73, p b .001, ηp 2 = .25), both of which were qualified by a significant interaction (F(2, 114) = 30.63, p b .001, ηp 2 = .35. Simple main effects indicated that exclusion threatened the primary needs of the Target (F(1, 114) = 56.58, p b .001, ηp 2 = .33) and benefited those of the Ally (F1, 114) = 8.05, p = .005, ηp 2 = .07), but had no effect on those of the Instigator (F(1, 114)= 1.07, p = .304, ηp 2 = .01). See Table 5.

3. Discussion

The present research demonstrates a previously unrecognized outcome of social exclusion. Acts of social exclusion impact the perception of interpersonal relationships in important ways. Unsurprisingly, people view themselves and others as less close to those they exclude. More remarkably, however, dyads that exclude others are perceived as more close and cohesive than would be the case in the absence of exclusion.
One outcome of this study that bears particular mention is the finding that participants' particular role in the interaction (Instigator, Ally, or Target) was of little consequence for how exclusion affected either subjective judgments or mental representations of dyadic relationships within the interaction. This suggests, first, that interactants on both sides of an episode of social exclusion derive similar information from the event (albeit with presumably divergent downstream consequences).
With specific respect to the targets of exclusion, that information may have repercussions for how meaning is derived from the experience (see Richman & Leary, 2009). Second, the strong consensus among all parties in the interaction suggests that the intention to engage in exclusion was also of little import. Both instigators (who adopted an explicit goal to exclude the target) and allies (who merely followed the instigators' lead) enjoyed an enhanced sense of cohesiveness following exclusion.
One potential implication of the current study is that individuals may use social exclusion in a strategic manner in order to build closeness within a selected relationship. Such a motivation would be in contrast to the oft-assumed malevolent reasons (e.g., punishment or control; Williams, 2001) that people ostracize others. In the present experiment, excluding others led our participants to experience an emerging relationship as closer and as more cohesive (relative to those who were inclusive in their interactions). Notably, these participants did not spontaneously choose to engage in exclusion — building closeness in a new relationship was unlikely to be a motive for them. Yet, the outcome they experienced is likely one that is actively sought by people in many situations. Future research is needed to explore whether

exclusion is, in some cases, a conscious strategy chosen to reach that goal (cf. Pickett & Brewer, 2004).

Table 4
a. Number of memory confusions involving each dyad, by Role. Means with 95% CI.
b. Number of memory confusions involving each dyad, by condition. Means with 95% CI.

Dyad	Role		
	Instigator	Ally	Target
Instigator–Ally	0.38 (0.21–0.56)	0.41 (0.24–0.59)	0.67 (0.49–0.85)
Instigator–Target	0.31 (0.12–0.50)	0.72 (0.53–0.91)	0.26 (0.07–0.46)
Ally–Target	0.62 (0.44–0.80)	0.33 (0.16–0.51)	0.32 (0.13 (0.50)

Dyad	Condition	
	Exclusion	Inclusion
Instigator–Ally	0.53 (0.38–0.67)	0.45 (0.30–0.59)
Instigator–Target	0.34 (0.18–0.49)	0.52 (0.37–0.68)
Ally–Target	0.35 (0.20–0.50)	0.49 (0.35–0.64)

3.1. Why does the exclusion promote interpersonal closeness?

At least three mechanisms should be considered in understanding how and why exclusion increases cohesiveness in exclusive dyads. One possibility arises from Zhou, Zheng, Zhou, and Guo's (2009) work demonstrating that the act of rejecting something or someone decreases one's motivation for affiliation with others. In that work, participants who had rejected another person were less motivated to affiliate with others, particularly if they had insufficient justification for issuing the rejection. Zhou et al. interpreted these findings in terms of dissonance reduction—i.e., participants experienced dissonance after having unjustifiably rejected someone, and resolved it by concluding that they were uninterested in social interaction. Might a dissonance reduction process also be involved in producing the current findings? At least two points argue against this. First, participants were instructed on how to behave during the interaction, which supplied a ready justification for their behavior. There is little reason to assume that their actions aroused cognitive dissonance. More importantly, however, participants in all three roles shared the impression that the Instigator and Allywere closer when they excluded the target. Whilst one might speculate about dissonance producing a sense of cohesiveness among those in excluding roles, it is less obvious how it might have done so for those who were excluded.

A second potential mechanismis suggested by earlier work by Wyer (2008), who argued that overlapping mental representations (as assessed by memory confusions) produced subjective impressions of relationship closeness. Whilst Wyer and others (Mashek et al., 2003; Sedikides et al., 1993) have argued that memory confusions are strongly associated with relationship closeness, no previous research has directly measured both outcomes in the same study.[9] The present experiment did just that, and obtained no clear evidence that the two measures correlated.

This argues against a causal relationship between overlapping mental representations and perceived closeness, at least in newly formed relationships. Thus, it seems that explicit

[8] As an exploratory analysis, we carried out a factor analysis of the 8 items included in our shortened version of the Primary Needs scale. The results of this analysis are available in Supplementary materials.

[9] Mashek et al. (2003) and Sedikides et al. (1993) both directly varied or manipulated closeness and measured confusions ,whilst Wyer (2008)measured perceived relationship closeness and memory confusions as outcomes in separate studies.

ratings and memory confusions reflect different aspects or outcomes of relationship closeness.
Explicit closeness ratings are open to conscious reflection, and may be influenced by comparisons among different relationships — i.e., in assessing how close X is to Y, one may also consider the relationship between X and Z and calibrate accordingly. In contrast, memory confusions reflect attentional, encoding, and/or retrieval biases that lead to difficulties in discriminating the source of a particular memory.
These are unlikely to be influenced by conscious deliberation, and have been argued to reflect the extent to which a relationship is viewed in categorical terms (Sedikides et al., 1993). Further research is needed to identify how and if categorical processing of relationships relates to the subjective perception of relationship closeness.

Table 5
Primary needs of Instigators, Allies, and Targets, by condition means with 95% CI. Lower scores indicate greater threat to primary needs.

Role	Condition	
	Exclusion	Inclusion
Instigator	57.66 (53.36–61.95)	54.49 (50.19–58.78)
Ally	62.14 (57.85–66.44)	53.44 (49.15–57.74)
Target	34.01 (29.71–38.30)	57.07 (52.77–61.36)

A final factor that may underlie the effects of exclusion on relationship closeness is that exclusion acts as a uniquely shared experience.
Prior research (e.g., Aron, Norman, Aron, McKenna, & Heyman, 2000; Aron, Melinat, Aron, Vallone, & Bator, 1997; Fraley & Aron, 2004) indicates that conditions promoting the perception of uniquely shared knowledge and experiences by relationship partners (e.g., novel experiences, humor, mutual self-disclosure, respectively) also result in increased feelings of closeness. Similarly, the act of excluding another person is arguably an experience that is uniquely shared between two people, and hence may generate feelings of closeness and similarity within the excluding relationship. One important question that stems from this possibility concern the role of exclusion (or other uniquely shared experiences) at varying stages of relationship development.
Research into the effects of self-disclosure (Aron et al., 1997) and humor (Fraley & Aron, 2004) suggests that these forms of uniquely shared experience are impactful in the early stages of relationship development.
The current study adds weight to this conclusion. Yet, work by Aron et al. (2000) examining the influence of sharing novel experiences suggests that such events also enhance the closeness of well-established relationships. The extent to which exclusion has similar effects on the perceived closeness of both new and established relationships is a matter for further investigation.

Appendix A. Supplementary data

Supplementary data to this article can be found online at http://dx.doi.org/10.1016/j.jesp.2016.02.007.

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