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**What does it mean to belong? Interpersonal bonds and intragroup similarities as
predictors of felt belonging in different types of groups.**

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Abstract

Belonging is a fundamental human need, deemed essential for optimal psychological functioning. There is, however, little consensus about how people gain feelings of belonging from social groups, with theories suggesting different antecedents depending upon how groups are conceptualized. The social identity perspective conceptualises groups as social categories, and proposes that feelings of group belonging arise from perceived intragroup similarity. However, if groups are construed as interpersonal *networks*, feelings of belonging would be expected to arise from the quality of relationships and interactions among members. We tested these predictions using multilevel structural equation modelling of longitudinal data from 113 participants. We found that perceived intragroup similarity prospectively predicted feelings of belonging within groups perceived as social categories but not within those perceived as networks, whereas the quality of interpersonal bonds predicted feelings of belonging to both kinds of groups. We discuss the importance of distinguishing types of groups and suggest implications for research into group membership and well-being.

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What does it mean to belong? Interpersonal bonds and intragroup similarities as predictors of felt belonging in different types of groups.

Groups can provide their members with feelings of belonging (Gardner, Pickett, & Brewer, 2000), satisfying a basic need that is essential for optimal psychological functioning (Baumeister & Leary, 1995). However, there are stark differences in what theorists understand as *antecedents* to a sense of group belonging. Here, we examine the antecedents to feelings of belonging gained from membership in different types of groups. We predicted that feelings of belonging associated with membership of *social categories* would be gained through cognitive processes of self-categorisation: self-stereotyping and perceptions of category homogeneity. In contrast, we predicted that feelings of belonging associated with membership of social *networks* would be independent of self-categorisation processes, and gained through the interpersonal bonds among ingroup members.

Feelings of Belonging

Within the social identity tradition, optimal distinctiveness theory (Brewer, 1991) has linked group memberships to feelings of belonging. According to this perspective, feelings of belonging are gained from perceived immersion within groups, brought about via the categorical perception processes outlined in self-categorisation theory (Turner et al., 1987), whereby group members (including the self) are perceived, not as individuals, but as depersonalised and interchangeable exemplars of a homogeneous group.

Research has found that people feel most ‘included’ within larger groups (Badea, Jetten, Czukor, & Askevis-Leherpeux, 2010), and that experimentally threatening participants' inclusion within groups can lead to strivings to reaffirm membership through heightened perceptions of group homogeneity (Pickett, Bonner, & Coleman, 2002), self-stereotyping (Pickett & Brewer, 2001), and in-group size (Pickett, Silver, & Brewer, 2002). Categorical perception leads to depersonalised attraction: more prototypical members are

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better liked (Hogg et al., 1993; Hogg & Hains, 1996), and thus they may feel more belonging. Moreover, people with a strong need to belong, as well as those who have been primed with fears of rejection, perceive national consensus to be more in line with their own opinions than it actually is (Morrison & Matthes, 2011). Thus, the social identity perspective suggests that feelings of belonging arise from perceptions of intragroup similarity: prototypicality and group homogeneity.

Notably, the social identity perspective conceptualises groups as social *categories*, founded upon shared characteristics, or similarities, among their members (Turner et al., 1987). Social categories are construed as abstract and sparse collectives, characterised by stereotypes, norms, and perceived homogeneity, and not dependent on behavioural interactions (Deaux & Martin, 2000; Harb & Smith, 2008; Serpe & Stryker, 2011). Although feelings of belonging can be gained from perceptions of group homogeneity and self-prototypicality when groups are construed in this way, these processes may be less applicable if groups are construed differently.

Alternatively, groups can be conceptualized as social *networks* (Deaux & Martin, 2003; Serpe & Stryker, 2011; Stets & Burke, 2000). Network groups are construed as sets of relationships rather than collective wholes (Harb & Smith, 2008), based upon interdependence (Wilder & Simon, 1998), intimacy (Lickel et al., 2000), and interactions among the members (Deaux & Martin, 2003; Lickel et al., 2000). Group members often occupy specific roles (Serpe & Stryker, 2011; Stets & Burke, 2000), which individualise and distinguish the members from each other (Hornsey & Jetten, 2004; Jans, Postmes, & Van der Zee, 2011), depleting perceptions of intragroup similarity. Here, feelings of belonging are unlikely to be based upon categorical perceptions of homogeneity and typicality, but more upon the *relationships* among the individual group members.

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Feelings of belonging derived from interpersonal relationships are usually understood to have very different antecedents from those emphasised in the social identity literature. People gain greater satisfaction from their relationships when they are characterised by intimacy (Collins & Read, 1990; Hays, 1984) and interdependence (Whitton & Kuryluk, 2012), and when interactions are frequent (S. Kline & Stafford, 2004; Reis, Sheldon, Gable, Roscoe, & Ryan, 2000; for a review, see Baumeister & Leary, 1995). This suggests that intimacy, interdependence, and frequent interactions may be similarly important antecedents of feelings of belonging in the context of network groups.

Understanding the antecedents to feelings of belonging is important given their wide range of consequences. A frustrated need to belong is associated with negative outcomes including anxiety, jealousy, loneliness, and depression (Baumeister & Leary, 1995; Baumeister & Tice, 1990; Leary, 1990). Belonging is thought to be essential for self-esteem (Leary, Tambor, Terdal, & Downs, 1995) and for identity construction (Vignoles, 2011). A deeper understanding of the antecedents of felt belonging could help to illuminate the mechanisms behind these consequences, and thus help to explain the frequently reported positive effects of social group membership on well-being, especially as research has shown differing effects depending upon whether the group is an interpersonal network (e.g. Bratt, 2011; Sani, 2012) or a social category (Jones & Jetten, 2011). As we elaborate in our discussion, a better understanding of different sources of belonging also could potentially extend recent theorising on the nature and implications of marginal group membership (Ellemers & Jetten, 2013).

Types of Groups

We do not assume that any particular group can be unequivocally categorised as a network or social category. Perceptions of groups are somewhat contextually and historically dependent (Postmes et al., 2005; Turner, Oakes, Haslam, McGarty, 1994). Indeed, Rutchick,

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Hamilton, and Sack (2008) found that conceptions of the same group can be manipulated, with perceptions of entitativity being based upon similarity when a hive of bees was described in categorical terms, but on interaction characteristics when they were described as interacting members. Postmes, Spears, Lee, and Novak (2005) found that within artificially created groups founded upon a shared identity (similar to social categories) social influence was increased through depersonalising the members, whereas within groups based upon the members' behavioural interactions (similar to social networks), influence was increased through heightening their individual distinctiveness (see also Postmes, Haslam, & Swaab, 2005).

Nonetheless, certain real-life groups are more likely to have the characteristics that were manipulated in these artificial groups (Harb & Smith, 2008; Postmes, Spears, et al., 2005). For example, in groups that are relatively large, inclusive, and abstract, interactions would not be possible between all group members (Jans et al., 2011, Study 3; see also Deaux & Martin, 2000), and so these groups are more likely to be understood as social categories. In groups that are relatively small and exclusive, there is a greater probability of social interaction and connections between any two members, and hence these groups are more likely to be understood as social networks. In the current study, we did not impose our own view of which groups should be considered as categories or as networks—instead we allowed participants to list groups that they perceived as categories or as networks.

Previous research has shown differences between social categories and networks in links between member and group attachment (Prentice, Miller, & Lightdale, 1994), influence of group norms (Sassenberg, 2002), processes underlying identification (Easterbrook & Vignoles, 2012; Ethier & Deaux, 1994; Millward, Haslam, & Postmes, 2007), and levels of perceived entitativity (Lickel et al., 2000). However, no previous work has investigated how these different groups provide members with feelings of belonging.

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The Present Study

We asked participants to list freely five social categories and five interpersonal networks of which they were members, and investigated intragroup similarity and interpersonal bonds as prospective predictors of feelings of belonging associated with the groups they had listed over a three-month time-interval. Although we expected that memberships within networks and categories would provide feelings of belonging (Gardner et al., 2000), real-life social categories are more likely to be characterised by a shared social identity, and hence we expected that perceptions of intragroup similarity would predict feelings of belonging associated with social category memberships (H1). In contrast, we expected that intimate bonds and frequent interactions with the other members would predict feelings of belonging associated with network memberships (H2).

Method

Design, Participants and Procedure

Because feelings of belonging could be a cause as well as a consequence of interpersonal bonds and perceived intragroup similarity (Turner, 1999), we used a longitudinal design to focus our analyses on the theorised causal direction. In exchange for course credit, 160 first- and second-year psychology students completed the Time 1 online questionnaire, distributed via a research participation website. Three months later, participants were emailed a link to the second questionnaire, which 113 participants completed (29% attrition). Missing data rendered a final sample of 111 participants (98 females, 13 males), aged 18 to 50 ($M = 19.85$ years, $SD = 3.35$).

Questionnaires

We created online questionnaires using Macromedia Dreamweaver MX software, which also included further items on identity-related issues. The first questionnaire began

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with a brief description of the study, including ethical procedures, and participants provided email addresses so we could send them the second questionnaire and match their responses.

Next, participants read brief definitions of networks and categories (shown in Table 1), and freely listed five networks and five categories of which they were members. We used free listing to ensure that the groups were not imposed by the researchers, and instead were psychologically meaningful parts of their self-concept (Turner et al., 1987). Participants' listed groups were re-displayed on subsequent pages, so they could be seen whilst being rated. The most frequently listed networks were family, friends, and flatmates, whereas the most common categories were nationality, university, and gender, suggesting that respondents understood and responded appropriately to our instructions.

Each subsequent page began with a new item, followed by ten 11-point rating scales—one for each listed group. Table 1 shows the item wordings. Our single-item belonging measure was displayed first. We used a single item measure for two reasons. Firstly, as respondents had to answer each question 10 times, once for each group, we did not want to overload or bore participants by having to answer very similar items numerous times. Secondly, our single item allowed participants to answer in terms of their own understandings of the word "*belonging*", rather than steering them towards any particular conceptualisation, which could confound our results. The use of single-item measures has been established in previous research into social identity (e.g. Postmes, Haslam, & Jans, 2012) and feelings of belonging (Reis et al., 2000; Vignoles, Regalia, Manzi, Gollledge, & Scabini, 2006).

We then included four items tapping the quality and quantity of interpersonal interactions within each group, representing Interpersonal Bonds, and four items tapping perceptions of group homogeneity and self-prototypicality, representing Intragroup Similarity (see Table 1). Finally, participants provided some demographic information and were thanked for participating.

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On the first page of the second questionnaire, we reminded participants of the study details and their right to withdraw. Participants provided their email address, and the groups they had listed at Time 1 were automatically retrieved and displayed alongside the ratings scales referring to them. Participants indicated whether they still considered themselves a member of each group, and then completed the belonging item from Time 1. Participants indicated, and were asked not to rate, groups that they were no longer members of: thus, 81 networks (16%) and 30 social categories (6%) were excluded from our analyses. Finally, participants were debriefed and thanked again for participating.

Results

Analytic Strategy

The data have a multilevel structure, with group memberships nested within participants. To separate within-person from between-person effects, we conducted multilevel structural equation modelling using Mplus version 6 (Muthen & Muthen, 2010). Although we were primarily interested in within-person effects, we specified parallel models at within-person and between-person levels to control statistically for between-person effects (Figure 1). Within-person effects focus on variance among the group memberships listed by each participant, allowing us to investigate whether feelings of belonging are predicted by different antecedents depending upon the type of group involved. Between-person effects represent systematic differences in how individuals responded to the items in general, after accounting for the theoretically important relationships at the within-person level. Between-person effects are unrelated to our hypotheses but modelling them allows us to deconfound our within-person estimates of any person-level response tendencies, including response bias or social desirability effects. Table 2 shows the zero order correlations.

To avoid confounding our results with differences in the mean levels of responses between self-reported social categories and networks, we centred all variables within each

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group type (subtracting the overall mean for categories from the responses related to category memberships, and subtracting the overall mean for networks from the responses related to network memberships). This ensures that any differences between types of groups in the within-person relationships will not be due to one type of group having higher mean ratings than the other. To enable us to test whether predictors of belonging were significant for each group type and whether they were statistically different from each other, we created two versions of all the variables, one representing responses for category memberships, the other representing responses for network memberships. This also allowed us to control for possible differences between categories and networks in the between-person covariances among variables. We did this by multiplying each centred variable by two dummy variables; one representing responses relating to category memberships (coded categories = 1; networks = 0), the other representing responses relating to network memberships (coded categories = 0; networks = 1). This allowed us to model within-person and between-person effects separately for categories and networks, allowing for differences in variable means and covariances at each level across group types (Figure 1).

Measurement Model

Firstly, we tested our measurement model for the two sources of belonging, whereby items assessing perceptions of group homogeneity, and perceptions of the self as a typical, stereotypical, and prototypical group member loaded onto an Intragroup Similarity factor, whereas items for intimacy, interdependence, sociability, and knowledge of group members loaded onto an Interpersonal Bonds factor, across group types and levels of analysis. Factor loadings were constrained to be invariant across group types and levels of analysis. Because of our data structure, at the within-person level we allowed these factors to covary within, but not across, group types, whereas at the between-person level we allowed factors to covary within and across group types. The resulting measurement model showed adequate fit

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indices according to Kline's (2005) criteria, $\chi^2(238) = 712.87, p < .001$, comparative fit index (CFI) = .94, root mean square error of approximation (RMSEA) = .05, standardised root mean residual (SRMR; within-level) = .07, indicating that the two factor solution was appropriate, with items loading distinctly on their respective factors.

Removing the constraints described above provided a change of $<.01$ in CFI, indicating that the loadings were invariant across group types and levels of analyses (Cheung & Rensvold, 2002; Little, Card, Slegers, & Ledford, 2007). Hence, we retained these constraints in all subsequent models. We also tested an alternative model where the indicators loaded onto a single factor for each group type. This model showed poor fit indices, $\chi^2(237) = 1373.62, p < .001$, CFI = .85, RMSEA = .08, SRMR (within-level) = .08, and fitted significantly less well than our proposed model, $\Delta\chi^2(1) = 660.75, p < .001$.

Testing our hypotheses

We now tested our proposed structural model. Standardised estimates are shown in Figure 1; unstandardised estimates are reported below. The structural model showed good fit indices $\chi^2(357) = 864.23, p < .001$, CFI = .95, RMSEA = .04, SRMR (within-level) = .06. We tested the paths from the two factors to Time 2 Belonging, while controlling for the stability path from Time 1 Belonging to Time 2 Belonging, at both levels of analysis. We also included a cross-sectional test of our hypotheses by modelling paths from these factors to Time 1 Belonging within each group type, at both levels of analysis. At the within-person level, we allowed Interpersonal Bonds to covary with Intragroup Similarity within, but not across, group types. At the between-person level, we included covariances between the two factors, between the two Time 1 Belonging variables, and between the two Time 2 belonging variables, both within and across group types.

Our main hypotheses focused on prospective predictions of Time 2 Belonging, while controlling for Time 1 Belonging. At the within-person level, Intragroup Similarity

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prospectively predicted Time 2 Belonging for categories ($B = .38, p < .001$), but not for networks ($B = .07, p = .343$), supporting H1¹. In contrast, Interpersonal Bonds prospectively predicted Time 2 Belonging for networks ($B = .44, p < .001$) supporting H2, but also for categories ($B = .19, p = .004$).

Cross-sectional paths at Time 1 showed very similar results. At the within-person level, Time 1 Belonging was positively predicted by Intragroup Similarity for categories ($B = .30, p = .002$, but not for networks, ($B = .06, p = .282$), supporting H1. In contrast, Interpersonal Bonds positively predicted Time 1 Belonging for interpersonal networks ($B = .71, p < .001$), supporting H2, but also for categories ($B = .57, p < .001$).

We tested whether the model fit decreased once the paths from each predictor to belonging were constrained to be equal across group types. A model imposing equality constraints across group types on the within-person paths from Intragroup Similarity to Time 1 and Time 2 Belonging was a significantly worse fit, $\chi^2(2) = 11.60, p = .003$, indicating that Intragroup Similarity was a significantly stronger predictor of feelings of belonging within social categories than within social networks. A model with equality constraints across group types on the within-person paths from Interpersonal Bonds to Time 1 and Time 2 Belonging, was a significantly worse fit, $\chi^2(2) = 899, p = .011$, indicating that Interpersonal Bonds was a stronger predictor of belonging within social networks than within social categories.

Discussion

Our results indicate that feelings of group belonging have different antecedents depending on the type of group involved. Cross-sectional and prospective predictions showed similar results: Categorical perceptions of intragroup similarity proposed by the social identity perspective predicted feelings of belonging within groups that participants listed as social categories, but not within those they listed as social networks (H1). Frequent interactions and intimate bonds with other group members, however, predicted feelings of

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belonging within groups that participants listed as social networks (H2) and as social categories, although more strongly for networks. Thus, processes of social self-categorisation did not explain feelings of belonging gained from memberships within networks. Tests of model constraints confirmed that the Intragroup Similarity factor was a stronger predictor of belonging for category memberships compared to networks, whereas the Interpersonal Bonds factor was a stronger predictor of belonging for network memberships compared to categories.

Unexpectedly, feelings of belonging within social categories were predicted not only by perceived intragroup similarity, but also by interpersonal bonds among members. With hindsight, however, this makes sense. Harb and Smith (2008) argue that thinking about a social category could lead one to focus on a particular relationship with a fellow member, and several researchers have argued that network groups are often formed within categories (Bratt, 2011; Deaux & Martin, 2003). Indeed, studies suggest that social categories and networks are often closely linked, and it is only once the effects of super- or sub-ordinate groups have been statistically partialled out that the different effects associated with categories and networks become clearly separated (Bratt, 2011; Easterbrook & Vignoles, 2012). Future research could examine whether this finding reflects the presence of network groups nested within superordinate social categories.

Also potentially relevant is the large proportion of females in our sample. Researchers have argued that women in Western cultures orient their sociality and gain feelings of belonging mainly through dyadic relationships, whereas men are oriented towards wider social spheres (Baumeister & Sommer, 1997). Perhaps, then, a predominantly male sample would have shown an even greater distinction between networks and categories than was apparent here. An interesting avenue for future research would be to investigate under which conditions (if any) category memberships are perceived solely as depersonalised

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collectives, rather than as contexts for interpersonal relationships, and whether this differs with gender.

Our results have several important implications. Previous research has found that simply making salient a greater number of social categories can increase resilience in the face of discomfort (Jones & Jetten, 2012), and that being a member of a network group can increase well-being through heightened perceptions of social support (e.g. Haslam, O'Brien, Jetten, Vormedal, Penna, 2005; Sani, 2012). As belonging has been conceptualised as a fundamental human need, its satisfaction could be partly responsible for these findings, with belonging gained via prototypicality increasing resilience, and belonging gained via interpersonal bonds increasing social support. Future research should thoroughly investigate these possibilities, and whether negative consequences associated with being deprived of feelings of belonging may depend on which form of belonging is undermined.

Our results also have the potential to inform and expand recent theorising by Ellemers and Jetten (2013) about the nature and consequences of marginal group memberships. Their model claims that one source of belonging—prototypicality—is independent of, and can interact with, identification, and is therefore vital to our understanding of the processes operating between individuals and groups. Indeed, they highlight various situations where identification and degree of prototypicality could be opposed, and outline the psychological consequences of occupying a marginal (i.e. non-prototypical) position within a group that one identifies with. However, our results suggest that prototypicality may be only part of the story, with interpersonal bonds playing an equal or perhaps greater role in defining marginality. Indeed, especially in regards to interpersonal network groups such as families, a theory of marginality that focuses on the interpersonal bonds among group members has strong intuitive appeal.

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Some researchers have made further distinctions between types of groups, such as intimacy and task groups (e.g. Lickel et al., 2000), and future research should investigate possible differences in how feelings of belonging are gained in these types of groups.

Although our longitudinal design allows more confidence in the directionality of effects than a cross-sectional designs, experimental research could be used to establish causality more clearly. An interesting avenue for further research would be to compare these findings across cultures. Yuki (2003) has argued that, within collectivistic cultures, even large social categories are seen as networks of relationships rather than depersonalised collectives, suggesting that perceptions of intragroup similarity may be more important for feelings of belonging within individualistic cultures.

Despite these limitations, our results show that feelings of belonging are gained differently within different types of groups. The self-categorisation processes of self-stereotyping and perceptions of category homogeneity predicted feelings of belonging only within social categories, but not within network groups. Interpersonal bonds among the group members predicted feelings of belonging within both social categories and network groups. Thus, although feelings of belonging can be gained from both networks and social categories, they are gained through different processes. Our results add to a growing literature suggesting that memberships within different types of groups are psychologically different.

Notes

1. We also tested whether the effect of intragroup similarity on belonging was curvilinear. Attempts to add quadratic effects to our structural model resulted in non-convergence problems, but polynomial regression indicated that the quadratic effects of similarity on belonging were non-significant ($p > .17$) for both networks and categories. We thank an anonymous reviewer for suggesting this analysis.

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Table 1: Definitions and items in the questionnaire.

Definitions	Wording
Social Categories	<i>...can be very large and inclusive such as race or religion, or more exclusive, such as [name of university] psychology student. You do not have to know all the members of the category that you write down, you only need to consider yourself a member of that category</i>
Social Networks	<i>...anything from formal organisations to informal friendship groups but you should know all or most of the members of the group personally</i>
Construct	Item
Belonging	<i>How much does being a member of each group or category give you a feeling of "belonging"?</i>
Interpersonal Bonds	
Intimacy	<i>How close do you feel with the other members of each group or category?</i>
Interdependence	<i>How much do the members of each group or category depend upon each other?</i>
Knowledge	<i>How well do you know the other members of each group or category?</i>
Sociability	<i>How sociable are you within the group or category?</i>
Intragroup Similarity	
Stereo-typicality	<i>For each group or category, how much do you see yourself as a typical member?</i>
Typicality	<i>In everyday situations, how closely do you think your thoughts and behaviours match those of a typical member of each group or category?</i>
Group Homogeneity	<i>Within each group or category, how similar do you feel the members are to each other?</i>
Prototypicality	<i>How similar do you feel to the average member of each group or category?</i>

Note: All anchors where 0 = Not at all, 5 = moderately, 10 = extremely

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Table 2: Zero order correlations between the raw scores. The top panel contains ratings for category memberships, with within-person correlations above the diagonal, $N = 385$, and between-person below $N = 113$. The bottom panel contains ratings for network memberships, with within-person correlations above the diagonal, $N = 342$, and between-person below, $N = 113$.

	1	2	3	4	5	6	7	8	9	10	Mean	SD
Category ratings												
1 Time 1 Belonging	-	.38	.39	.52	.29	.33	.33	.33	.33	.46	5.18	2.77
2 Knowledge	.42	-	.52	.67	.43	.41	.28	.29	.35	.29	2.45	2.36
3 Interdependence	.43	.73	-	.61	.46	.43	.32	.31	.44	.35	3.28	2.48
4 Intimacy	.48	.73	.80	-	.58	.49	.38	.39	.42	.44	3.06	2.51
5 Sociable	.15	.44	.49	.53	-	.36	.40	.47	.41	.35	4.52	2.69
6 Homogenous	.35	.42	.50	.56	.37	-	.39	.50	.54	.30	4.23	2.54
7 Stereotypical	.25	.20	.27	.24	.37	.42	-	.53	.44	.36	5.12	2.56
8 Similar	.17	.20	.24	.27	.37	.53	.41	-	.44	.38	4.58	2.41
9 Prototypical	.32	.46	.60	.47	.42	.59	.45	.38	-	.29	3.81	2.56
10 Time 2 Belonging	.45	.28	.35	.37	.25	.27	.31	.31	.17	-	5.52	2.45
Network ratings												
1 Time 1 Belonging	-	.66	.62	.74	.56	.43	.51	.55	.43	.62	7.85	2.08
2 Knowledge	.56	-	.68	.83	.60	.45	.50	.55	.45	.56	8.08	2.25
3 Interdependence	.49	.76	-	.70	.60	.48	.54	.56	.50	.49	7.19	2.16
4 Intimacy	.73	.72	.74	-	.73	.52	.57	.63	.53	.63	7.63	2.41
5 Sociable	.46	.62	.66	.90	-	.45	.56	.64	.56	.56	8.04	2.07
6 Homogenous	.14	.19	.53	.28	.24	-	.53	.74	.58	.40	6.57	2.24
7 Stereotypical	.43	.46	.61	.67	.53	.60	-	.67	.58	.41	7.07	2.39
8 Similar	.46	.45	.75	.62	.56	.76	.72	-	.62	.46	6.50	2.27
9 Prototypical	.23	.28	.49	.39	.37	.65	.58	.62	-	.43	5.55	2.52
10 Time 2 Belonging	.29	.27	.22	.45	.62	-.03	.20	.33	.15	-	7.18	2.26