ATTITUDES AND SOCIAL COGNITION

In Search of Self-Definition: Motivational Primacy of the Individual Self, Motivational Primacy of the Collective Self, or Contextual Primacy?

Lowell Gaertner and Constantine Sedikides University of North Carolina at Chapel Hill Kenneth Graetz University of Dayton

Four investigations examined the dynamics between the individual self (self-representation independent of group membership) and the collective self (self-representation derived from group membership). Relative to participants whose collective self was threatened, participants whose individual self was threatened (a) considered the threat more severe, (b) experienced a more negative mood, (c) reported more anger, and (d) derogated to a greater extent the source of threat. In addition, a self-description task indicated that participants generate more aspects of their individual than collective self. These effects occurred even when confounding variables (i.e., accessibility of the selves, group identification, individualism and collectivism, importance of threat domain) were controlled. The individual self is motivationally primary.

The self-concept comprises two fundamental self-representations: the collective self and the individual self. The collective self is a self-definition derived from membership in a social group. The individual self is a self-definition that is independent of group membership. Stated otherwise, persons achieve self-definition in terms of their group memberships and their personal characteristics.

Certainly, both selves are integral bases for self-definition. But which basis is more fundamental? That is, which self is the more motivationally primary? We address this issue by formulating three hypotheses: (a) the individual-self primacy hypothesis, according to which the individual self is the most fundamental basis for self-definition; (b) the collective-self primacy hypothesis, according to which the collective self is the most fundamental basis for self-definition; and, (c) the contextual primacy hypothesis, according to which neither self is inherently more fundamental, and, instead, primacy depends on contextual characteristics.

In the following sections, we review theoretical positions and empirical findings that provide circumstantial support for each of the three hypotheses. Following the review, we present four investigations designed to test the hypotheses.

Three Hypotheses Regarding Self-Definition

The Individual-Self Primacy Hypothesis

Foundations of the Hypothesis

Support for the individual-self primacy hypothesis is derived mostly from research on (a) self stability, (b) self-enhancement, and (c) the individual as the unit of natural selection.

Stability of the individual self. The core of the individual self consists of central self-conceptions or self-schemata. Such self-conceptions are regarded as important and highly descriptive of the individual self, and are held with high certainty. They facilitate processing of self-relevant information (Markus, 1977), remain resistant to external (e.g., feedback; Markus, 1977) and internal (e.g., mood; Sedikides, 1995) influences, perpetuate by incorporating positively affirming information (Sedikides, 1993), and seek memorial and behavioral confirmation (Swann, 1990). Self-schemata are conservative and autopreserving, features that led Greenwald (1980) to liken them to a totalitarian regime.

It is not surprising, then, that self-schemata are monuments of stability. They remain stable across time (Pelham, 1991; Pelham & Wachsmuth, 1995, Study 1) and across situations (Bem & Allen, 1974). They guide the perceptions of others (Sedikides & Skowronski, 1993). They are projected on others (Kenny & DePaulo, 1993; Marks & Miller, 1987). Even when they change, they do so slowly and predictably (Damon & Hart, 1986; Deutsch, Ruble, Brooks-Gunn, Flemming, & Stangor, 1988).

Correspondence concerning this article should be addressed to Lowell Gaertner, Department of Psychology, University of North Carolina, Chapel Hill, North Carolina 27599-3270. Electronic mail may be sent to lagaertn@email.unc.edu.

Lowell Gaertner and Constantine Sedikides, Department of Psychology, University of North Carolina at Chapel Hill; Kenneth Graetz, Department of Psychology, University of Dayton.

We thank Samuel Gaertner for his comments on a draft of this article; Dan Ariely for his help with the computer program used in Experiment 1; and Makeba Green, Taura McCleod, Jennifer Potter, Yvonne Seniuk, Kristen Stanley, and Misty Sykes for their assistance with data collection.

Enhancement of the individual self. There is a strong motivation to protect and enhance the positivity of the individual self (for reviews, see Brown & Dutton, 1995; Hoorens, 1993; Sedikides & Strube, 1997). For example, persons have a better memory for positive than negative self-relevant attributes (Skowronski, Betz, Thompson, & Shannon, 1991), perceive their own attributes as more positive than those of the average person (Alicke, 1985), are more likely to make internal attributions for favorable than unfavorable outcomes (Campbell & Sedikides, 1998), and avoid social comparisons following poor personal performance in self-relevant domains (Gibbons, Persson Benbow, & Gerrard, 1994). Of direct relevance to the primacy hypotheses is research on the self-serving bias in group settings (Forsyth & Schlenker, 1977; Schlenker & Miller, 1977; for a review, see Mullen & Riordan, 1988). Group members take individual credit for the group's success, but deny individual blame for the group's failure. Taylor and her colleagues (Taylor & Armor, 1996; Taylor & Brown, 1988) suggested that positive illusions about one's personal qualities are characteristic of normal human thought and function to maintain mental health. Thus, individuals value highly and pursue vigorously a positive self-concept.

The individual as the unit of evolutionary selection. Classic evolutionary theory argues that natural selection acts on the individual (rather than the group) of a given species (Dawkins & Krebs, 1978; Wallace, 1973; Wiley, 1983). Thus, the individual self would appear to be an adaptive human trait that has evolved in response to species-idiosyncratic ecological and social pressures (Sedikides & Skowronski, 1997). The evolution of the individual self affords several advantages to the organism, such as facilitating the processing of information about self and others, regulating affect, and directing behavior (Sedikides & Skowronski, 1997).

Empirical Support for the Hypothesis

Past research provides comparative tests of the individual and collective self that are consistent with the individual-self primacy hypothesis. For example, participants evaluate the self more favorably than the ingroup (Biernat, Vescio, & Green, 1996, Study 3; Lindeman, 1997; Lindeman & Sundvik, 1995) and perceive the self as more resistant to media propaganda than the ingroup (Duck, Hogg, & Terry, 1995). Also, participants accentuate intragroup differences more than intragroup similarities (Simon, Pantaleo, & Mummendey, 1995), suggesting the privileged status of the individual self in self-definition.

The Collective-Self Primacy Hypothesis

Foundations of the Hypothesis

Support for the collective-self primacy hypothesis is derived mainly from (a) basic research on group processes, (b) perspectives of evolution that posit that the group serves either as the unit of natural selection or the primary environment for selection, and (c) the position that the collective self provides the optimal level of self-definition.

The impact of the group on the individual. Basic research on intragroup and intergroup processes has demonstrated the strong influence of the group on the individual. For example, individuals often alter their actions in response to the position of the group's

majority (Asch, 1951) and, at times, to the group's minority (Moscovici, 1976). Furthermore, group discussion polarizes members' responses in the direction of the group's tendency (D. G. Myers & Lamm, 1976; Stoner, 1968; Turner, Wetherell, & Hogg, 1989) and the presence of others often facilitates an individual's performance (Geen, 1989; Triplett, 1897; Zajonc, 1965). Last, individuals favor ingroup members over outgroup members on intergroup resource allocation and evaluation tasks (Brewer, 1979) and coordinate information processing strategies with ingroup members and relationship partners (Sedikides, Campbell, Reeder, & Elliot, 1998b; Wegner, 1995; Wegner, Erber, & Raymond, 1991). Such tendencies for behavior to be modified by group processes are consistent with the primacy of the collective-self perspective.

The role of the group in natural selection. Perspectives on evolution that posit group-level selection (Bulmer, 1978; Sober, 1980; Wade, 1978) suggest that, at times, forces of natural selection operate on the group, in addition to the individual. Grouplevel selection selects behaviors that favor the long-term welfare of the collective. That is, fit populations replace less fit populations. Group-level selection provides an evolutionary context for the development of the primacy of the collective self. For example, Wilson and Sober (1994) described a hypothetical situation in which an individual identifies with her group to the extent that she does not consider the possibility of profiting at the expense of the group. Wilson and Sober suggested that, although within the group the civic-minded individual will likely suffer exploitation by less civic-minded members, groups comprising individuals who favor the collective over the self will be superior in competition with groups of individuals who favor the self over the collective.

Alternative perspectives on human evolution view the social group as the primary environment for natural selection at the individual level (Brewer & Caporael, 1990; Caporael, 1997; Caporael & Brewer, 1991). The social group is considered a primary survival strategy of the human species: groups provide shared resources, labor, information, protection from predators, and shelter from the elements. Therefore, individuals who have the capacities for group life (e.g., communication, cooperation, group loyalty) have a better chance of survival than individuals less suited for group life. A motive for the primacy of the collective self may have developed and proved adaptive in that it may facilitate acclamation to group life (Stevens & Fiske, 1995).

The collective self as the optimal level of self-definition. Optimal distinctiveness theory (ODT; Brewer, 1991) states that the collective self provides the optimal level of self-definition. Ac-

¹ On the other hand, social loafing research indicates that coaction can inhibit an individual's performance (Harkins, 1987). The social-loafing effect garners evidence for the individual-self primacy hypothesis, in that individuals will often free load on the presumed productivity of the group. As a caveat, however, recent research points to a social compensation effect: Individuals, when motivated, increase productivity to compensate for the perceived deficiency of coworkers (Williams & Karau, 1991).

² However, the reciprocity hypothesis (Rabbie & Lodewijkx, 1994; Rabbie, Schot, & Visser, 1989) suggests that the ingroup favoritism found in minimal group research is an attempt to maximize economic self-interest by reciprocating favorable allocations with fellow ingroup members (Gaertner, 1998). Such an interpretation is consistent with the individual-self primacy hypothesis.

cording to ODT, self-definition fluctuates as a means of maximizing the competing needs for assimilation and differentiation. Although self-definition in terms of the individual self provides maximum differentiation (i.e., self as a unique individual), at the same time it minimizes assimilation. Self-definition in terms of the collective self, however, maximizes assimilation and differentiation through intragroup and intergroup comparisons, respectively. ODT contends that the prepotent self will be a collective identity that provides both assimilation with the ingroup and differentiation from outgroups.

Empirical Support for the Hypothesis

Biernat et al. (1996, Study 1) examined sorority members' ratings of themselves and their own sorority (ingroup) on attributes stereotypic of sororities. Although positive traits were rated as equally descriptive of the self and the ingroup, negative traits were rated as more descriptive of the self than the ingroup. Furthermore, Hirt, Zillman, Erickson, and Kennedy (1992, Experiment 2) reported that sports fans experienced a more negative mood state following group failure (i.e., fans viewed a basketball game in which their team lost) than personal failure (i.e., fans received unfavorable feedback about their personal performance on an analogies test). Finally, Moghaddam, Stolkin, and Hutcheson (1997) found that both positive and negative events (e.g., the creation of smoke-free public spaces, increased access to information, racial discrimination, the threat of AIDS) are perceived as having more impact on one's group than on one's self. However, as Moghaddam et al. suggested, this tendency may have more to do with a failure to adjust for group size when making estimates of effect than a motivational bias to exaggerate the impact on the group.

The Contextual Primacy Hypothesis

Foundations of the Hypothesis

The contextual primacy hypothesis is based on research that attests to the malleability of the self-concept and its susceptibility to contextual influences. According to this hypothesis, the relative primacy of the individual and collective self depends on contextual factors that influence the extent to which each self is momentarily accessible.

Markus and colleagues (Markus & Kunda, 1986; Markus & Wurf, 1987) advanced the idea of the working self-concept as a neans of accounting for the concurrent stability and malleability of the self. The working self-concept is the set of self-aspects that are accessible at any given moment. The accessibility of a self-aspect is influenced by the importance of the aspect, the individual's motivational state, and situational factors. Thus, the working self-concept (i.e., momentary self-definition) is viewed as a shifting array of chronically accessible self-aspects linked with more ephemeral- and context-based self-aspects.

Self-categorization theory (SCT; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner, Oakes, Haslam, & McGarty, 1994; Furner & Onorato, in press) also posits a malleable self-concept. According to SCT, self-definition varies, in part, from self as a mique individual to self as an interchangeable group member. Variation in self-definition arises as a function of the contrasts

provided by the social context. Based on the principle of metacontrast (i.e., social categories become salient to the extent to which the average perceived difference between aggregates of stimuli exceed the average perceived difference within the aggregates of stimuli; Turner et al., 1987), self-definition fluctuates toward the collective self in intergroup contexts and toward the individual self in intragroup contexts.

Empirical Support for the Hypothesis

Evidence has been reported for the sociocontextual dependence of self-definition. Persons are more likely to define themselves in terms of their collective self in intergroup settings than in intragroup settings (Hogg & Turner, 1987), when the ingroup is a numeric minority than a majority (Simon & Hamilton, 1994), and when the ingroup has a positively valenced than a negatively valenced status (Simon et al., 1995).

Critique of Existing Research

In the previous sections, we summarized empirical support for the three hypotheses. Given that support exists for each hypothesis, the current status of the primacy question remains ambiguous. The previous studies, however, were not necessarily designed to test for motivational primacy and also (from our point of view) contain methodological shortcomings that complicate a comparison of the motivational significance of the individual and collective selves.

First, if the relative reaction of each self to threatening feedback is used to assess motivational primacy, the relative importance of the domain of the threat should be controlled. Threatening the selves on dissimilar domains (e.g., Hirt et al., 1992) may confound target of threat (i.e., individual or collective self) with importance of the domain. Regardless of which self is threatened, an important domain will have greater impact than a domain of lesser importance.

Second, the independent motivational potencies of each self should be assessed. Often, feedback directed to the collective self is contaminated with information concerning the individual self as well (Biernat et al., 1996; Moghaddam et al., 1997). For example, a group member may assume personal responsibility for the quality of the group's performance. In such a situation, it is not clear which self the response to the performance information reflects.

Third, processes that may occur during a delay between the onset of an event and the assessment of the reaction to the event (Moghaddam et al., 1997) should be taken into account. During the delay, the individual may adjust to the event and return to equilibrium (Suh, Diener, & Fujita, 1996). For example, initially, the discovery of a personal deficiency may be more disturbing than the discovery of a collective deficiency and elicit a coping strategy. Over time, the personal deficiency may come to be just as (un)disturbing as is the collective deficiency. A delayed measurement may lead to different conclusions concerning motivational primacy than would an immediate measurement. Finally, given the proposition of the contextual primacy hypothesis that primacy varies with relative accessibility, the accessibility of each self should be controlled.

The Present Research

In this article, we present four investigations (three experiments and one correlational study) designed to examine the relative motivational significance of the individual self and collective self. In each investigation, we implemented several methodological controls to observe the tension and dynamics between the individual self and the collective self. Across the investigations we used different methods for controlling the accessibility of each self (i.e., simultaneously priming both selves to render them equally accessible, varying the situation to maximize the accessibility of one self while minimizing the accessibility of the other, measuring levels of group identification, assessing individualism and collectivism). In the first three investigations, we threatened each self on an identical domain, controlled information directed at the collective self such that it did not contain information about the individual self, and assessed reactions immediately following the threat. In the fourth investigation, we controlled for the cultural value orientations of individualism and collectivism and observed participants' self-definitional preferences.

Investigation 1

In Investigation 1, we threatened or enhanced either the individual or collective self. Subsequently, we assessed the perceived severity of the threat and ensuing shifts in self-definitional preferences. We assessed these shifts mainly through measures of self-group similarity and degree of identification with the group.

According to the individual-self primacy hypothesis, when the individual self is threatened, self-definition will be derived from the collective self. That is, participants will use the collective self to protect the individual self. However, a threat against the collective self will not result in a redefinition of the self. This hypothesis states that participants will regard a threat to the individual self as more severe than a threat to the collective self—even when the two selves are equally accessible, even when the feedback is identical, and even when the feedback pertains to the same self-aspect. This pattern will occur because the individual self has a higher motivational significance for self-interpretation than the collective self.

The collective-self primacy hypothesis, however, predicts a different pattern of results. When the collective self is threatened, self-definition will be derived from the individual self. That is, participants will use the individual self to protect the collective self. However, a threat against the individual self will not result in a redefinition of the self. This hypothesis states that participants will regard a threat to the collective self as more severe than a threat to the individual self—even when the two selves are equally accessible, even when the feedback is identical, and even when the feedback pertains to the same self-aspect. This pattern will occur because the collective self has a higher motivational significance for self-interpretation than the individual self.

The contextual primacy hypothesis, on the other hand, predicts yet another pattern of results. Participants will be equally likely to use one self to buffer a threat against the other self. This hypothesis states that, when the individual self is threatened, self-definition will be derived from the collective self. Likewise, when the collective self is threatened, self-definition will be derived from the individual self. Attacks against the individual self and the collective self will be perceived as equally threatening, and the threat will be buffered by redefining one's self in terms of the nonthreatened self.

Pilot Studies

To manipulate threat, we provided participants with false feed-back pertaining to either the individual self or collective self (i.e., the group University of North Carolina at Chapel Hill [UNC-CH]-women). The feedback consisted of either a positive or negative trait that is stereotypical of UNC-CH women. We conducted two pilot studies to determine the traits that our student population regarded as most typically positive and negative of UNC-CH women. In the pilot studies and the following investigations, participants were UNC-CH introductory psychology students fulfilling a course option.

In the first pilot study, 27 women each generated 12 traits that were typical or atypical of UNC-CH women and positively or negatively valenced. Each participant listed three traits for each of the four categories formed by a 2 (typical of women: yes, no) \times 2 (valence: positive, negative) classification. From these listings, we derived 24 nonredundant traits.

In the second pilot study, 26 women rated each of the 24 traits for how typical the trait is of UNC-CH women and the valence of the trait. The ratings were made on nine point scales on which 1 indicated extremely atypical or extremely negative and 9 indicated extremely typical or extremely positive. We selected the two traits that were rated, on average, the most typically positive (i.e., emotionally expressive, $M_{\rm typicality} = 7.81$, $M_{\rm valence} = 7.15$) and typically negative (i.e., moody, $M_{\rm typicality} = 6.62$, $M_{\rm valence} = 2.73$) to serve as the stimuli for the threat manipulation.

Method

Participants, Experimental Design, and Procedure

Participants were 128 women. We used a balanced 2 (feedback valence: positive, negative) \times 2 (feedback recipient: individual self, collective self) between-participants factorial design.

Participants arrived in the laboratory to be tested in an experiment titled Characteristics of Females. Participants were seated in separate cubicles; computerized instructions informed them that the experiment was conducted by the department of psychology on behalf of the (fabricated) Office of Student Affairs (OSA). Participants were further informed that for the OSA to function most effectively, it needed to understand better the attributes and characteristics of the student body.

We made every effort in these introductory instructions to prime both the individual and the relevant collective self (gender). To prime the individual self, we told participants that the student body at UNC-CH is "extremely diverse; after all, each one of you is an individual with your own unique background, personality traits, skills, abilities, and hobbies." To prime the collective self, we told participants,

However, you also share membership with other students in various social groups. Previous research has indicated that one of the most important social groups to which people belong is gender. That is, you are female and you share membership in the social group UNC-CH women.

Participants were further told that the OSA has authorized the psychology department to collect information about the characteristics of the female student body (priming of collective self). Participants were encouraged to answer the questions honestly and were promised anonymity. To ostensibly provide the OSA with an accurate assessment of the characteristics of the female student body (priming of collective self), each participant was asked to complete a computerized version of the Berkeley Personality Inventory

(BPI). The BPI was described as a "highly reliable and valid measure of personality characteristics and traits" (priming of individual self).

Then, participants were informed that the BPI comprised 60 statements. The BPI was administered in two parts. The first part (30 statements) was in the form of sentences that were vaguely (but nondiagnostically) related to the trait emotional or moody. Examples include (a) "One of my favorite pastimes is sitting in front of a crackling fire;" (b) "Sad movies touch me deeply;" and (c) "When I am nervous, I get shaky all over." The second part (30 statements) asked participants to indicate how frequently, during the past month, they felt each of 30 emotions. Examples of emotions include cheerful, afraid, and sad. Each statement was presented on a separate computer screen, and participants indicated the degree to which they agreed with each statement.

Next, participants were informed that the computer was in the process of scoring their answers to the BPI. While participants waited, we initiated the manipulations. The computer provided participants with feedback that was either positive or negative, and the feedback was directed either at the individual or the collective self.

In the case of negative feedback directed at the individual self, participants were informed that the BPI assesses the trait of moodiness, which refers to an

inability to control one's mood state. People who are moody experience frequent and inconsistent shifts in their feelings in response to various situational cues. Moodiness creates potential problems in social interactions, because others are unable to anticipate one's mood state and behavior.

Participants were further informed that moodiness is "a very important personality trait. High levels of moodiness have been found to be related to poor adjustment to college life, pessimism, poor mental health, unsatisfactory social relationships, low academic success, and even low success after college." The computer then indicated that the scoring of the BPI was completed. Participants pressed a key and received the following information: "The BPI indicates that participant #53191 is excessively moody." Finally, the above bogus information about the trait moodiness and its negative consequences were reiterated in the second person (i.e., "Moodiness refers to an inability to control your mood state . . .").

In the case of negative feedback directed at the collective self, we withheld information that was diagnostic of the individual self. Participants were informed that,

the computer has scored your responses to the BPI and forwarded them directly to the OSA. We regret to inform you that the OSA will not allow us to give you personalized feedback. We will not be able to tell you how you scored on the BPI. However, we can provide you with the BPI scores of UNC-CH women, in general. These scores will be given to you in aggregate form. That is, the responses of UNC-CH women tested so far (more than 1,500) have been pooled together, and you will receive the average score of all these responses. Please note that your score is NOT yet included in the women's average score which you will receive. As was just explained, the OSA will not allow us to include your score in the feedback that you will receive.

Next, we delivered the feedback. Participants received a general paragraph describing bogus information about the trait moodiness and its consequences (as in the negative feedback directed at the individual self condition). Then, the computer screen delivered feedback in aggregate form (i.e., "The BPI indicates that UNC-CH women are excessively moody"). Finally, information about the trait moodiness and its negative consequences was reiterated in reference to UNC women (i.e., "Moodiness refers to an inability for UNC-CH women to control their mood state...").

In the case of positive feedback directed at the individual self, participants were informed that the BPI assesses the trait emotional expressiveness, which refers to

one's ability to express appropriately a wide array of emotions (e.g., joy, contentment, anger). Emotionally expressive persons reveal, rather than suppress, their feelings. Emotional expressiveness aids social interaction, because others are better able to respond to one's needs. Emotional expressiveness is a very important personality trait. High levels of emotional expressiveness have been found to be related to successful adjustment to college life, optimism, mental health, satisfactory social relationships, academic success, and success after college.

Each participant was informed that she was "very emotionally expressive." At the end, the bogus information about the trait emotional expressiveness and its positive consequences was reiterated in the second person.

Finally, in the case of positive feedback directed at the collective self, participants were informed that only group-level feedback was available (i.e., feedback pertaining to UNC-CH women excluding the individual self). Participants learned about the trait emotional expressiveness and its positive implications, learned that UNC-CH women are emotionally expressive, and relearned all about the ostensible benefits of this trait as referring to UNC women.

Following the manipulations, participants completed dependent measures that were introduced as additional assessments of the characteristics of women.

Dependent Measures

The first measure was perceived similarity with the group versus perceived individual uniqueness. Participants responded to three scales that assessed the degree to which participants perceived themselves as typical group members versus unique individuals. Each scale was anchored with the following labels: (a) 1 = I am very similar to UNC women, 9 = I am a unique individual; (b) 1 = My personality attributes are quite similar to the attributes of UNC women, 9 = My personality attributes are totally unique; and (c) 1 = My beliefs and values are quite similar to the beliefs and values of UNC women, 9 = My beliefs and values are totally unique.

The second measure was identification with the group versus the self. Participants responded to three scales that assessed the degree to which participants identified with the group (i.e., UNC women) versus the individual self. Each scale was anchored with the following labels: (a) 1 = I strongly identify with the group UNC women, 9 = I only identify with myself; (b) 1 = I am proud to belong to the group UNC women, 9 = I am proud to just be myself; and (c) 1 = I value my membership in the group UNC women, 9 = I value being myself.

The experiment ended with two questions concerning the perceived valence of feedback. Participants were first reminded that "in this study, you responded to the BPI and received feedback about the BPI." Then participants were asked (a) was the feedback you received positive (good) or negative (bad)? ($1 = very \ negative, 9 = very \ positive$); and (b) how pleased or displeased with the feedback did you feel when you received it? ($1 = very \ displeased, 9 = very \ pleased$). Careful debriefing concluded the experimental session.

Results

Valence of Feedback

We formed a valence index by averaging participants' responses to the questions "Was the feedback you received positive or negative?" and "How pleased or displeased with the feedback did you feel when you received it?" ($\alpha = .94$). We entered the index into a 2 (feedback valence) \times 2 (feedback recipient) analysis of variance (ANOVA).

Participants rated negative feedback less favorably (M = 3.78) than positive feedback (M = 6.78), F(1, 124) = 120.41, p < .0001.

More important, the Valence \times Recipient interaction was significant, F(1, 124) = 33.25, p < .0001. Participants perceived negative feedback less favorably when it referred to the individual self (M=2.80) than the collective self (M=4.77), t(62)=18.10, p < .001, and perceived positive feedback more favorably when it referred to the individual self (M=7.52) than the collective self (M=6.23), t(62)=15.85, p < .0002. Consistent with the feedback valence main effect, participants rated negative feedback less favorably than positive feedback when the feedback referred to both the individual self, t(62)=171.00, p < .0001, and collective self, t(62)=11.51, p < .002. In summary, feedback about the individual self was perceived more extremely than feedback about the collective self, a pattern that supports the individual-self primacy hypothesis.

Self-Definitional Preference: Similarity and Identification

We formed indexes of perceived similarity and identification by averaging participants' responses to the three similarity questions ($\alpha = .78$) and the three identification questions ($\alpha = .85$), respectively. We entered these indexes into a 2 (feedback valence) \times 2 (feedback recipient) multivariate analysis of variance (MANOVA). At the multivariate level, only the Valence \times Recipient interaction was significant, F(2, 123) = 3.51, p < .04.

At the univariate level, the Valence × Recipient interaction was significant for the similarity index, F(1, 124) = 5.95, p < .02, and the identification index, F(1, 124) = 3.96, p < .05. These interactions indicate that participants emphasized their collective self to buffer an attack against the individual self. Yet analogous effects were not observed when the collective self was threatened. Table 1 contains the mean similarity and identification ratings as a function of feedback and recipient. When the recipient of the feedback was the individual self, negative feedback led participants to express more similarity and identification with their ingroup than did positive feedback, $t_{\text{similarity}}(62) = 8.75, p < .004$ and $t_{\text{identification}}(62) = 7.53$, p < .008. However, when the recipient of the feedback was the collective self, negative and positive feedback did not influence expressions of similarity, t(62) = 0.29, p < .59, or identification, t(62) = 0.01, p < .91. In summary, shifts in self-definitional preferences occurred following an attack

Table 1
Mean Similarity and Identification Rating as a Function of
Feedback Valence and Recipient

Recipient	Feedback valence		
	Positive	Negative	
Individual self Collective self	Similarity 7.09_a 6.44_a	6.21 _b 6.61 _a	
Individual self Collective self	Identification 6.09 _a 5.75 _a	4.91 _b 5.80 _a	

Note. Participants made similarity and identification ratings on 9-point scales ranging from 1 (similarity to group or identification with the group) to 9 (individual uniqueness or identification with the self). Means in the same row with different subscripts differed at p < .05.

only on the individual self, a pattern that supports the individualself primacy hypothesis.

Discussion

The individual-self primacy hypothesis assigns primary motivational significance to the individual self. The collective-self primacy hypothesis assigns primary motivational significance to the collective self. The contextual primacy hypothesis assigns equal motivational significance to the individual and collective self.

Investigation 1 controlled for several variables that would confound an examination of motivational primacy. The experiment controlled for accessibility of the individual and collective self, for feedback domain (i.e., the same information pertained to both selves), and for independence of feedback for each type of self (i.e., information about the collective self was not contaminated with information about the individual self). In the presence of these controls, participants considered a threat more severe when directed at the individual than the collective self. When the individual self was threatened, participants deemphasized their uniqueness and identified more strongly with the ingroup. Analogous effects were not observed when the collective self was threatened. These findings support the individual-self primacy hypothesis.

Responses to the identification and similarity measures corroborate Simon et al.'s (1995) finding that individuals emphasize the relative differences as opposed to similarities among self and group. Following the feedback, participants perceived themselves as unique individuals who identify with the individual self more than with the collective self. Only in the negative-individual self condition did the mean ratings (i.e., identification index) fall below the scale midpoint (i.e., the division between "identification with group" versus "identification with self").

The pattern of self-definition renders unlikely an alternative to the individual-primacy hypothesis. The lack of change in self-definition in response to feedback directed at the collective self could be construed as support for the collective-self primacy hypothesis. That is, the lack of change in self-definition in the face of a threat to the group may indicate a psychological rally for group solidarity: participants may have been unwilling to distance themselves from the group (or to deemphasize the collective self) when the group was threatened. However, the preference to define the self as a unique individual is inconsistent with a solidarity (collective-self primacy) explanation. If participants showed solidarity for their threatened group, they should have defined themselves primarily as group members, not as unique individuals. The pattern in self-definition is consistent with the individual-self primacy hypothesis.

The shift in self-definition following the threat to the individual self extends research indicating that self-definition in terms of the collective self disengages persons from motivational biases associated with the individual self (Smith & Spears, 1996). Smith and Spears varied whether self-definition was derived from the individual or collective self. When self-definition was derived from the individual self, participants used coping strategies to adjust to individual disadvantage (i.e., the desire for a monetary reward was lessened when facing a difficult than an easy task). When self-definition was derived from the collective self, however, individual disadvantage no longer elicited coping strategies (i.e., the desire for a monetary reward was equivalent when facing a diffi-

cult and an easy task). The results of the present investigation extend the findings of Smith and Spears by suggesting that persons may cope with a threat against the individual self by redefining themselves in terms of an accessible collective self (Cialdini et al., 1976). In line with the individual-self primacy hypothesis, however, only a threat to the individual self motivated a shift in self-definition. Likewise, in Smith and Spears' experiment, unlike individual disadvantage, collective disadvantage did not elicit coping strategies even when the collective self was accessible.

Although Investigation 1 provided support for the individualself primacy hypothesis, we did not take into account the extent to which a participant identified with the group before group threat. A collective self should be motivationally primary to the extent that it is an important aspect of self-definition. Indeed, level of ingroup identification is a critical moderator of responses to group threat (Branscombe & Wann, 1994; Doojse, Ellemers, & Spears, 1995; Spears, Doojse, & Ellemers, 1997). For example, highidentifiers (i.e., individuals who identify strongly with their ingroup) manifest greater identity-enhancement techniques (i.e., outgroup derogation, perceptions of ingroup homogeneity) under conditions of group threat than under nonthreatening conditions. For low-identifiers, however, manipulations of group threat do not influence the use of identity-enhancement techniques. Therefore, it would be informative to compare reactions to a threat against the individual versus the collective self for both high and low group identifiers. For high-identifiers, the collective self may be just as primary as, if not more primary than, the individual self. For low-identifiers, the individual self will have primacy. The individual-self primacy hypothesis would be supported if a threat to the individual self produced a stronger reaction than a threat to the collective self regardless of level of identification.

We have reason to doubt the role of group identification as a moderator of individual-self primacy. Recent research has indicated that both low and high group identifiers evaluate themselves more favorably than their group (Lindeman, 1997). Furthermore, the tendency to perceive one's self as more resistant to media propaganda than one's group is stronger for high than low group identifiers (Duck et al., 1995).

Investigation 2

To find out whether level of group identification moderates the motivational primacy of the individual self, we examined the reactions of high and low group identifiers to negative feedback directed at either the individual or the collective self. The relative negativity of the participants' mood state and the extent to which they derogate the negative feedback they receive served as measures of motivational primacy. Persons can maintain a positive view of self in the face of negative feedback by disparaging this feedback (Wyer & Frey, 1983). An attack against the more primary self should result in a more negative mood state and a stronger derogation of the threatening feedback (i.e., by decreasing its perceived importance) than an attack against the less primary self.

In Investigation 1, we controlled for feedback domain by providing the individual and collective self with identical feedback. Although each self received the same feedback, this feedback may have been more or less important to a particular self. The feedback pertained to traits (emotional expressiveness and moodiness) that

are typical of the collective self. Thus, the feedback may have been more important to the collective self, thus stacking the deck against the individual-self primacy hypothesis. In Investigation 2, we controlled statistically for the importance of the feedback domain by providing each self with identical feedback and assessing the perceived importance of the feedback domain before the onset of the feedback.

Method

Participants were 212 students (164 were women, 45 were men, and the gender of 3 participants was not coded). The design was a 2 (feedback recipient: individual self vs. collective self) \times 2 (group identification: low vs. high) between-subjects factorial. We threatened either the individual or collective self by providing the participant with negative feedback about his or her personal performance or his or her group's (UNC-CH) performance on a bogus creativity test. Participants were categorized as a low or high group identifier on the basis of a median split on the mean of a three-item group identification measure.

More specifically, participants arrived for an experiment that was conducted allegedly on behalf of a national testing agency that gathered data on the creativity scores of college students. Participants were seated in individual cubicles and were informed that they would complete a highly valid creativity test.

Before the creativity test, participants completed a demographics questionnaire. Embedded within the demographic questions were the following three items that assessed the participant's degree of identification with the university (UNC-CH; i.e., the collective self that was being attacked): "How important is your university to you?", "To what extent does being a member of your university reflect an important aspect of who you are?", and "How much do you identify with your university?" Participants responded to each identification question on a 7-point scale ranging from 1 (minimal identification) to 7 (maximal identification). The remaining demographic questions were benign filler items (e.g., "On average, how many credit hours do you take per semester?").

To assess the relative importance of creativity to the individual and collective self before feedback, we had participants rate how important the trait creativity was either to themselves (individual self) or to UNC-CH students (collective self). Participants rated the importance of creativity on a 7-point scale ranging from 1 (not at all important) to 7 (very important). Participants then completed the creativity test.

The Lange-Elliot creativity test (Sedikides, Campbell, Reeder, & Elliot, 1998a) consists of two segments. In each segment, participants have 5 min to list as many uses as possible for a particular object. We used brick as the object for the first segment and candle for the second segment. At the completion of the test, the experimenter collected participants' responses and allegedly scored their performance. While their performance was being scored, the participants worked on a distractor task (evaluated the aesthetic quality of various letters and numbers). The experimenter announced that the test was scored and provided each participant with written feedback.

The threat to the individual self informed the participant that "your total score on the Lange-Elliot Creativity Test was calculated to be at the 31st percentile. This means that your score is worse than 69% of the creativity scores in the normative reference sample." This feedback was accompanied by a histogram that provided a graphic depiction of the participant's performance.

The threat to the collective self informed the participant that for ethical reasons we could not provide personalized feedback, but we could provide feedback about the average performance of UNC-CH students. We emphasized that the participant's own score had not yet been included in UNC-CH's average score. Participants were then informed that "UNC-CH's total score on the Lange-Elliot Creativity Test was calculated to be at the 31st percentile. This means that UNC-CH's score is worse than 69% of

the creativity scores in the normative reference sample." This feedback was also accompanied by a graphic depiction of UNC-CH's performance.

To examine the extent of derogation of the threatening information, we asked participants to indicate the importance of the outcome of the test either for "you" (individual self) or "UNC-CH" (collective self). Participants rated the importance of the outcome on a 7-point scale ranging from 1 (not at all important) to 7 (very important).

Next, participants indicated the extent to which each of 14 adjectives described their current feelings. We selected the adjectives from the Multiple Affect Adjective Checklist (MAACL; Zuckerman & Lubin, 1965). Participants made their ratings on a 7-point scale ranging from 1 (not at all) to 7 (very much). Seven of the adjectives (i.e., annoyed, angry, bitter, frustrated, irritated, threatened, and upset) assessed agitation, whereas the remaining 7 adjectives (i.e., blue, disappointed, down, gloomy, low, miserable, and sad) assessed dejection. Finally, participants were debriefed.

Results

To categorize participants as either low or high group identifiers, we performed a median split on the mean response to the three group-identification items ($\alpha = .82$; Mdn = 5.67). This indicates that participants considered UNC-CH to be an important group to which they belonged.

Pretest Importance

We examined whether the domain on which participants were threatened (i.e., creativity) was of differential importance to the individual and collective self by entering the pretest importance rating of creativity into a 2 (recipient) \times 2 (identification) ANOVA. Only the recipient main effect was significant, F(1, 208) = 12.94, p < .0004. Before feedback, participants rated creativity as more important for the individual (M = 5.54) than the collective (M = 4.97) self. In all subsequent analyses, we used each participant's pretest importance rating as a covariate to prevent confounding the importance of the domain of threat with the recipient of threat (i.e., individual self or collective self).

Derogation of Feedback

We entered the postfeedback rating of the importance of the test outcome into a 2 (recipient) \times 2 (identification) analysis of covariance (ANCOVA). Consistent with the individual-self primacy hypothesis, only the recipient main effect, F(1, 207) = 14.83, p < .0002, was significant. Participants perceived the negative outcome of the creativity test as less important when it threatened the individual (M = 3.03) rather than the collective (M = 4.00) self.³ The Recipient \times Identification interaction was not significant, F(1, 207) = 0.22, ns. Regardless of their level of group identification, participants derogated to a greater degree feedback that threatened the individual self as opposed to the collective self.

Mood State

We entered the average rating to the 14 negative-mood adjectives ($\alpha = .93$) into the 2 (recipient) \times 2 (identification) ANCOVA.⁴ Participants experienced more negativity in their mood states following a threat to the individual self (M = 2.58) than following a threat to the collective self (M = 2.26), F(1, 206) = 3.67, p < .057. The Recipient \times Identification interaction was not significant, F(1, 206) = 0.10, n.s. Consistent with the

individual-self primacy hypothesis, group identification did not moderate individual primacy.

Discussion

In Investigation 2 we controlled for two additional variables that could qualify the individual-self primacy hypothesis: level of group identification and relative importance of feedback domain. Even in the presence of these controls, participants were more derogatory of threatening information and experienced a more negative mood state when the individual self was threatened than when the collective self was threatened. Level of group identification did not moderate the motivational primacy of the individual self. Regardless of the extent to which they identified with the group, participants reacted more strongly to a threat against the individual than the collective self.

Investigation 3

Investigations 1 and 2 provide converging support for the individual-self primacy hypothesis. We conducted a third experiment to conceptually replicate and extend the findings of the previous experiments. In Investigation 1, we controlled for the relative accessibility of the two selves by making each self simultaneously accessible. That is, we instructed participants to think of themselves as both unique individuals and group members. In Investigation 2 we controlled for accessibility by rendering each self accessible and controlling level of group identification. An alternative approach, however, would be to maximize the accessibility of oneself while minimizing the accessibility of the other. We used this approach in the present investigation.

Following principles of self-categorization theory (SCT), we varied the social context to maximize the accessibility of one self while minimizing the accessibility of the other self. According to SCT, self-definition fluctuates toward the collective self in intergroup contexts and toward the individual self in interpersonal contexts (Hogg & Turner, 1987; Turner et al., 1987). Subsequently, we directed either insulting or noninsulting information to either the participant's individual self in an interpersonal context or to the collective self in an intergroup context. A participant's degree of self-reported anger served as a measure of motivational primacy. Stated otherwise, we compared the relative reactions of the individual self and collective self to threatening information in situations in which each self was maximally accessible.

The individual-self primacy hypothesis predicts that an insult to the individual self will arouse more anger than an insult to the collective self, whereas nonthreatening information directed at each self should be equally (non)arousing. On the other hand, the collective-self primacy hypothesis predicts that an insult to the collective self will arouse more anger than an insult to the individual self. Again, nonthreatening information directed at each self will be equally (non)arousing. The contextual primacy hypothesis

 $^{^{\}rm 3}$ The reported means are adjusted for the pretest creativity importance rating.

⁴ The pattern of responses to the agitation and dejection indexes were equivalent. For simplicity's sake, we report the combined ratings. Also, analyses were performed on 211 responses because 1 participant did not complete the mood measures.

predicts a third pattern: a main effect for threat. That is, insulting information should arouse more anger than noninsulting information, regardless of which self receives the information.

Although comparing the reactions of the individual self in an interpersonal context with the reactions of the collective self in an intergroup context maximizes the accessibility of each self, the comparison also makes plausible an alternative to the individual self-primacy hypothesis. In particular, the group schema hypothesis (Insko, Schopler, Hoyle, Dardis, & Graetz, 1990; Schopler et al., 1993) suggests that persons expect groups to be nastier and more competitive than individuals. An insult may therefore be more surprising and arouse more anger if it comes from an individual rather than a group. To control for and model this alternative explanation, we included a postfeedback assessment of surprise.

Method

Participants and Design

Participants were 168 students (88 women and 80 men). Six same-sex students participated in each session. The design was a 2 (target: individual self vs. collective self) \times 2 (insult: yes vs. no) between-subjects factorial. In the individual-self condition, we created an interpersonal context by dividing participants into dyads. Participants anticipated interacting with their partner on a prisoners dilemma game (PDG). In the collective-self condition, an intergroup context was created by dividing participants into two 3-person groups. Each group anticipated interacting with the opposing group on a PDG. Subsequently, individuals and groups received either threatening or nonthreatening feedback from their opponent. An assessment of self-reported anger served as the dependent measure. Participants completed the anger assessment twice, before and after receiving feedback. For each assessment, participants rated the level of anger they experienced "at this moment" on an 11-point scale ranging from 1 (very mild/none) to 11 (very intense).

Procedure

On their arrival, participants were seated in separate rooms. In the collective-self condition, the experimenter randomly divided the participants into two 3-person groups and escorted ingroup members into a common room. In the individual-self condition, the experimenter randomly divided the participants into three 2-person dyads, and each individual remained in his or her own room.

The experimenter introduced the session as a study of social decision making and informed participants that they could earn money on the basis of their interactions with the other person (group). The interactions would occur on a three-choice PDG matrix. The experimenter provided several examples of possible choice combinations. Each group (person) had a copy of the matrix, examples, and a sheet of paper on which they could record their decisions for 10 separate trials.

To "facilitate an understanding of the payoff matrix," the experimenter asked participants to complete a matrix-comprehension exercise. Participants provided written descriptions of each PDG choice. In particular, they responded to three sentences of the form: "A group (person) would choose "X" [Y or Z] if they (he or she) wanted to . . .". In the collective-self condition, each group was given one copy of the exercise and completed the task as a group. In the individual-self condition, each person completed the task separately. After the experimenter collected the exercises, each participant completed the prefeedback measure of anger individually.

The experimenter told the participants that to save time they would evaluate their opponents' comprehension exercise. Each person (group) received an evaluation form and a bogus comprehension exercise com-

pleted allegedly by their opponent. Participants were asked to rate their opponent's comprehension of the PDG matrix on a 10-point scale ranging from 1 (extremely poor comprehension) to 10 (extremely good comprehension) and to provide written comments if they so desired. The experimenter collected the bogus exercises and the evaluations.

The original exercises were returned to participants along with bogus evaluations. Participants in the insult condition received a 3 out of 10 on the comprehension scale along with the following comment: "This group (person) did not do well. They (he or she) must be a little slow." Participants in the no-insult condition received an 8 out of 10 on the comprehension scale along with the following comment: "This group (person) did well. They (he or she) really seem(s) to know what's going on."

In the collective-self condition, participants returned to their individual cubicles and completed the third anger assessment and an assessment of surprise. Participants rated how surprised they felt on the same 11-point scale they used to rate their feelings of anger. Participants were then fully debriefed and excused.

Results

Unit of Analysis

Because the procedure involved intragroup interaction, the responses of each member of the 3-person groups are not independent. Therefore, each player (i.e., individual or group) was treated as an independent observation. In the collective-self condition, this included the input of 3 participants; in the individual-self condition, it included the input of 1 participant. There were 18 observations in the collective-self-insult condition, 20 observations in the collective-self-insult condition, 24 observations in the individual-self-insult condition, and 30 observations in the individual-self-no-insult condition.

Anger Rating

Participants completed the anger assessment before and after receiving feedback from their opponent. To test the primacy hypotheses, we entered the anger ratings into a $2 \, (\text{self}) \times 2 \, (\text{insult}) \times 2 \, (\text{time: pretest vs. posttest}) \, \text{mixed ANOVA}.$ The latter variable (time) was a within-subject variable and coded whether the anger assessment was completed pre- or postfeedback. According to the primacy hypotheses, self and insult should influence only the postfeedback assessment of anger. That is, before the onset of feedback, the conditions should not differ in levels of anger. Table 2 contains the anger rating as a function of self, insult, and time.

There was a significant Self \times Insult \times Time interaction, F(1, 88) = 6.47, p < .02. To examine the interaction, we tested the Self \times Insult double interaction in both levels of time. For the

Table 2
Anger Rating as a Function of Time, Self, and Insult

Insult	Time			
	Prefeedback self		Postfeedback self	
	Individual	Collective	Individual	Collective
No-insult	1.33	1.48	1.77	1.52
Insult	1.75	1.78	4.42	2.23

Note. The anger rating could range from 1 to 11. Larger numbers indicate more intense anger.

prefeedback assessment of anger, neither the double interaction nor the two main effects were significant. Thus, before feedback, there were no differences among conditions in self-reported anger.

For the postfeedback assessment, however, the Self \times Time interaction was significant, F(1, 88) = 5.95, p < .02. Insulting feedback generated more anger when it was directed to the individual self (M = 4.41) than to the collective self (M = 2.23), t(40) = 2.93, p < .006. However, noninsulting feedback generated the same level of anger when directed at the individual (M = 1.77) or collective self (M = 1.52), t(48) = 0.68, p > .05. Once again, the results support the individual-self primacy hypothesis. Even in situations that maximize the accessibility of each self (i.e., interpersonal and intergroup), a threat to the individual self aroused more anger than did a threat to the collective self.⁵

Does Surprise Mediate the Effect of Self on Anger?

To examine whether the group schema hypothesis serves as an alternative explanation for the individual-self primacy hypothesis, we tested whether surprise mediates the individual-self versus collective-self difference on the postfeedback assessment of anger. According to the group schema hypothesis, an insult is more surprising and therefore arouses more anger if it comes from an individual rather than a group. Surprise can be considered a mediator if self (individual versus collective) predicts anger, if self predicts surprise, and if the effect of self on anger becomes nonsignificant when controlling for the effect of surprise (Baron & Kenny, 1986).

We restricted the analyses to participants who received insulting feedback, contrast coded the variable self (individual = 1 and collective = -1), and performed the three regression analyses suggested by Baron and Kenny (1986). A simple regression of anger on self indicated that more anger was aroused by an insult directed to the individual than to the collective self ($\beta = .42, p <$.01). A simple regression of surprise on self indicated that an insult tended to arouse more surprise when it was directed to the individual rather than collective self ($\beta = .26$, p < .09). Finally, a multiple regression in which anger was regressed simultaneously on self and surprise indicated that surprise did not completely mediate the effect of self. That is, self ($\beta = .33$, p < .05) and surprise ($\beta = .33$, p < .05) accounted independently for changes in anger. Thus, the group schema hypothesis functioned independently of rather than as an alternative to the individual-self primacy hypothesis. Even when we controlled for the effect of surprise generated by the source of an insult, we found an insult generated more anger when directed to the individual than the collective self.

Discussion

Following principles of SCT, we varied the social context to compare the reactions of the two selves when each was maximally accessible. We threatened the individual self in an interpersonal context and the collective self in an intergroup context. Consistent with the individual-self primacy hypothesis, the threat to the individual self aroused more anger than the threat to the collective self. This effect occurred even when we controlled for the differential surprise generated by the source of the insult (i.e., the group schema hypothesis). Even in social contexts in which each self was

rendered maximally accessible, the individual self was motivationally more primary than the collective self.

In the next investigation, we used a correlational method to examine another means of controlling for the accessibility of each self. In particular, we examined whether the cultural value orientations of individualism and collectivism moderate the primacy of the individual self.

Investigation 4

The initial research on cultural value orientation suggests that the concepts of individualism and collectivism are poles of a single dimension that differentiate cultures (Hofstede, 1980). Individualistic (e.g., western) cultures are characterized by loose ties among persons and a concern for the rights and welfare of the individual. Collectivistic (e.g., eastern) cultures are characterized by strong ties among persons, especially among ingroup members, and an obligation to maintain the welfare of the group. Subsequent research, however, revealed that the concepts are orthogonal dimensions that coexist within persons (Gaines et al., 1997; Singelis, 1994). That is, levels of individualism and collectivism vary across persons. A given individual may have high or low levels of both individualism and collectivism.

The accessibility and therefore the importance of a particular self may vary with levels of individualism and collectivism. The individual self may serve as the primary means of self-definition for persons high on individualism, whereas the collective self may serve as the primary means of self-definition for persons high on collectivism. Likewise, these patterns may be most pronounced for persons who are high on one dimension and low on the other.

In the present investigation, we examined whether cultural value orientations moderate the self-definitional primacy of the individual self and, by doing so, extended the research of Trafimow, Triandis, and Goto (1991). Trafimow et al. had North American and Chinese college students (all of whom attended a North American college) perform a self-description task that required them to complete 20 sentences beginning with "I am." Before the self-description task, the experimenter primed the participants' individual or collective self. Self-descriptions that referred to personal qualities, attitudes, beliefs, or behaviors that did not relate to other persons were coded as descriptions of the individual self. Self-descriptions that referred to demographic categories and social groups were coded as descriptions of the collective self.

More collective-self descriptions were generated by Chinese than American students and by persons whose collective self rather than individual self was primed. However, of direct relevance to the self-definitional primacy hypothesis, persons generated more individual-self descriptions than collective-self descriptions, regardless of cultural background or prime condition. Trafimow et al. (1991) suggested that persons listed more individual-self than collective-self descriptions because all participants (American and Chinese) had spent considerable time in the individualistic culture of North America. Alternatively, we suggest that this tendency reflects the self-definitional primacy of the individual self.

 $^{^5}$ We reached the same conclusion when we analyzed the postfeedback assessment of anger in a 2 (context) \times 2 (insult) ANCOVA with the prefeedback assessment of anger as a covariate.

To test the self-definitional primacy hypotheses, we assessed participants' levels of individualism and collectivism and, 1 week later, asked them to generate 20 self-descriptions. In addition, we made an important alteration to Trafimow et al.'s (1991) instructions regarding the self-description task. Trafimow et al. had participants complete statements that began with "I am" and, therefore, may have biased the self-descriptions toward the individual self (Brewer & Gardner, 1996). To avoid such a bias, we included neither "T" nor "we" in the instructions and had participants list statements that "generally describe you." Thus, "you" could refer to either the individual or collective self.

If the individual self serves as the more primary form of self-definition, participants should generate more individual-self descriptions than collective-self descriptions, regardless of levels of individualism and collectivism. However, if self-definitional primacy is moderated by levels of social value orientation, individual-self primacy should be limited to persons high in individualism. Persons high in collectivism will generate more collective-self than individual-self descriptions, thus demonstrating collective-self primacy.

Method

Participants were 184 UNC-CH students (93 women and 91 men) who attended two testing sessions. During the first session, participants completed Singelis's (1994) Self-Construal Scale (SCS), which was embedded among several filler items. The SCS consists of 24 items. Half the items reflect the separateness and uniqueness emphasized in individualistic cultures (e.g., "Being able to take care of myself is a primary concern for me") and measure the extent to which an individual has an independent (or individualistic) self-construal. The remaining items reflect the connectedness and relations emphasized in a collectivistic culture (e.g., "I will sacrifice my self-interest for the benefit of the group I am in") and measure the extent to which an individual has an interdependent (or collectivistic) self-construal. Participants indicated their agreement with each item on a 7-point scale ranging from 1 (strongly disagree) to 7 (strongly agree).

One week later, participants returned for the second session. On their arrival, participants were instructed to write 20 statements that "generally describe you." They then classified each description as pertaining to either their individual or collective self. The individual self was defined for the participant as "attributes and characteristics that are unique to you as an individual. That is, the individual self is composed of attributes or characteristics that differentiate you from all other people." Likewise, the collective self was defined for the participant as "attributes and characteristics that you share with members of important groups to which you belong. That is, the collective self is composed of attributes or characteristics that make you similar to other people in your groups."

The design was a 2 (individualism: low vs. high) \times 2 (collectivism: low vs. high) between-subjects factorial. We categorized participants as low or high in individualism and as low or high in collectivism on the basis of median splits performed on the two dimensions of the Self-Construal Scale. To perform the median splits, we formed an individualism index (Mdn = 4.91) and a collectivism index (Mdn = 4.74) by summing participants' responses to the independence items and the interdependence items, respectively. Consistent with previous research, the individualism and collectivism indexes varied independently (r = -.04, p < .62).

Results

We entered the number of traits participants attributed to their individual and collective selves into separate 2 (individualism) \times 2 (collectivism) ANOVAs. Consistent with previous research,

persons high on collectivism generated more traits descriptive of their collective self (M=8.68) than did persons low on collectivism (M=7.79), F(1, 180)=3.90, p<.05. No other effects were significant. Likewise, levels of collectivism and individualism did not influence the number of traits that described the individual self.

To test whether levels of individualism and collectivism influenced the relative number of traits attributed to the individual and collective self, we entered the number of traits participants generated into a 2 (individualism) \times 2 (collectivism) \times 2 (self: individual vs. collective) mixed ANOVA. The latter variable (self) was a within-subjects variable and coded whether a particular trait was attributed to the individual or collective self. Consistent with the individual-self primacy hypothesis, the main effect for self indicated that persons attributed more traits to their individual self (M=11.61) than to their collective self (M=8.25), F(1, 180)=47.59, p < .0001. No other effects were significant. Regardless of levels of individualism and collectivism, the individual self served as the more primary form of self-definition.

Discussion

In Investigation 4 we controlled for individualism and collectivism and replicated Trafimow et al.'s (1991) finding that persons list more individual-self than collective-self traits. This pattern is consistent with the individual-self primacy hypothesis and parallels other findings in cross-cultural research.

Some cross-cultural research suggests that there are fundamentally different self-processes functioning in different cultures (Heine & Lehman, 1997; Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997; Markus & Kitayama, 1991). For example, there appears to be a lack of self-enhancement in collectivistic cultures, primarily in Japan (Heine & Lehman, 1997). Other cross-cultural research, however has revealed the dominant presence of the individual self in all cultures. Implicit measures have indeed detected self-enhancement in Japan: Letter and number evaluation tasks indicate a greater preference for letters and numbers that occur in one's own name and birth date, respectively (Kitayama & Karasawa, 1997).

Furthermore, persons of color (i.e., African Americans, Asian Americans, and Latinos) have scored higher than Anglo-Americans on measures of collectivism, yet they scored just as high as Anglo-Americans on measures of individualism (Freeberg & Stein, 1996; Gaines et al., 1997). In addition, the racial-ethnic difference in collectivism is mediated by level of racial-ethnic group identification (i.e., persons of color identify more strongly with their own race-ethnicity than do Anglo-Americans; Gaines et al., 1997). This mediating role of group identification is noteworthy because some researchers have argued that collectivistic or group-level action arises to the extent that the collective is incorporated into one's momentary self-definition (Turner et al., 1994). The results of Investigation 2 and previous research (Duck et al., 1995; Lindeman, 1997), however, suggest that level of identification does not necessarily moderate the relative primacy of the individual self.

Moreover, cross-cultural comparisons of exchange principles point to the universal presence of the individual self. Finjeman, Willemsen, and Poortinga (1996) measured expected input to and output from various relationships (e.g., parents, siblings, cousins,

close friends, acquaintances, and strangers) in collectivistic countries (Greece, Hong Kong, and Turkey) and individualistic countries (the Netherlands and the United States). Regardless of culture, willingness to provide for others was strongly related to expectations of what participants would receive from others. The operation of basic exchange principles, equity and reciprocity, indicates that even in collectivistic cultures there is an overwhelming concern for self-interest. Likewise, a comparison of 55 nations revealed that individual subjective well-being increased as a nation's level of individualism increased (r = .77; Diener, Diener, & Diener, 1995). This relation remained even when confounding variables (e.g., national differences in income, human rights violations, cultural heterogeneity) were controlled. Persons reported feeling happier in a context in which they could express freely the individual self.

General Discussion

Both the individual and the collective self are integral bases of self-definition. In this research, we addressed the question of whether one self constitutes a more fundamental (i.e., motivationally primary) basis for self-definition. We formulated three hypotheses. The individual-self primacy hypothesis suggests that the individual self is the most fundamental basis of self-definition. The collective-self primacy hypothesis suggests that the collective self is the most fundamental basis of self-definition. Finally, according to the contextual primacy hypothesis, neither self is inherently more fundamental; primacy depends on contextual characteristics.

To test for motivational primacy, we examined multiple reactions (i.e., self-definitional preference, perception of feedback, derogation of feedback, mood state, and anger) to a threat against either the individual self or the collective self. According to our general framework, a threat to the more fundamental basis of self-definition should elicit more severe reactions than a threat to a less fundamental basis of self-definition. We controlled for several variables that could confound an examination of motivational primacy, such as the accessibility of the two selves (i.e., we made each self simultaneously accessible and, in addition, maximized the accessibility of one self and minimized the accessibility of the other), level of identification with the group, feedback domain, importance of feedback domain, and independence of feedback for each type of self. In the presence of these controls, a threat to the individual self was (a) considered more severe, (b) produced a more negative mood state, (c) produced more anger, and (d) elicited a stronger derogation of the source of the threat than did a threat to the collective self. Following the threat to the individual self, participants demonstrated an increased preference for self-definition in terms of the collective self (i.e., they deemphasized their personal uniqueness and identified more strongly with the ingroup). Analogous shifts in self-definitional preference were not observed following a threat to the collective self. Finally, when participants described themselves they generated more aspects of their individual than collective self, regardless of their level of individualism or collectivism. These patterns provide compelling support for the individual-self primacy hypothesis.

Generality of Findings

As is true of essentially all basic research, the generality of a particular finding is limited by the specific operationalization used.

In the present research, we attempted multiple operationalizations. Across each investigation, we varied the specific collective identity that was targeted. In particular, we targeted collective selves that were based on membership in an ascribed group (e.g., women in Investigation 1), achieved group (e.g., UNC-CH students in Investigation 2), and context-dependent group (e.g., a minimal group in Investigation 3). In Investigation 4 we used an idiographic method that did not restrict the participants' self-representation to any particular social group. Participants were free to generate self-descriptions from social groups that best reflected their collective self. In addition, across each investigation we assessed multiple responses (i.e., self-definitional preference, perception of feedback, derogation of feedback, mood state, and anger). Despite these variations in methodology, our investigations furnished converging and consistent findings. We believe that we have illustrated a basic social psychological phenomenon: the selfdefinitional primacy of the individual self.

Conclusion

The present research indicates that the individual self is more fundamental to self-definition than is the collective self. Persons, at times, do define themselves in terms of group membership (Hogg & Turner, 1987; Simon & Hamilton, 1994) and alter their behavior in response to the group (Asch, 1951; Geen, 1989; Myers, 1982). Given a choice, however, most persons would opt to stay home rather than go to war, save their hard-earned money rather than pay taxes, and relax in the company of their favorite music than engage in community volunteer work. At the same time, most persons would cherish the protection of the group when attacked individually, seek the financial support of the group when experiencing individual financial troubles, and call on the aid of the community in times of individual disaster. The individual self is the primary basis for self-definition.

References

Alicke, M. D. (1985). Global self-evaluation as determined by the desirability and controllability of trait adjectives. *Journal of Personality and Social Psychology*, 49, 1621–1630.

Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgments. In H. Guetzkow (Ed.), *Groups, leadership, and men* (pp. 177–190). Pittsburgh, PA: Carnegie Press.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychol*ogy, 51, 1173-1182.

Bem, D. J., & Allen, A. (1974). On predicting some of the people some of the time: The search for cross-situational consistencies in behavior. *Psychological Review*, 81, 506-520.

Biernat, M., Vescio, T., & Green, M. L. (1996). Selective self-stereotyping. Journal of Personality and Social Psychology, 71, 1194–1209.

Branscombe, N. R., & Wann, D. L. (1994). Collective self-esteem consequences of outgroup derogation when a valued social identity is on trial. *European Journal of Social Psychology*, 24, 641–658.

Brewer, M. B. (1979). In-group bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin*, 86, 307–324.

Brewer, M. B. (1991). The social self: On being the same and different at the same time. *Personality and Social Psychology Bulletin*, 17, 475–482.

Brewer, M. B., & Caporael, L. R. (1990). Selfish genes vs. selfish people: Sociobiology as origin myth. *Motivation and Emotion*, 14, 237-243.

- Brewer, M. B., & Gardner, W. (1996). Who is this "we"? Levels of collective identity and self-representations. *Journal of Personality and Social Psychology*, 71, 83-93.
- Brown, J. D., & Dutton, K. A. (1995). Truth and consequences: The costs and benefits of accurate self-knowledge. *Personality and Social Psy*chology Bulletin, 21, 1288-1296.
- Bulmer, M. G. (1978). Group selection in structured populations. American Naturalist, 112, 389-399.
- Campbell, W. K., & Sedikides, C. (1998). Self-threat magnifies the selfserving bias: A meta-analytic investigation. Unpublished manuscript, University of North Carolina at Chapel Hill.
- Caporael, L. R. (1997). The evolution of truly social cognition: The core configurations model. *Personality and Social Psychology Review*, 1, 276-298.
- Caporael, L. R., & Brewer, M. B. (1991). Reviving evolutionary psychology: Biology meets society. *Journal of Social Issues*, 47, 187–195.
- Cialdini, R. B., Borden, R. J., Thorne, A., Walker, M. R., Freeman, S., & Sloan, L. R. (1976). Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology*, 34, 366-375.
- Damon, W., & Hart, D. (1986). Stability and change in children's selfunderstanding. Social Cognition, 4, 102–118.
- Dawkins, R., & Krebs, J. R. (1978). Animal signals: Information or manipulation? In J. R. Krebs & N. B. Davies (Eds.), *Behavioral ecology* (pp. 282–309). Oxford, England: Blackwell.
- Deutsch, F. M., Ruble, D. N., Brooks-Gunn, J., Flemming, A., & Stangor, C. (1988). Information-seeking and maternal self-definition during the transition to motherhood. *Journal of Personality and Social Psychol*ogy, 55, 420-431.
- Diener, E., Diener, M., & Diener, C. (1995). Factors predicting the subjective well-being of nations. *Journal of Personality and Social Psychology*, 69, 851-864.
- Doojse, B., Ellemers, N., & Spears, R. (1995). Perceived intragroup variability as function of group status and identification. *Journal of Experimental Social Psychology*, 31, 410-436.
- Duck, J. M., Hogg, M. A., & Terry, D. J. (1995). Me, us and them: Political identification and the third-person effect in the 1993 Australian federal election. *European Journal of Social Psychology*, 25, 195–215.
- Finjeman, Y. A., Willemsen, M. E., & Poortinga, Y. H. (1996). Individualism-collectivism: An empirical study of a conceptual issue. *Journal of Cross-Cultural Psychology*, 27, 381-402.
- Forsyth, D. R., & Schlenker, B. R. (1977). Attributing the causes of group performance: Effects of performance quality, task importance, and future testing. *Journal of Personality*, 45, 220–236.
- Freeberg, A. L., & Stein, C. H. (1996). Felt obligation towards parents in Mexican-American and Anglo-American young adults. *Journal of So*cial and Personal Relationships, 14, 457-471.
- Gaertner, L. (1998). Intergroup discrimination in the minimal group paradigm: Categorization, reciprocation, or fear? Unpublished doctoral dissertation, University of North Carolina at Chapel Hill.
- Gaines, S. O., Jr., Marelich, W. D., Bledsoe, W., Steers, W. N., Henderson, M. C., Granrose, C. S., Barájas, L., Hicks, D., Lyde, M., Takahashi, Y., Yum, N., Ríos, D. I., García, B. F., Farris, K. R., & Page, M. S. (1997). Links between race/ethnicity and cultural values as mediated by racial/ethnic identity and moderated by gender. *Journal of Personality and Social Psychology*, 72, 1460–1476.
- Geen, R. G. (1989). Alternative conceptions of social facilitation. In P. B. Paulus (Ed.), *Psychology of group influence* (2nd ed., pp. 15-51). Hillsdale, NJ: Erlbaum.
- Gibbons, F. X., Persson Benbow, C., & Gerrard, M. (1994). From top dog to bottom half: Social comparison strategies in response to poor performance. *Journal of Personality and Social Psychology*, 67, 638-652.
- Greenwald, A. G. (1980). The totalitarian ego: Fabrication and revision of personal history. American Psychologist, 35, 603-618.

- Harkins, S. G. (1987). Social loafing and social facilitation. *Journal of Experimental Social Psychology*, 23, 1-18.
- Heine, S. J., & Lehman, D. R. (1997). The cultural construction of self-enhancement: An examination of group-serving biases. *Journal of Personality and Social Psychology*, 72, 1268-1283.
- Hirt, E. R., Zillman, D., Erickson, G. A., & Kennedy, C. (1992). Costs and benefits of allegiance: Changes in fans' self-ascribed competencies after team victory versus defeat. *Journal of Personality and Social Psychol*ogy, 63, 724-738.
- Hofstede, G. (1980). Culture's consequences: International differences in work-related values. Beverly Hills, CA: Sage.
- Hogg, M., & Turner, J. C. (1987). Intergroup behavior, self-stereotyping and the salience of social categories. *British Journal of Social Psychol*ogy, 26, 325–340.
- Hoorens, V. (1993). Self-enhancement and superiority: Biases in social comparison. In W. Stroebe & M. Hewstone (Eds.), European review of social psychology (Vol. 4, pp. 113-139). Chichester, England: Wiley.
- Insko, C. A., Schopler, J., Hoyle, R. H., Dardis, G. J., & Graetz, K. A. (1990). Individual-group discontinuity as a function of fear and greed. Journal of Personality and Social Psychology, 58, 68-79.
- Kenny, D. A., & DePaulo, B. M. (1993). Do people know how others view them? An empirical and theoretical account. *Psychological Bulletin*, 114, 145-161.
- Kitayama, S., & Karasawa, M. (1997). Implicit self-esteem in Japan: Name letters and birthday numbers. *Personality and Social Psychology Bulle*tin. 23, 736-742.
- Kitayama, S., Markus, H. R., Matsumoto, H., & Norasakkunkit, V. (1997). Individual and collective processes in the construction of the self: Self-enhancement in the United States and self-criticism in Japan. *Journal of Personality and Social Psychology*, 72, 1245–1267.
- Lindeman, M. (1997). Ingroup bias, self-enhancement and group identification. European Journal of Social Psychology, 27, 337–355.
- Lindeman, M., & Sundvik, L. (1995). Evaluative bias and selfenhancement among gender groups. European Journal of Social Psychology, 27, 269-280.
- Marks, G., & Miller, N. (1987). Ten years of research on the false-consensus effect: An empirical and theoretical review. *Psychological Bulletin*, 10, 72-90.
- Markus, H. (1977). Self-schemata and processing information about the self. Journal of Personality and Social Psychology, 35, 63-78.
- Markus, H., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224–253.
- Markus, H., & Kunda, Z. (1986). Stability and malleability of the self-concept. Journal of Personality and Social Psychology, 51, 858-866.
- Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. Annual Review of Psychology, 38, 299-337.
- Moghaddam, F. M., Stolkin, A. J., & Hutcheson, L. S. (1997). A generalized personal/group discrepancy: Testing domain specificity of a perceived higher effect of events on one's group than on oneself. *Personality and Social Psychology Bulletin*, 23, 743-750.
- Moscovici, S. (1976). Social influence and social change. London: Academic Press.
- Mullen, B., & Riordan, C. A. (1988). Self-serving attributions for performance in naturalistic settings: A meta-analytic review. *Journal of Applied Social Psychology*, 18, 3–22.
- Myers, D. (1982). Polarizing effects of social interaction. In H. Brandstatter, J. H. Davis, & Z. Stocker-Kriechgauer (Eds.), Group decision making. London: Academic Press.
- Myers, D. G., & Lamm, H. (1976). The group polarization phenomenon. *Psychological Bulletin*, 83, 602-627.
- Pelham, B. W. (1991). On confidence and consequence: The certainty and importance of self-knowledge. *Journal of Personality and Social Psychology*, 60, 518-530.
- Pelham, B. W., & Wachsmuth, J. O. (1995). The waxing and waning of the

- social self: Assimilation and contrast in social comparison. *Journal of Personality and Social Psychology*, 69, 825-838.
- Rabbie, J. M., & Lodewijkx, H. (1994). Conflict and aggression: An individual-group continuum. Advances in Group Processes, 2, 139-174.
- Rabbie, J. M., Schot, J. C., & Visser, L. (1989). Social identity theory: A conceptual and empirical critique from the perspective of a behavioral interaction model. *European Journal of Social Psychology*, 19, 171–202.
- Schlenker, B. R., & Miller, R. S. (1977). Egocentrism in groups: Self-serving bias or logical information processing? *Journal of Personality and Social Psychology*, 35, 755–764.
- Schopler, J., Insko, C. A., Graetz, K. A., Drigotas, S., Smith, V. A., & Dahl, K. (1993). Individual-group discontinuity: Further evidence for mediation by fear and greed. *Personality and Social Psychology Bulletin*, 19, 419-431.
- Sedikides, C. (1993). Assessment, enhancement, and verification: Determinants of the self-evaluation process. *Journal of Personality and Social Psychology*, 65, 317–338.
- Sedikides, C. (1995). Central and peripheral self-conceptions are differentially influenced by mood: Tests of the differential sensitivity hypothesis. *Journal of Personality and Social Psychology*, 69, 759–777.
- Sedikides, C., Campbell, W. K., Reeder, G. D., & Elliot, A. J. (1998a). The relationship closeness induction task. Unpublished manuscript, University of North Carolina at Chapel Hill.
- Sedikides, C., Campbell, W. K., Reeder, G. D., & Elliot, A. J. (1998b). The self-serving bias in relational context. *Journal of Personality and Social Psychology*, 74, 378–386.
- Sedikides, C., & Skowronski, J. J. (1993). The self in impression formation: Trait centrality and social perception. *Journal of Experimental* Social Psychology, 29, 347–357.
- Sedikides, C., & Skowronski, J. J. (1997). The symbolic self in evolutionary context. Personality and Social Psychology Review, 1, 89-102.
- Sedikides, C., & Strube, M. J. (1997). Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. In M. P. Zanna (Ed.), Advances in experimental social psychology (Vol. 29, pp. 209-269). New York: Academic Press.
- Simon, B., & Hamilton, D. L. (1994). Self-stereotyping and social context: The effects of relative in-group size and in-group status. *Journal of Personality and Social Psychology*, 66, 699-711.
- Simon, B., Pantaleo, G., & Mummendey, A. (1995). Unique individual or interchangeable group member? The accentuation of intragroup differences versus similarities as an indicator of the individual self versus the collective self. *Journal of Personality and Social Psychology*, 69, 106–119.
- Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*, 20, 580-591.
- Skowronski, J. J., Betz, A. L., Thompson, C. P., & Shannon, L. (1991).Social memory in everyday life: The recall of self-events and other-events. *Journal of Personality and Social Psychology*, 60, 831-843.
- Smith, J. H., & Spears, R. (1996). Ability and outcome evaluations as a function of personal and collective (dis)advantage: A group escape from individual bias. *Personality and Social Psychology Bulletin*, 22, 690–704.
- Sober, E. (1980). Holism, individualism and the units of selection. *Philosophy of Science Association*, 2, 93–121.
- Spears, R., Doojse, B., & Ellemers, N. (1997). Self-stereotyping in the face of threats to group status and distinctiveness: The role of group identification. *Personality and Social Psychology Bulletin*, 23, 538-553.
- Stevens, L. A., & Fiske, S. T. (1995). Motivation and cognition in social life: A social survival perspective. Social Cognition, 13, 189-214.
- Stoner, J. A. F. (1968). Risky and cautious shifts in group decisions: The influence of widely held values. *Journal of Experimental Social Psy*chology, 4, 442–459.

- Suh, E., Diener, E., & Fujita, F. (1996). Events and subjective well-being: Only recent events matter. *Journal of Personality and Social Psychology*, 70, 1091–1102.
- Swann, W. B. (1990). To be adored or to be known? The interplay of self-enhancement and self-verification. In E. T. Higgins & R. M. Sorrentino (Eds.), *Handbook of motivation and cognition: Foundations of* social behavior (Vol. 2, pp. 408-448). New York: Guilford Press.
- Taylor, S. E., & Armor, D. A. (1996). Positive illusions and coping with adversity. *Journal of Personality*, 64, 873–898.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193–210.
- Trafimow, D., Triandis, H. C., & Goto, S. G. (1991). Some tests of the distinction between the private self and the collective self. *Journal of Personality and Social Psychology*, 60, 649-655.
- Triplett, N. (1897). The dynamogenic factors in pacemaking and competition. American Journal of Psychology, 9, 507–533.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). Rediscovering the social group: A self-categorization theory. Oxford, England: Basil Blackwell.
- Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition and social context. *Personality and Social Psy*chology Bulletin, 20, 454–463.
- Turner, J. C., & Onorato, R. S. (in press). Social identity, personality and the self-concept: A self-categorization perspective. In T. R. Tyler, R. Kramer, & O. John (Eds.), The psychology of the social self. Hillsdale, NJ: Erlbaum.
- Turner, J. C., Wetherell, S., & Hogg, M. A. (1989). Referent informational influence and group polarization. *British Journal of Social Psychol*ogy, 28, 135-147.
- Wade, M. J. (1978). A critical review of the models of group selection. Quarterly Review of Biology, 53, 101-114.
- Wallace, B. (1973). Misinformation, fitness, and selection. American Naturalist, 107, 1–7.
- Wegner, D. M. (1995). A computer network model of human transactive memory. Social Cognition, 13, 319-339.
- Wegner, D. M., Erber, R., & Raymond, P. (1991). Transactive memory in close relationships. *Journal of Personality and Social Psychology*, 61, 923-929.
- Wiley, R. H. (1983). The evolution of communication: Information and manipulation. In T. R. Halliday & P. J. B. Slater (Eds.), Communication (animal behavior) (Vol. 2, pp. 156-189). New York: Freeman.
- Williams, K. D., & Karau, S. J. (1991). Social loafing and social compensation: The effects of expectations of co-worker performance. *Journal of Personality and Social Psychology*, 61, 570–581.
- Wilson, D. S., & Sober, E. (1994). Reintroducing group selection to the human behavioral sciences. *Behavioral and Brain Sciences*, 17, 585–654.
- Wyer, R. S., & Frey, D. (1983). The effects of feedback about self and others on the recall and judgments of feedback-relevant information. *Journal of Experimental Social Psychology*, 19, 540-559.
- Zajonc, R. B. (1965). Social facilitation. Science, 149, 269-274.
- Zuckerman, M., & Lubin, B. (1965). Manual for the multiple affect adjective checklist. San Diego, CA: Educational and Industrial Testing Service.

Received September 30, 1997
Revision received August 10, 1998
Accepted August 18, 1998