

**Submitted: February 29, 2012**

**Accepted: September 3, 2012**

### **Gender Differences in the Need to Belong: Different Cognitive Representations of the Same Social Groups**

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#### **ABSTRACT**

*The group importance model of social belongingness suggests that women and men value different types of social groups. However, inconsistencies in studies testing that model led to a cognitive representation model which instead suggests that women and men have different mental images of the same social group. The present study tested this cognitive model using a priming experiment with reaction time measures. The results provide direct evidence that women and men have different levels of specificity in their cognitive associations for collective groups. These findings have implications for how we use others to meet belongingness needs and maintain well-being.*

Social belonging is important for well-being (Baumeister & Leary 1995), but some have suggested that women and men use different types of groups to satisfy belongingness needs. Research on this potential difference has shown inconsistent results (e.g., Gabriel & Gardner 1999; Grace & Cramer 2003; Madson & Trafimow 2001). Rather than focusing on whether women and men value different social groups, an alternative view suggests that women and men cognitively represent the same social groups in different ways (Foels & Tomcho 2009). The present research examines this cognitive representation hypothesis using a priming study with reaction time measures, and assesses whether social groups are cognitively associated with different types of information for women and men.

#### **NEED TO BELONG AND GENDER**

The need to belong is a fundamental human need that requires frequent, meaningful interaction with others for optimal well-being (Baumeister & Leary 1995). Failure to meet this need is related to negative outcomes (Bagwell et al., 2005). Therefore understanding any gender differences in how social groups are used to meet belongingness needs may have important consequences for understanding well-being. For example, men report higher levels of loneliness than women (Koenig, Isaacs, & Schwartz 1994) which in turn may be related to problematic

coping behaviors such as alcohol abuse (Knox, Vail-Smith, & Zusman 2007).

Baumeister and Sommer (1997) argued that the need to belong is met through different sources for women and men. Their group importance model suggests that women place more importance on small intimate groups whereas men place more importance on large impersonal groups. In other words, women should value relational groups that are based on personal bonds such as a family or a group of friends, whereas men should value collective groups that are based on symbolic affiliations such as a hometown or a college (e.g., Sedikides & Brewer 2001).

There is mixed evidence for the group importance model. Although studies have found that women value relational groups more so than men (e.g., Gabriel & Gardner 1999; Grace & Kramer 2003; Madson & Trafimow 2001), not all studies support this prediction (e.g., Caldwell & Peplau 1982; Foels & Tomcho 2005; Foels & Tomcho 2009). Even fewer studies support the corollary prediction that men value collective groups more so than women (e.g., Foels & Tomcho 2005; Foels & Tomcho 2009; Garza & Herringer 1987; Madson & Trafimow 2001).

The mixed evidence may not be surprising given that the group importance model conflicts with theory regarding how the need to belong is satisfied. Satisfying belongingness needs requires meaningful social interaction with a few close others, as opposed to superficial interaction with multiple others (Baumeister & Leary 1995). Therefore, we should see both women and men valuing close interactions, and they do (e.g., Caldwell & Peplau 1982). For example, women and men both see family, a relational group, as an important social identity (Foels & Tomcho, 2005; Garza & Herringer 1987). Thus a different approach to understanding gender and social belongingness appears needed.

## **A COGNITIVE INTERPRETATION**

To resolve the inconsistencies, Foels and Tomcho (2009) proposed that a gender difference exists in the cognitive representations of social groups. This cognitive representation model proposes that women have a mental image of a group as several different exemplars with whom they interact (e.g., my sister, my dad), whereas men have an image of one overall prototype with which they interact (e.g., my family). In other words, when thinking about the same social group women may be more likely to engage in specific representations of others in the group whereas men may be more likely to engage in diffuse representations of the group as a whole.

This cognitive approach to understanding how people view their social world is not unique. Niedenthal and Beike (1997) have argued that social interdependence requires a cognitive representation of others, and research shows that people have mental representations of significant others (Anderson & Cole, 1990) and of their groups (Mullen, 1991). Therefore, examining the cognitive representations that people have of their relational and collective groups may help to illuminate the reasons for inconsistencies in data on group importance.

## **Gender Differences in Representations**

Bargh, Chen, and Burrows (1996) suggested that people process stimuli with which they have had extensive experience in an implicit, automatic manner because experience creates a

framework of chronically accessible mental representations. Women and men face different socialization experiences (Maccoby, 1990), therefore gender socialization could lead women and men to have different chronic representations of the same social groups.

As evidence that women and men have different cognitive representations of social groups, women describe their relational groups using the specific references *sister* and *best friend* more so than men, whereas men list these groups using the diffuse labels *family* and *friends* more so than women (Foels & Tomcho, 2009; McGuire & McGuire, 1982). Additionally, when women describe collective groups such as team and college, they use the specific references *teammate* and *classmate*, whereas men use the diffuse labels *team* and *college* (Foels & Tomcho, 2009).

### **Priming to Provide Direct Evidence**

The existing evidence for gender differences in cognitive representations comes from questionnaire studies, which are indirect assessments of cognitive processes. More direct evidence requires manipulations such as priming, and implicit measures such as reaction time. Priming refers to the activation of temporary cognitive representations based on information in the present situation (Bargh et al., 1996). When a prime conflicts with an individual's chronically accessible cognitive representation, the time it takes to respond to a target is slower due to this cognitive conflict (Blair & Banaji, 1996). However, when a prime matches with the chronic representation, reaction time is the same or may be quicker (Bargh et al., 1986).

The cognitive representation model has not been directly assessed with priming, so in the following study we primed participants with relational and collective groups, and measured how long it took them to respond to specific and diffuse information. Gender differences would be evident by different reaction times following different group primes. Based on gender differences in socialization, we predicted that women would respond more slowly to diffuse targets whereas men would respond more slowly to specific targets.

## **METHOD**

### **Participants**

Forty one college students (22 women, 19 men) received course credit for participating in a study on "Reaction Time Judgment." One participant was dropped from analyses due to responses that were 3 standard deviations beyond the mean reaction time, leaving 22 women and 18 men upon which analyses were based (analyses with and without this participant showed similar results).

### **Overview**

We primed participants with groups that were relational (family, friends) and collective (team, students), then measured their reaction times to targets that were specific (couple, dual) and diffuse (several, many). The methods of this study followed Blair and Banaji (1996), who showed that reaction times to stereotypical information were slower when primes and targets were conflicting (e.g., Steve - nurse) than when they were matching (e.g., Susan - nurse). We similarly expected that reaction times in general would be slower when the group prime and the

specificity of the target conflicted (e.g., relational group - diffuse target) than when the prime and target matched (e.g., relational group - specific target). Any deviation from this pattern would provide insight into how women and men cognitively represent their groups.

## Procedure

For each trial the reaction time program displayed a fixation point for 500 ms, followed by a relational or collective group prime (e.g., friends, team) for 50 ms. The prime word was followed by a blank screen for 100 ms, then followed by a specific or diffuse target word (e.g., dual, several). The target word remained displayed until the participant indicated a response, as described below. Following the response, a blank screen was displayed for 1 sec before the next trial started.

Participants were seated in cubicles containing a keyboard and digital monitor, and were told that they would see a fixation point in the center of the screen, followed by two words, one presented after the other. Participants were told to do nothing with the first word (relational or collective group prime), and simply respond to the second word (specific or diffuse target) that remained on the screen (see Blair & Banaji, 1996). The monitor instructed participants to press either the "J" or "F" key on the keyboard to indicate whether the target word indicated "2" (i.e., specific) or "more than 2" (i.e., diffuse). The key for this judgment was counterbalanced across the two trial blocks. Participants completed 2 trial blocks of 20 judgments each, with 4 practice judgments followed by 16 experimental judgments. The 16 experimental judgments were composed of combinations of the 4 primes and 4 target words.

## RESULTS

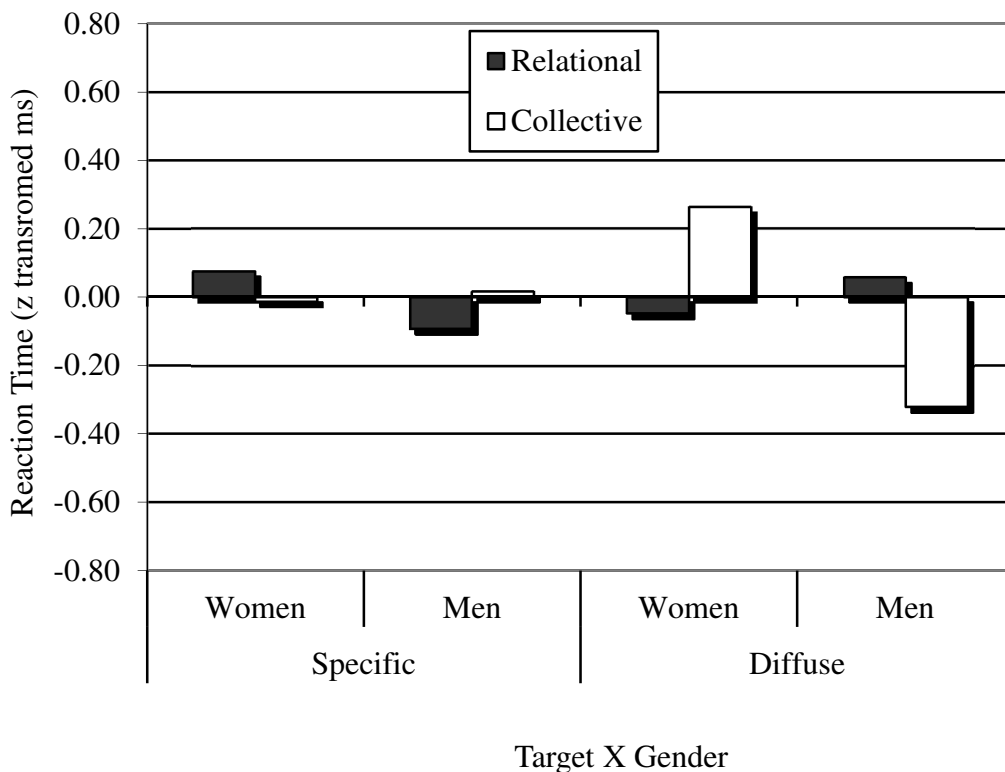
We first examined the accuracy of responses in terms of correctly indicating whether the target word indicated "2" or "more than 2." A 3 factor ANOVA indicated that there were no main effects nor interactions, all  $F_s < 1.50$ , all  $p_s > .22$ . Women (89%) and men (91%) both correctly identified the specificity of the target word approximately 90% of the time.

We tested reaction time with a 2 (Gender) x 2 (Prime: relational group vs. collective group) x 2 (Target: specific vs. diffuse) ANOVA with repeated measures on the last two factors. There was no main effect of gender,  $F_{(1, 38)} = 0.26$ ,  $p < .62$ , nor prime,  $F_{(1, 38)} = 0.52$ ,  $p < .48$ . There was a main effect of target such that participants responded more quickly to specific targets than to diffuse targets,  $F_{(1, 38)} = 31.25$ ,  $p < .001$ ,  $\eta^2 = .45$ . This effect is not surprising given that the diffuse target words are more ambiguous and should therefore take longer to process before responding (e.g., Simpson & Krueger, 1991). There were no significant 2 way interactions,  $F_s < 1.66$ ,  $p_s < .21$ . There was a significant 3 way interaction,  $F_{(1, 38)} = 4.49$ ,  $p = .04$ ,  $\eta^2 = .11$ . Before examining this interaction we first  $z$  transformed the reaction time scores to remove the main effect of target. This transformation then allowed a comparison of reaction times based on conflicting primes and targets, separate of the confounding main effect of slower reactions to diffuse targets. The same 3 way interaction was still present after the transformation,  $F_{(1, 38)} = 5.57$ ,  $p = .02$ ,  $\eta^2 = .13$ .

To examine this interaction we conducted 2(Gender) X 2(Prime) ANOVAs for the specific and

diffuse targets separately. As seen in Figure 1, for the specific targets there were no main effects of gender,  $F_{(1, 38)} = 0.06, p = .81$ , nor prime,  $F_{(1, 38)} = 0.01, p = .95$ , and no interaction,  $F_{(1, 38)} = 0.46, p = .50$ . For the diffuse targets there was no main effect of gender,  $F_{(1, 38)} = 0.70, p = .41$ , nor prime,  $F_{(1, 38)} = 0.06, p = .80$ . However, there was a significant interaction,  $F_{(1, 38)} = 6.43, p = .02, \eta^2 = .14$ . This effect was driven by responses following the collective prime,  $t(38) = 3.10, p < .004, \eta^2 = .20$ , but not the relational prime,  $t(38) = 0.56, p = .58, \eta^2 < .01$ . Following collective group primes women responded more slowly to diffuse targets whereas men responded quickly to these targets.

**Figure 1: Reaction Time to Specific and Diffuse Targets Following Social Primes**



## DISCUSSION

Results supported our prediction that women would respond more slowly than men to diffuse targets, but this occurred only following a collective prime. For both women and men it was a quick judgment when deciding whether a target was a diffuse word following relational primes. For men it was an even quicker judgment when making this decision following collective primes. Thus it appears that only men represent their collective ingroups as diffuse prototypes, which mirrors men's cognitive views of outgroups (Lorenzi-Cioldi, Eagly, & Stewart, 1995).

### Theoretical Implications

#### *Cognitive Representations Versus Group Importance*

Despite the plausible suggestion that there are gender differences in social belongingness, the literature shows mixed results across studies. We were able to "replicate" these mixed results in the present study such that we only found an interaction when diffuse information was involved. These results suggest three things. First, there is a cognitive element to belongingness as evidenced by different response times following different prime-target combinations. This supports the view that individuals have cognitive representations of relational and collective groups (e.g., Andersen & Chen, 2002; Mullen, 1991). Second, there are gender differences in these cognitive representations. Third, women have a more specific cognitive representation of their collective groups, as evidenced by their slower response time to diffuse targets.

This gender difference in cognitive representations of collective groups is interesting given that the inconsistencies in the group importance literature are especially pronounced for collective groups (e.g., Foels & Tomcho 2009; Garza & Herringer 1987; Madson & Trafimow 2001). The present results provide a potential explanation for these inconsistencies. Rather than a gender difference in which groups are important, researchers may have unknowingly tapped into differential cognitive representations of the same social groups. Women may value collective groups as much as men do, but women may provide fewer diffuse and more specific references to collective groups, which is misinterpreted as references to relational groups instead. For example, women indicate collective group importance with specific exemplars such as "teammate" rather than the diffuse prototype "team" (Foels & Tomcho, 2009), which could be interpreted as women placing less importance on this type of collective group than men do.

### *Importance of Belongingness*

Failure to meet the need to belong is associated with psychological and even physiological problems (e.g., Bagwell et al., 2005; Uchino, Uno, & Holt-Lunstad, 1999). For those who hold chronic diffuse prototype representations of social groups, it may be harder to have their belongingness needs met because it may be harder to envision the types of close, meaningful interactions that are necessary to satisfy the need to belong. This problem would be true both for ties within existing groups, as well as for the development of ties with others in new groups. For example, on a college campus there are numerous new groups to which one could be exposed, including clubs, intramural sports teams, and study groups. If one has a prototype representation of the group as a whole rather than exemplars within the group, it would be harder to notice the attributes of individual group members that make for potential friends. This speculative account is borne out by data showing that men, especially around college age, report higher levels of loneliness than women (Koenig, Isaacs, & Schwartz, 1994).

Inconsistencies in the belongingness literature suggest that our perceptions of gender differences in belongingness may be misleading. Rather than continuing to attempt to document which groups women and men value as important, we encourage researchers to adopt new approaches that will resolve the discrepancies between theory and data, and the inconsistencies across studies. Examining cognitive representations may provide not only an approach to resolve those discrepancies, it simultaneously may address the larger question of how gender socialization is turned into gender differences in any of a number of areas. Based on the present research, it appears that differences in belongingness may occur because women and men have different

cognitive representations of the same social groups.

## REFERENCES

- Andersen, S. M., & Chen, S. (2002). The relational self: An interpersonal social-cognitive theory. *Psychological Review*, *109*, 619-645.
- Bagwell, C. L., Bender, S. E., Andreassi, C. L., Kinoshita, T. L., Montarello, S. A., & Muller, J. G. (2005). Friendship quality and perceived relationship changes predict psychosocial adjustment in early adulthood. *Journal of Social and Personal Relationships*, *22*, 235-254.
- Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, *71*, 230-244.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497-529.
- Baumeister, R. F., & Sommer, K. L. (1997). What do men want? Gender differences and two spheres of belongingness: Comment on Cross and Madson. *Psychological Bulletin*, *122*, 38-44.
- Blair, I. V., & Banaji, M. R. (1996). Automatic and controlled processes in stereotype priming. *Journal of Personality and Social Psychology*, *70*, 1142-1163.
- Caldwell, M. A., & Peplau, L. A. (1982). Sex differences in same sex friendship. *Sex Roles*, *8*, 721-732.
- Foels, R., & Tomcho, T. J. (2005). Gender, interdependent self-construals, and collective self-esteem: Women and men are mostly the same. *Self and Identity*, *4*, 213-225.
- Foels, R., & Tomcho, T. J. (2009). Gender differences in interdependent self-construals: It's not the type of group, it's the way you see it. *Self and Identity*, *8*, 396-417.
- Gabriel, S., & Gardner, W. L. (1999). Are there "his" and "hers" types of interdependence? The implications of gender differences in collective versus relational interdependence for affect, behavior, and cognition. *Journal of Personality and Social Psychology*, *77*, 642-655.
- Garza, R. T., & Herringer, L. G. (1987). Social identity: A multidimensional approach. *Journal of Social Psychology*, *127*, 299-308.
- Grace, S. L., & Cramer, K. L. (2003). The elusive nature of self-measurement: The Self-Construal Scale versus the Twenty Statements Test. *Journal of Social Psychology*, *143*, 649-668.
- Knox, D., Vail-Smith, K., & Zusman, M. (2007). The lonely college male. *International Journal of Men's Health*, *6*, 273-279.

Koenig, L. J., Isaacs, A. M., & Schwartz, J. A. J. (1994). Sex differences in adolescent depression and loneliness: Why are boys lonelier if girls are more depressed? *Journal of Research in Personality*, 28, 27-43.

Lorenzi-Cioldi, F., Eagly, A. H., & Stewart, T. L. (1995). Homogeneity of gender groups in memory. *Journal of Experimental Social Psychology*, 31, 193-217.

Maccoby, E. (1990). Gender and relationships: A developmental account. *American Psychologist*, 45, 513-520.

Madson, L., & Trafimow, D. (2001). Gender comparisons in the private, collective, and allocentric selves. *Journal of Social Psychology*, 141, 551-559.

McGuire, W., & McGuire, C. (1982). Significant others in self-space: Sex differences and developmental trends in the social self. In J. Suls (Ed.), *Psychological Perspectives on the Self* (vol. 1, pp. 71-96). Hillsdale, NJ: Erlbaum.

Mullen, B. (1991). Group composition, salience, and cognitive representations: The phenomenology of being in a group. *Journal of Experimental Social Psychology*, 27, 297-323.

Niedenthal, P. M., & Beike, D. R. (1997). Interrelated and isolated self-concepts. *Personality and Social Psychology Review*, 1, 106-128.

Sedikides, C., & Brewer, M. B. (2001). Individual self, relational self, and collective self. In C. Sedikides & M. B. Brewer (Eds.): *Individual self, relational self, collective self*. Philadelphia, PA: Psychology Press.

Simpson, G. B., & Kreuger, M. A. (1991). Selective access of homograph meanings in sentence context. *Journal of Memory and Language*, 30, 627-643.

Uchino, B. N., Uno, D., & Holt-Lunstad, J. (1999). Social support, physiological processes, and health. *Current Directions in Psychological Science*, 8, 145-148.

## APPENDIX A: Experimental Stimuli

Primes		
Relational Groups	Family	Friends
Collective Groups	Team	Students
Targets		
Specific Targets	Couple	Dual
Diffuse Targets	Several	Many



## APPENDIX B: Descriptive Statistics

Means and SDs in Milliseconds and Correlations Across Variables

**Table 1. Relational Prime Condition**

				Gender	Specific Target	Diffuse Target
Gender	<i>M</i>	506.12	<i>r</i>	1.00		
	<i>SD</i>	123.15	<i>p</i>	--		
Specific Target	<i>M</i>	492.60	<i>r</i>	.14	1.00	
	<i>SD</i>	117.85	<i>p</i>	.40	--	
Diffuse Target	<i>M</i>	519.63	<i>r</i>	.31	.55	1.00
	<i>SD</i>	128.29	<i>p</i>	.05	< .01	--

**Table 2. Collective Prime Condition**

				Gender	Specific Target	Diffuse Target
Gender	<i>M</i>	511.53	<i>r</i>	1.00		
	<i>SD</i>	126.82	<i>p</i>	--		
Specific Target	<i>M</i>	494.35	<i>r</i>	.28	1.00	
	<i>SD</i>	100.68	<i>p</i>	.08	--	
Diffuse Target	<i>M</i>	528.72	<i>r</i>	.29	.57	1.00
	<i>SD</i>	147.77	<i>p</i>	.07	< .01	--

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Thanks to Kate Jassin and Tom Tomcho for comments on an earlier version of this paper. Address correspondence to Rob Foels, Department of Psychology, University of Connecticut, Storrs, CT 06269.

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