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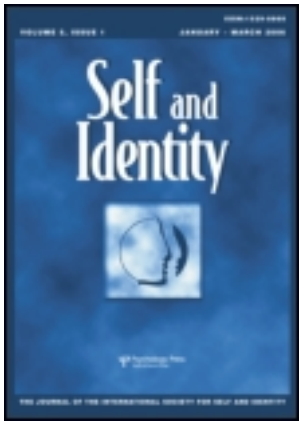

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The Effects of Power Imbalances and Gender on Autobiographical Memory

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This study investigated the effects of power, gender, and gender of partner on content (agency and communal themes) and structure (differentiated and integrated cognitive style) of autobiographical memories for previous power experiences. The results showed that assigned power affected memory content, with helpers including more communal themes in their memories. Gender also affected memory structure, with females structuring memories in a more integrated style, and males in a more differentiated style. Assigned power significantly interacted with gender of partner in affecting the memory content and structure. Helpers who interacted with female leaders structured memories in a more integrated style. Helpers who interacted with male leaders structured memories in a more differentiated style. Participants who interacted with females included more communal themes in their memories.

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Autobiographical memories refer to personally experienced past events that are verbally accessible, in narrative form, involve a sense of recollection, and potentially contribute to an individual's life story (Reese, 2002). The content and structure of autobiographical memories are thought to reflect key aspects of identity, including core motives and affects (Conway & Pleydell-Pearce, 2000; Conway & Rubin, 1993; Pasupathi, 2001; Skowronski & Walker, 2004). They reflect and maintain stable self-beliefs, exerting powerful influences on encoding and retrieval of self-relevant information (Robinson & Clore, 2002). Finally, they also serve to create emotional and social bonds by reflecting and reinforcing selected aspects of social relationships, since they are often narrated within social contexts (Reese, 2002).

There is some support for the idea that the quality of social interactions and social roles can affect autobiographical memories (Conway & Pleydell-Pearce, 2000; Conway & Rubin, 1993). For example, people's roles in relationships, such as caretaking roles for women, help to determine what they remember and what they forget (e.g., remembering people's birthdays; Skowronski & Walker, 2004). Gardner, Pickett, and Brewer (2000) showed that simulated social rejection increased the selective retention of both positive and negative social information. Most recently, Nakash and Brody (2006) found that when women participated in a brief building-block task alone, as compared to with a confederate, the agentic themes in their

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subsequent autobiographical memories were significantly lower, perhaps because women are uncomfortable in independent and agentic roles.

Perhaps the most convincing evidence that the organization and content of memories is affected by the quality of social interactions emerges from developmental research. This research has documented that the quality of mother–child interactions and attachment relates to the organization of children's autobiographical memories later in development (Reese, 2002). Explanations for this association include the idea that the quality of the parent–child interaction serves as a model for children about how to reminisce. Selected aspects of the parent–child relationship may be internalized as templates for what and how to remember. If memories are viewed as functional for maintaining social interactions and emotional bonds (Reese, 2002), it is possible that peer and non-familial social interactions may also affect memory content and structure.

Much of the research on the relationship between social interactions and memory in adults has concerned how memories are affected by characteristics of the social situation at the time of memory retrieval. The situation at retrieval can create particular demand characteristics for accuracy, content, and detail (see Skowronski & Walker, 2004). For example, needing to remember whether or not you performed a particular job might be recollected differently when interacting with a supervisor than with a friend. Far less research has been conducted on how a particular social interaction influences the recollection of autobiographical memories that were encoded previous to the interaction. If social interactions can be shown to influence the quality of previously encoded memories, it would suggest that the effects of social role (e.g., being a caretaker versus a provider) may be generalized beyond immediate situations. The effects of social role may be internalized as, or contribute to, aspects of identity as reflected in autobiographical memories over longer periods of time. For example, becoming a caretaker may shift the way previous memories for caretaking experiences are viewed, with caretaking themes in previous memories now particularly accessible when retrieved. These shifts in the quality of memories might help shape and adapt to a caretaking identity.

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Power and Gender

One aspect of social roles that may make a significant contribution to autobiographical memories is the amount of power wielded within a social interaction. Power imbalances tend to be based on characteristics such as differential access to resources; differential ability to reward, punish, influence, or control others; and dissimilar expertise and knowledge. In an extensive review of the literature, Keltner, Gruenfeld, and Anderson (2003) provide a theoretical model and empirical support for the significant effects of power imbalances (including those that occur in brief, transient social interactions). These effects are manifested in the realms of affect, social attention, social cognition and social behavior. For example, high power is related to dominance, extraversion, perceived efficacy and physical attractiveness. Because high power is associated with increased rewards and freedom, it facilitates approach-related positive mood and affect, including enthusiasm, happiness and love. High-power individuals also construe social events in a more automatic, less complex style of reasoning. In contrast, low power is associated with increased threat and social constraint. Such an approach, in turn, facilitates inhibition-related negative mood and affect, such as shame, fear, guilt and sadness. Low power individuals are more likely to engage in deliberate, controlled

social cognition, to devote more attention to others, and to behave in ways that are more situationally contingent.

Power imbalances may be particularly important in understanding gender differences in identity, because power differences between men and women are widely documented. Compared to women, men generally have greater access to, and control over, valued cultural resources. Moreover, in interactions, men also have greater formal or structural power than do women (Brody, 1999; Molm & Hedley, 1992). Furthermore, women view unequal power as a threat to intimacy, whereas men view the attainment of power as a way of attaining intimacy (Baumeister & Sommer, 1997). These gender differences in conceptualizations of and access to power exist despite the fact that women and men show no gender differences in power motives (wishes to influence others as well as to receive recognition for power-oriented behaviors; Winter, 1988).

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Power, Agency and Communion

The power imbalances between men and women, as well as other differing social roles or functions they perform (e.g., provider vs. caretaker) may be formative for the identities and cognitive styles of both men and women (Eagly, 1987; Kemper, 1978). Men's sense of self has been found to be higher on agency, or independence, while women's sense of self has been found to be higher on interdependence, or communion (Cross & Madson, 1997). Agency is both a motive and an aspect of identity in which a value is placed on personal achievement, the self, and separation from others. It is thought to be adaptive for positions of high power and status. In contrast, communion is a motive or an aspect of identity in which a value is placed on connection to others and group loyalty or membership. It is thought to be adaptive for positions of lower power and status (Bakan, 1966; Bem, 1977; Spence & Helmreich, 1979).

Gender differences in communal and agentic self-construals may influence and be influenced by power imbalances. Greater access to positions of power may elicit and reinforce agentic self-construals, whereas positions of powerlessness may reinforce communal self-construals (Eagly & Karau, 1991). However, for women, the relationship between powerlessness and self-construals may be complex, because being in powerful positions is nongender-role stereotypic for females. When they are in positions of power, women may feel discomfort and emotional ambivalence (Fong & Tiedens, 2002). This discomfort may cause them to react by becoming more stereotypically communal, since acting in concordance with gender-relevant values has been shown to enhance positive affect (Wood, Christensen, Hebl, & Rothgerber, 1997). Evidence that women become more communal in leadership positions is indicated by research showing that in situations of unequal power, women are more apt to try to equalize rewards than are men (Lips, 1991). Josephs, Markus, and Tafarodi (1992) demonstrated that when women and men were given fake feedback about being low in gender stereotypic characteristics (such as nurturance for women and competition for men), high self-esteem participants tried to compensate by estimating superior future performance in tasks representing those domains. Compensatory or heightened agency for men may occur when they find themselves in gender atypical positions of powerlessness. Compensatory or heightened communion for women may occur when women find themselves in gender atypical positions of power. Nakash and Brody's results (2006) are consistent with these ideas, although the social roles investigated in their study were agency versus

communion rather than positions of high and low power. Women who participated in an independent, agentic task, when compared to those who participated in a cooperative, communal task, included fewer agentic themes in autobiographical memories they narrated following the task.

Gender is not the only variable influencing the degree to which people endorse agentic or communal behaviors and self-construals. Social role and context affect these constructs as well (Brody, 1999; Eagly, Makhijani, & Klonsky, 1992). For example, research has indicated that individuals of both sexes are most agentic when with a supervisee and least agentic when with a supervisor (Moskowitz, Suh, & Desaulniers, 1994). Gerber (1988) found that in marriages, leaders (whether husbands or wives) tended to be perceived as more agentic and followers as more communal. Furthermore, Conway and Vartanian (2000) found that lower status is associated with communalism.

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Social Role, Self-construals, and Autobiographical Memories

Agentic and communal self-construals and motives have been related to both the content and structure of autobiographical memories. In terms of content, McAdams and his colleagues (McAdams, 1982; McAdams, Hoffman, Mansfield, & Day, 1996) demonstrated a significant relationship between power motivation and agency content themes and between intimacy motivation and communal content themes in salient personal memories (e.g., peak experiences). Further, people high on agency consistently recalled memories of experiences that involved issues of agency (e.g., mastery, achievement). In contrast, communal people recalled experiences and memories featuring others (Woike, Gershkovich, Piorkowski, & Polo, 1999).

Agency and communion also affect the structure of memories, or how memories are organized. Differentiated versus integrated cognitive styles in narrative writing have been identified by Woike (1994) and Suedfeld, Tetlock, and Streufert (1992). In a differentiated cognitive style, differences, contrasts, and oppositions are emphasized. In an integrated cognitive style, similarities and connections are emphasized. Individuals high on agency have been found to structure their memories in a differentiated cognitive style (emphasizing separation and individuality). In contrast, individuals high on communion have been found to construct their memories in an integrated cognitive style (emphasizing similarity, congruity, and interdependence; Woike, 1994, 1995; Woike et al., 1999; Woike & Matic, 2004). Woike (1994) suggested that organizing information in a differentiated manner may facilitate agentic individuals' need for autonomy and domination. Organizing information in an integrated manner may facilitate communal individuals' need for greater connection with others.

The literature reviewed thus far suggests that personal identity, or self-construals may affect the content and organization of autobiographical memories. In particular, two aspects of identity, namely, agentic and communal self-construals, have been found to be related to the content and organization of autobiographical memories. The content and organization of memories may also be impacted by social roles. Power imbalances may be particularly important as they have been found to have pervasive effects on cognitive, affective, and behavioral functioning. Moreover, gender may moderate these effects, both because males and females wield differential amounts of power and because they respond differently to situations in which they do wield power. In the current paper, we test the idea that powerful/powerless social roles may affect the content (agentic and communal self-construals) and the organization (integrated and differentiated cognitive styles) of previous

encoded autobiographical memories. We also investigate whether or not gender moderates this relationship. Finally, we consider another aspect of social context that may affect autobiographical memories, namely, gender of partner.

Gender of Partner

The potential effects of social role and gender on self-construals may be even more complex when other aspects of the situational context are taken into consideration, such as gender of partner. Some theoretical frameworks suggest that gender of partner may be an important variable affecting the content and organization of memories expressed to that partner (Pasupathi, 2001). Related research has found that gender differences in communication behavior depend in part on the gender of the interaction partner (Athenstaedt, Haas, & Schwab, 2004; Carli & Bukatko, 2000; Deaux & LaFrance, 1998; Hall, 1984). For example, some research suggests that both men and women are more likely to experience and express anger and fear toward men rather than toward women, and warmth and affection toward women rather than toward men (Brody, Lovas, & Hay, 1995). Other research shows that female partners tend to be treated in a more friendly and supportive manner than male partners by both sexes (Guerrero, 1997; Hall, 1984).

Research has also documented that behavior in same-sex groups tends to be more gender stereotyped than behavior in mixed-sex groups (Buhrke & Fuqua, 1987; Fitzpatrick, Mulac, & Dindia, 1995). For example, women in same-sex groups behave in a more communal manner than they do in mixed-sex groups (Fitzpatrick et al., 1995). Similarly, Leaper (1998) found that women and men's decision-making processes differed depending on the gender of both the speaker and the partner (e.g., female–female dyads tended to be characterized by more supportive responses than were females with male partners).

In the current study, we expanded on this literature to investigate the effects of gender of partner in a power imbalanced situation on the content and organization of subsequently retrieved autobiographical memories. Given that interactions with female partners tend to heighten female stereotypic behaviors (supportiveness and communalism), we hypothesized that interactions with female partners would heighten communal content themes and integrated cognitive style in memories. Moreover, given that interactions with males tend to be characterized by more anger and competition, we hypothesized that interactions with a male partner would result in heightened agency themes and a differentiated cognitive style in memories. Theoretically, it is also possible that interacting with men versus women would lead to displaying a complementary style to the partner's gender stereotypic role. For example, interacting with a female who displays communal behaviors or who is gender stereotyped to be communal, might lead a participant to display agentic qualities. These agentic qualities would serve to complement or balance their partner's communal style. However, the bulk of the literature we reviewed suggests that gender stereotypic matching occurs in dyadic interactions, rather than gender stereotypic complementary behaviors. We used this literature to inform our hypotheses, which we describe next.

Hypotheses

Based on previous literature showing relationships between gender and autobiographical content themes and cognitive style (McAdams, 1982; McAdams et al.,

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1996; Woike, 1994, 1995), we predicted that, relative to men, women's descriptions of their autobiographical memories would contain more communal themes and fewer agentic themes, and that the structure of their memories would show more cognitive integration, and less differentiation. We also predicted an effect for social role in which men and women in powerful (vs. powerless) roles would describe autobiographical memories with more agentic and fewer communal themes, and would structure their memories in a more differentiated and less integrated cognitive style. This hypothesis emerges out of literature showing that powerful social roles are related to agentic behaviors and perceptions and powerless social roles to communal behaviors and perceptions (Conway & Vartanian, 2000; Gerber, 1988; Moskowitz et al., 1994).

Gender should also moderate the relationship between power and the content and structure of autobiographical memories. Because women tend to be uncomfortable in positions of power, they should display heightened communal themes and a more integrated cognitive style after interacting in powerful as compared to powerless positions. Heightened communal autobiographical themes and content would protect their threatened communal identity and be functional for future interactions (Josephs et al., 1992). Similarly, men should display heightened agentic themes and a more differentiated cognitive style after interacting in a powerless versus powerful position.

Furthermore, based on previous literature indicating that participants tend to match the behaviors and affect of their partner's gender-stereotypic behaviors and style (e.g., Buhrke & Fuqua, 1987; Fitzpatrick et al., 1995), participants should also include more communal themes in their memories, while structuring their memories in a more integrated cognitive style, when they interact with female partners rather than with male partners. Participants should include more agentic themes in their memories, while structuring their memories in a more differentiated cognitive style, when they interact with male partners rather than female partners. Based on Keltner et al.'s (2003) theoretical review, this effect should be stronger for individuals in powerless roles than for those in powerful roles, because powerless individuals are more affected by situational context than are powerful individuals.

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Method

Sample

Two hundred twenty-eight college students (119 female, 109 male) aged 17 to 25 years participated in the study as part of the course requirements for introductory psychology at a large university in the northeastern United States. The average age was 18.6 years for females, and 19.1 years for males. Of these, 82% were American (72% European American, 6% Hispanic American, 6% Asian American, 7% Indian American, 1% African American). Of the participants, 18% were non-Americans (31% European, 8% Hispanic, 42% Asian, 8% Indian, 4% African). Family income ranged from less that $30,000 to above $100,000, with the average income ranging between $60,000 and $100,000 a year.

Participants were randomly divided into four groups as follows: 31 female leader–female helper dyads; 26 male leader–male helper dyads; 30 male leader–female helper dyads; and 27 female leader–male helper dyads. There were no significant differences between the four groups on any of the demographics mentioned above.

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Procedure

Participants were told that the purpose of the experiment was to study the effects of leadership on creativity. Participants initially completed several self-report measures, including a brief demographic questionnaire. These self-report measures were not relevant to the present study and will not be discussed further.[1]

After completion of the questionnaires participants were randomly divided into pairs, and assigned either a powerful or a powerless role through a lottery procedure. Each pair participated in a discussion task in which they had to generate a list of seven people they thought should be saved if the earth were to be destroyed (the seven people were to be identified by gender, age, ethnicity, and occupation). Participants were asked to work together for 15 minutes to come up with the most creative answer they could. Participants were told that a panel of graduate students would judge their creativity. It was emphasized that participants in powerful roles would make all decisions, direct the discussion, and have the final say on the content of the list given to the experimenters. This particular survival discussion task was chosen based on pilot testing because it (a) enabled a discussion that required no previous or expert knowledge on the part of participants and (b) was associated with high levels of affect and engagement on the part of both female and male participants. The fact that the content of the discussion (who should live and who should die) highlighted power differentials was also relevant because we were interested in increasing the salience of power issues.

After completion of the task, participants were asked to describe in writing an autobiographical memory in which they had been in a position of power. Examples given to all participants included teaching a class, being a camp counselor, and making a decision that influenced their friends. Autobiographical memories for power experiences, as opposed to more general life experiences, were selected for investigation based on theories that view autobiographical memories as transitory or temporary constructions, rather than stable events (Skowronski & Walker, 2004). According to these models, the content and organization of the memory would be responsive to the demands of the situation, and would be especially likely to be shaped according to the activation of social motives. Since our task activated power motives and emphasized power issues, it was likely to differentially affect the subsequent recall of memories related to power.

Participants completed a manipulation check questionnaire that included 5 items relating to power/status (each on a 5-point scale) to confirm that assigned power had the desired subjective effect. Participants were asked questions about the degree to which: they had stepped out of their assigned role; they were in control of the project; their partner was willing to listen to their ideas; they were responsible for the project; and they felt comfortable in their assigned role.

Measures

Thematic analyses of the autobiographical memories. The agentic and communal themes of the autobiographical memories were analyzed using the SLIWC program (Pennebaker & Francis, 1996). The SLIWC relies on a dictionary of more than 2200 words and word stems. Independent ratings given by expert judges helped select words for each category and develop the dictionary. This approach assumes that general concepts expressed by individuals can be captured by the examination of the

specific words used to denote the concept. For example, when individuals verbally express anxiety they are assumed to be more likely to use words such as "anxious," "afraid," "nervous," and "tense." Reliability studies provide support for the notion that language use is a reliable individual difference, particularly for categories such as psychological processes (Pennebaker & King, 1999).

Two word categories out of the potential 76 word categories analyzed by the software, were used in analyses for the present study, namely, "other" words (refers to third-person pronouns, e.g., "he," "she," "them," denoting communion), and "I" words (first-person pronoun denoting agency). Further, two new categories were programmed, namely, communion and agency. Fifty-one words were compiled to denote communion (e.g., "communal," "connect," "relate," "support"), and 42 words to denote agency (e.g., "autonomy," "different," "detach," "independent"), based on the work of Ely, Melzi, Hadge, and McCabe (1998), Hurley (1998), and Mansfield and McAdams (1996).

Cognitive organization of the autobiographical memories. The cognitive organization of the autobiographical memories was analyzed using the Categories of Complexity Scoring Manual (Woike, 1996), which provides measurement of differentiation and integration (Woike et al., 1999). Differentiation entails making distinctions in the form of comparisons, contrasts and restrictions. Integration entails making connections in the form of dynamic relationships, similarities, and overarching themes.

Five coders were trained to score the autobiographical memories for elaborated differentiation and integration.[2] All coders were female PhD students in clinical psychology or advanced undergraduates majoring in psychology, blind to the study's hypotheses. We established interrater reliability by training each coder until they achieved at least *Kendall's Tau-b* = 0.80 for each of the six subcategories of complexity in the practice materials. Percentages of differentiation and integration were used in subsequent regression analyses, and were computed by dividing the differentiation and elaborated integration scores respectively by the sum of these scores (Woike, 1996).

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Results

Manipulation Check

Five two-way ANOVAs (Role × Gender) were carried out on the five manipulation check items to confirm that the manipulation had the desired effect. All analyses revealed a significant difference between leaders and helpers in the desired direction. For example, a two-way ANOVA (Role × Gender) revealed a significant difference between leaders and helpers in the extent to which they felt in control of the project $F(1, 226) = 25.79$; $p < .001$, such that leaders felt more in control than helpers. There were no significant differences between leaders and helpers in the extent to which they felt comfortable in their assigned role $F(1, 226) = 1.65$; $p = ns$, or in the extent to which they felt they had stepped out of their assigned role $F(1, 226) = .84$; $p = ns$. In addition, there were no significant differences between males and females on any of the manipulation items, nor were there any significant interactions between role and gender. Table 1 presents the means and standard deviations of the five manipulation check items by role.

TABLE 1 Means and Standard Deviations of the Manipulation Check Items by Role

Manipulation check item	Helpers ($N = 114$)	Leaders ($N = 114$)	F-test
"I felt in control of the project"	2.42 (0.94)	2.93 (1.02)	$F = 25.79$ (1, 226), $p < .00$
"My partner was willing to listen to my ideas"	2.14 (1.38)	3.73 (0.98)	$F = 7.99$ (1, 226), $p < .01$
"I was responsible for the project"	2.34 (1.00)	4.16 (1.25)	$F = 41.68$ (1, 226), $p < .00$
"I felt comfortable in my assigned on the project"	3.80 (1.26)	3.60 (1.17)	$F = 1.65$ (1, 226), $p = ns$
"I had stepped out of my assigned role in the project"	1.26 (0.68)	1.38 (0.76)	$F = 0.84$ (1, 226), $p = ns$

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General Characteristics of the Autobiographical Memories

The experiences of power narrated by participants were varied and included memories such as leading a band, being a camp counselor, leading a church activity, being an attendant in a nursery school, leading an athletic team, and influencing decisions of friends and family members. Although there was no time frame for the requested autobiographical memories, all reported memories related to participants' experiences from high school and college years. The average length of the autobiographical stories was 142 words ($SD = 63$). A 2×2 (Role $\times$ Gender) ANOVA, using the length of the autobiographical stories as the outcome variable, showed that there was no significant difference in word count between helpers and leaders $F(1, 226) = 1.57$; $p = ns$, or between females and males $F(1, 226) = 0.36$; $p = ns$.

Tests of Hypotheses: Gender, Roles and Autobiographical Memories

Table 2 presents the means and standard deviations of the frequency (in percentage of total words) of SLIWC agency and communion categories and cognitive organization style scores within each of the four groups (i.e., female leader/female helper; female leader/male helper; male leader/male helper; male leader/female helper). Pearson correlations revealed no significant relationships between the cognitive style scores and the agency and communion themes in the narratives either for the total sample, or for helpers and leaders analyzed independently.

In order to examine the hypotheses of the study concerning the impact of social role (powerful, or leadership, roles vs. powerless, or helper, roles), gender, and gender of partner on autobiographical agentic and communal themes (i.e., words denoting agency, communion, "I," and other) and cognitive structure (i.e., differentiation and integration scores), we conducted six multiple-regression analyses. The predictors entered in the first block of the regression included the participants' role, gender, and partner's gender. The predictors entered in the second block of the regression consisted of dummy variables that coded the two-way interactions between each pair of these variables (i.e., gender of participant by role; partner's gender by role; participant's gender by partner's gender). If interactions

TABLE 2 Means and Standard Deviations of the Frequency of Themes (in Percentage of Total Words) and Cognitive Style(in Percentages) of Autobiographical Memories

	Female leader/female helper ($N = 31$ dyads)	Female leader/male helper ($N = 27$ dyads)	Male leader/male helper ($N = 26$ dyads)	Male leader/female helper ($N = 30$ dyads)
Communal themes	0.16 (0.64)	0.22 (0.43)	0.21 (0.45)	0.23 (0.54)
Other (third-person pronoun)	1.92 (2.48)	1.67 (1.87)	1.58 (1.57)	1.59 (2.12)
Agentic themes	0.66 (0.97)	0.63 (0.70)	0.72 (0.93)	0.65 (0.81)
"I" (first-person pronoun)	9.94 (3.16)	9.12 (2.86)	10.24 (3.68)	9.95 (3.20)
Differentiation cognitive style	43.99 (22.5)	45.99 (24.80)	53.26 (21.76)	52.71 (22.93)
Integration cognitive style	56.00 (22.50)	54.01 (24.80)	46.73 (21.76)	47.28 (22.93)

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were significant, we interpreted them by performing regressions separately for each gender looking at the relationships between outcome variables and predictors. Table 3 presents the findings from all regression analyses conducted.

The regression analyses partially supported the first hypothesis of the study, which predicted finding main effects for social role on themes and structure of autobiographical memories. Powerless participants, regardless of gender, included more communal themes in their memories than powerful participants. Specifically, the inclusion of communal words was significantly predicted by role $\beta = .14$; $p < .05$, such that powerless participants included more communal words than did powerful participants, regardless of participant's and partner's gender.

The results also partially supported the second hypothesis of the study, which predicted a main effect for gender on themes and structure of autobiographical memories. Women, regardless of roles, structured their memories in a more integrated cognitive style and in a less differentiated cognitive style than men. Men, regardless of role, structured their memories in a more differentiated cognitive style and in a less integrated cognitive style than did women. Specifically, differentiation scores were significantly predicted by participant's gender, $\beta = .19$; $p < .01$. Males had higher differentiation scores than females regardless of role and gender of partner. Integration scores were also significantly predicted by participant's gender, $\beta = -.21$; $p < .01$. Females had higher integration scores than males, regardless of role and gender of partner.

The third hypothesis of the study, which had predicted an interaction effect between social roles and gender on themes and structure of memories, was not supported.

TABLE 3 Multiple Regression Results: Effects of Social Role, Gender, and Gender of Partner on Themes and Cognitive Structure of Autobiographical Memory

	β	t-value	p value
		Communal Words	
Role	.14	2.10	.03
Gender	−.01	−0.07	.94
Gender of partner	.05	0.79	.43
Role × Gender	−.03	−0.47	.63
Role × Gender of partner	.00	0.01	.99
Gender × Gender of partner	−.04	−0.54	.59
		Other Words	
Role	−.04	−0.57	.57
Gender	.07	1.02	.31
Gender of partner	−.16	−2.36	.02
Role × Gender	−.03	−0.40	.67
Role × Gender of partner	.14	0.21	.83
Gender × Gender of partner	.03	0.44	.66
		Agentic Words	
Role	.11	1.59	.11
Gender	.02	0.27	.79
Gender of partner	.05	0.67	.50
Role × Gender	−.03	−0.38	.71
Role × Gender of partner	−.01	−0.19	.84
Gender × Gender of partner	−.00	−0.02	.98
		"I" Words	
Role	−.07	−0.97	.33
Gender	.03	0.50	.62
Gender of partner	.02	0.28	.78
Role × Gender	.01	0.22	.83
Role × Gender of partner	.11	1.66	.09
Gender × Gender of partner	.07	0.97	.33
		Differentiated Cognitive Style	
Role	−.04	−0.57	.57
Gender	.19	3.08	.00
Gender of partner	.02	0.27	.79
Role × Gender	.06	0.93	.35
Role × Gender of partner	.17	2.51	.01
Gender × Gender of partner	−.04	−0.57	.57
		Integrated Cognitive Style	
Role	.03	0.55	.51
Gender	−.21	−3.13	.00
Gender of partner	−.17	−0.25	.77
Role × Gender	−.07	−0.95	.36
Role × Gender of partner	−.15	−2.47	.01
Gender × Gender of partner	.03	0.61	.59

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The fourth hypothesis had predicted an effect for gender of partner on the themes and cognitive structure of autobiographical memories, which would be moderated by role. The results showed a main effect for gender of partner, which indicated that both men and women who completed the task with a female partner (in either powerful or powerless role) included more "other" words in their memories, $\beta = -.16$; $p < .05$. In addition, the results showed a significant two-way (Social role × Gender of partner) interaction for both differentiation scores, $\beta = .17$; $p < .05$, and integration scores, $\beta = -.15$; $p < .05$. Both male and female helpers who completed the task with male partners in a powerful role had higher differentiation scores, $\beta = .19$; $p < .05$, than those who completed the task with female partners in a powerful role. Both male and female helpers who completed the task with female partners in a powerful role had higher integration scores, $\beta = -.18$; $p < .05$, than those who completed the task with male partners in a powerful role. There were no significant relationships between differentiation or integration scores of participants in powerful roles and their partners' gender.

Because of the significant interaction between social role and gender of partner in predicting powerless participants' cognitive style, we conducted a post hoc mediational analysis. In this analysis we tested whether the effects of powerful participants' (leaders') gender on their helping partner's cognitive style was mediated by gender differences in the leaders' cognitive styles. This analysis followed the recommendations of Kenny, Kashy, and Bolger (1998), using a series of multiple regression analyses. The analysis indicated that leaders' cognitive style neither partially nor completely mediated the relationship between their gender and their helpers' cognitive style. There was no significant relationship between leaders' and helpers' cognitive style scores, $r = .12$, $p > .05$, for both differentiation and integration. In other words, the effect of female leaders on their partners' heightened integration scores, and the effect of male leaders on their partners' heightened differentiation scores, cannot be accounted for by the leaders' own integration/differentiation scores.

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Discussion

The purpose of this study was to explore the effects of power-imbalanced social roles, gender, and gender of partner on the themes and cognitive structure of autobiographical memories following a brief social interaction. The results showed that powerful versus powerless social roles in a brief interaction contributed to the themes and cognitive structure of autobiographical memories encoded prior to the social interaction. Gender and gender of partner also contributed to memory content and structure.

Participants' differential emphases on communal versus agentic themes in their autobiographical narratives were consistent with the power-imbalanced roles they had just played. Communal autobiographical themes were heightened for participants who had played a powerless role in a fifteen-minute interaction, relative to participants who had played a powerful role. These results parallel previous research showing that people who hold subordinate social roles tend to be more supportive and attentive to others' needs, while those in positions of power tend to be more self-involved (e.g., Balkwell & Berger, 1996; Carli & Bukatko, 2000; Keltner et al., 2003). Our findings further expand this research to show that participating in a power-imbalanced social interaction, even for only brief periods of time, affects the salience of communal issues in subsequently recalled autobiographical memories.

Gender of partner was also found to influence the themes and structure of personal memories. Regardless of participant's gender and role, participants who had female partners included more communal themes in their memories than did those with male partners. Further, the structure of powerless partners' autobiographical memories was also related to the gender of their partners. Participants with male leaders structured their memories in differentiated ways and participants with female leaders structured their memories in integrated ways. This is consistent with research showing that powerless individuals are more sensitive to situational variables than are powerful individuals (Keltner et al., 2003). It is not clear what kinds of cognitive, affective, or behavioral processes differentially associated with leaders' gender may have influenced the structure of their helping partners' memories. This is particularly puzzling since the relationship between leaders' gender and their partners' cognitive styles was not mediated by leaders' cognitive styles. Other possible explanations for this relationship include gender differences in the emotional or behavioral styles of those in powerful roles, which were not measured in the present study. Alternatively, perhaps gender stereotypes evoked by the interaction led to changes in how participants in powerless roles thought about power-related memories and self-construals.

Finally, our findings are consistent with previous studies showing the influence of gender on the cognitive structure of personal memories (e.g., Woike et al., 1999). Both our data and previous studies showed that women structured their memories in a more integrated and less differentiated cognitive style, whereas men structured their memories in a more differentiated and less integrated cognitive style.

Our results support previous studies and theoretical models of autobiographical memory indicating that both contextual and individual difference factors influence the content and structure of autobiographical memories (Conway & Pleydell-Pearce, 2000; Nakash & Brody, 2006; Pasupathi, 2001; Skowronski & Walker, 2004). Our data add to these models in several ways. Previous models have been based largely on studies showing that people's memories shift as a function of the context in which the memory is being expressed, such as the gender or characteristics of the person to whom they are relaying the memory. Our data, in contrast, indicate that the social role aspects of the context influence the content and organization of memories retrieved subsequent to the interaction, even when those memories are not being expressed to the interaction partner.

As indicated, a shift in memory content and style may be functional for adapting to, or anticipating, future interactions that elicit similar roles. Memory content and style may be selected based partially on beliefs that future behavior may be influenced by the memory (Singer & Salovey, 1993), and on beliefs that memories are functional for maintaining relationships (Reese, 2002). The results are also consistent with attachment theory positing that people internalize aspects of their relationships to form general templates about their identity and role in social relationships (Main, 1996). Attachment theory suggests that the changes in memory content and organization reflect relatively more enduring changes in self-representations. Alternatively, it may be that the role effects we found for autobiographical memory themes are transient, as consistent with research on mood specificity (Blaney, 1986; Forgas, 1994; Rusting, 1998; Singer & Salovey, 1988).

It is not clear what the explanatory origins are of the social-role effects on the content and cognitive organization of autobiographical memories. One possibility is that our task acted as a social prime, which previous research has indicated can impact self-construals of agency and communion (Brewer & Gardner, 1996;

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Gardner, Gabriel, & Lee, 1999). For example, Gardner and her colleagues (1999) found that being primed with a communal self-construal task (e.g., circling "we" in a word search) mediated the changes in social values and judgments consistent with increased salience of communal self-construals. It is possible that the social roles people play may be social primes that subsequently affect many aspects of cognitive and self organization.

The effects of role on memory may also be due to changes in the underlying memories retrieved, to differential accessibility of underlying memories, or to modifications in how these memories are described (see also Skowronski & Walker, 2004). Since both the content and the organization of memories were affected by social context, it can be argued that both what was remembered and how it was remembered shifted. Although we made no predictions about the relationships between the cognitive structure of memories and their content, our finding that cognitive styles did not significantly relate to content themes of memories was somewhat surprising in light of previous research showing relationships between motives and cognitive styles in memory (Woike, 1995; Woike et al., 1999). Our data support the possibility that these two constructs may be tapping different levels of awareness (with cognitive organization being less conscious than content themes), and/or that the two constructs have different etiologies and functions.

The finding that the gender of the interaction partner, especially the gender of partners in powerful roles, can affect self-construals in autobiographical memories is noteworthy. It expands the literature on how same- and mixed sex dyads differentially affect behaviors (Carli & Bukatko, 2000; Deaux & LaFrance, 1998) to how they affect self-construals. It also expands what we know about the effects of leaders on their followers. Previous literature has documented an emotional contagion effect between leaders and helpers. For example, some research found that leaders can influence subordinates' affect and nonverbal behaviors, such as frequency of smiling (Cherulnik, Donley, Wiewel, & Miller, 2001). However, we know of no previous research indicating that leaders' gender can affect their partners' cognitive style. These results are quite fascinating and may open a new research pathway investigating leaders' influences not only on helpers' affect, but other aspects of their self-representations and identity. It is possible that leaders' gender was related to helpers' cognitive style, but not to helpers' agentic versus communal themes, because cognitive styles are less conscious and therefore less subject to conscious control by participants.[3]

It is puzzling why the third hypothesis of the study, which had predicted an interaction between social roles and gender on themes and structure of memories, was not supported. This is especially puzzling because the results of our previous research (Nakash & Brody, 2006) were consistent with this hypothesis, in that women who participated in an independent, agentic task subsequently narrated autobiographical memories with fewer agentic themes. We had interpreted these data to mean that women were ambivalent about, or uncomfortable with, agentic roles. In the current study perhaps men and women did not find the experimentally manipulated positions of powerlessness versus powerfulness threatening to their respective identities, as we had assumed they would. Including a measure to assess this assumption directly would have been helpful. In any case, the results of the current study are consistent with social constructivists' views (see Deaux & LaFrance, 1998; Deaux & Major, 1987; Eagly, 1987) that gender differences are so context specific that the main effect of social role overrides any interaction with gender.

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Whatever their explanatory origins, the memory effects we found in the current study are interesting and provocative. Indeed, the possibility that brief social interactions (including interactions that are part of the psychotherapy process) can actually alter self-construals as consistent with object relations and attachment theories is an exciting one that warrants further research. Moreover, these data may have far reaching implications for how the subordinate, or supportive roles typically played by women influence their self-construals. If a fifteen-minute social interaction with a stranger can significantly impact autobiographical memories, especially those in lower power positions, what would a lifetime of such experiences do?

Limitations and Future Directions

There were several puzzling aspects to the present study that warrant further investigation. First, some variables used to measure the themes of agency and communion, e.g., "other" words and "communal" words, were significant as hypothesized, while other variables were not. For example, even though interacting with a female partner increased "other" words in the narration of personal memories, it did not increase communal words more generally. It is not clear why some measures, or word categories, would be more sensitive to the effects of the experimental manipulation than others. Moreover, the communal content of memories seemed to be more sensitive to the effects of social role than the agentic content of narratives, such as the word "I" and words denoting agency. Perhaps this is because the discussion task interaction preceding the memory recall was itself interpersonal and thus heightened participants' sensitivity to communal themes. Further investigation examining different types of social interactions (including more stereotypically agentic or masculine tasks) might shed more light on these findings and would address whether our results were specific to the particular discussion task used in the current study. Finally, the study may have been limited by providing participants with concrete examples of memories related to leadership experiences. This might have systematically biased the content of the autobiographical memories for all groups. It is important to replicate the findings with different types of autobiographical memories. We chose power memories because we thought they afforded us the best chance of seeing experimental effects, but future studies could investigate the effects of social roles on other memories.

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Notes

1. The self-report questionnaires focused on gender role personality-related constructs, and included the Self-Construal Questionnaire (Singelis, 1994); the Personal Attributes Questionnaire (Spence & Helmreich, 1978); and the Dominance Scale of the California Personality Inventory (Gough, 1969). These questionnaires were administered to control for pre-experimental differences among the groups. Subsequent analyses showed no group differences. Although all groups were exposed similarly to a possible priming effect by filling out these questionnaires, one caveat is that the self-report measures might have had a differential effect as a function of gender, exacerbating or minimizing between-gender effects. Using a counterbalancing strategy for these measures in future studies would address such concerns.
2. Since past research has shown that the simple forms of complexity coding do not yield significant additional predictive information than elaborated forms (Woike et al., 1999), only the elaborated forms of differentiation and integration were coded.
3. We thank an anonymous reviewer for this suggestion.

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