

## Person $\times$ Situation Interactionism in Self-Encoding (*I Am . . . When . . .*): Implications for Affect Regulation and Social Information Processing

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Although Person  $\times$  Situation (P  $\times$  S) interactionism is central in current social-cognitive conceptions of personality organization, its implications for the encoding of the self remain unexplored. Two studies examined the causal role of P  $\times$  S interactionism in self-encoding on affect regulation and discriminative social perception. Following failure (Studies 1 and 2) and success (Study 2) ideation, participants were prompted to encode the self either in P  $\times$  S interactionist terms (*I am . . . when . . .*) or in traitlike unconditional terms (*I am . . .*). Interactionist (compared with unconditional) self-encoding led to less affective extremity, suggesting that such encoding may prevent individuals from generalizing specific success and failure experiences to the self as a whole. Study 2 also found that interactionist self-encoding attenuated the endorsement of global stereotypes, suggesting that such encoding may enhance fine-grained social perception as well.

Over the last 10 years, a growing body of research and theory has accumulated that indicates the utility of conceptualizing personality structure and coherence in terms of Person  $\times$  Situation (P  $\times$  S) interactions (Cervone & Shoda, 1999; Mischel & Shoda, 1995, 1998, 1999; Shoda, Mischel, & Wright, 1993, 1994; Vansteelandt, 1999; Vansteelandt & Van Mechelen, 1998). There is now compelling evidence that individuals' distinctive, highly contextualized, but stable *if . . . then . . .* patterns of situation-behavior relationships (e.g., if Situation X, then the person does A, but if Situation Y, then the person does B) are a locus of behavioral stability and an expression of the underlying processing dynamics of the individual (Mischel & Shoda, 1995, 1998, 1999; Shoda, 1999; Shoda & Mischel, 1998). Despite the importance of P  $\times$  S interactionism in current social-cognitive theory and research, however, its implications for how the self is encoded and mentally

represented by the person have yet to be systematically examined experimentally.

Research shows that the affective impact and the social consequences of events may be influenced by the self-relevant cognitions that these events activate in the individual (Andersen, Reznik, & Chen, 1997; Andersen & Schwartz, 1992; Bugental, 2000; Cantor & Kihlstrom, 1987; Graziano & Bryant, 1998; Graziano, Jensen-Campbell, & Finch, 1997; Linville, 1982, 1985, 1987; Nolen-Hoeksema, 1991; Pervin, 1990; Pervin & John, 1999; Posavac, Sanbonmatsu, & Fazio, 1997; Showers, 1992, 1995; Showers & Kling, 1996). The specific nature of the self-relevant thoughts that become activated should depend importantly on how the self is encoded in relation to the experience. Current social-cognitive theory (e.g., Mischel & Shoda, 1995) suggests that the self can be encoded in P  $\times$  S, interactionist terms (e.g., *I am . . . when . . .*) by focusing attention on the specific but potentially stable patterns of interactions between the self and the type of conditions in which the event unfolds. Alternatively, however, the individual can disregard the interaction characterizing a self-relevant negative or positive event and instead encode the self in terms of unconditional, decontextualized self-referent attributes, such as "I'm not good" or "I'm great" (Mueller & Dweck, 1998).

This article addresses the implications of different types of self-encoding for social and emotional functioning (Cantor & Kihlstrom, 1987; Goleman, 1995; Mischel & Shoda, 1995). The general hypothesis tested was that interactionist self-encoding, compared with unconditional self-encoding, leads to more circum-

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scribed, discriminative responding in information processing. This hypothesis was examined in relation to three specific types of responses: affective (negative) extremity following self-relevant failure experiences (Studies 1 and 2), affective (positive) extremity following self-relevant success experiences (Study 2), and endorsement of stereotypes in social perception (Study 2).

### Implications of Interactionist Versus Unconditional Encoding for Affect Regulation

Encoding the self in interactionist versus unconditional terms should have implications for effective regulation of affect. There is already indirect evidence for the potentially maladaptive consequences of unconditional, global information processing about the self (Moos, 1969; Raush, Dittman, & Taylor, 1959). Linville (1982, 1985, 1987), for example, found that individuals who allow failure related to one aspect of the self to generalize to other aspects of the self have more extreme affective swings and are more vulnerable to depression and illness when under stress. Similarly, a global self-attributional style seems to amplify depressive reactions to stressful experiences (Hammen, 1987; Weiner, 1985, 1986), ultimately even eliciting generalized hopelessness (Abramson, Metalsky, & Alloy, 1989). On the positive end, thinking of oneself in terms of unconditional, positive traits (e.g., "I am great") can set people up for subsequent disappointment when faced with setbacks (Colvin & Block, 1994; Diener, Colvin, Pavot, & Allman, 1991; Kamins & Dweck, 1999; Mueller & Dweck, 1998).

By contrast, interactionist self-encoding should theoretically help bind the experience to its context, rather than generalizing the experience to the self as a whole. As such, interactionist self-encoding may facilitate effective emotional regulation by attenuating the human tendency to catastrophize failures and glorify successes beyond the context to which they apply (Weiner, 1986). Consistent with this thinking, Showers (1992, 1995) recognized the importance of a situationally contextualized self-concept and reasoned that individuals with such an organization are more likely to be buffered against depression and have higher self-esteem. Interactionist self-encoding also may facilitate effective self-regulation by making more accessible a wide range of potentially available alternative behaviors that may ultimately enhance problem solving (Graziano & Bryant, 1998; Posavac et al., 1997; Shoda et al., 1994).

### Implications of Interactionist Versus Unconditional Encoding for Social Information Processing

Some evidence also exists for a relationship between encoding others' behavior in interactionist terms and discriminative, fine-grained social information processing. For example, people who spontaneously encode others' behavior in terms of situation-behavior relationships have been found to have qualitatively better social interaction outcomes than those who do not take them into account (Chiu, Hong, Mischel, & Shoda, 1995, Study 1). Empirical evidence further suggests a relationship between unconditional thinking about others and the use of global social categories such as stereotypes in social perception. For instance, the belief that personal attributes are fixed, traitlike entities as opposed to malleable characteristics has been shown to predict greater levels of

stereotyping (Levy, Stroessner, & Dweck, 1998). Similarly, more complex and well-differentiated knowledge structures about groups are related to less stereotyping (Linville, 1982; Linville & Jones, 1980).

### P × S Interactions in Behavior and Social Functioning

Correlational research also provides suggestive evidence for a link between behavior characterized by P × S interactions and effective social functioning. In one study, the quality of people's social interactions was related to their discriminative pattern of monitoring (information seeking) during threatening, controllable events but blunting (information avoidance) during uncontrollable events (Chiu et al., 1995, Study 2). Shoda et al. (1993) also showed that cognitive social competence predicted the extent to which children in a summer camp characteristically and discriminatively varied their prosocial behavior in relation to the particular features of situations (e.g., when teased by peers vs. when warned by adults).

### The Present Studies

Thus, correlational and individual-differences research from diverse theoretical approaches converges in pointing to the importance of attending to the potentially stable types of conditions or situations that contextualize self-relevant experiences. Nevertheless, and in spite of its theoretical importance, a causal link between interactionist P × S self-encoding and the adaptiveness of its emotional, cognitive, and social consequences has yet to be established experimentally. The present experiments address this gap. The aim was to test whether encoding information about the self in terms of situation-behavior contingencies (*I am . . . when . . .*) attenuates extremity of affect and whether it enhances discriminative, fine-grained social perception.

Specifically, Study 1 examined whether interactionist self-encoding (compared with unconditional self-encoding) attenuates affective reactions following failure ideation. In Study 2, we tested whether parallel effects would be found with regard to success experiences, reasoning that if interactionist self-encoding leads to less extreme affect in response to failure ideation, it should also do so in response to success. We specifically focused on sadness and happiness because failure and success tend to elicit affective reactions along this dimension (Weiner, Russell, & Lerman, 1978). We further reasoned that if interactionist self-encoding (compared with unconditional encoding) induces a sensitivity to P × S interactions in social behavior more generally, then it should make people less likely to endorse global stereotypes. Thus, in Study 2, we also tested whether interactionist self-encoding would lead people to endorse a previously activated masculine stereotype less strongly when evaluating a fictitious male target.

### Study 1

Study 1 was an experimental test of the prediction that interactionist self-encoding would lead to less sad affect following failure ideation than unconditional encoding. Addressing the causal role of interactionist self-encoding on affect required a paradigm in which participants could experience failure and in which we could manipulate how the self would be encoded in the context of this

experience. Drawing on a procedure successfully used by Wright and Mischel (1982) to induce strong affective states, participants listened to three prerecorded failure experiences in private and were prompted to imagine themselves vividly living through each of them.

We manipulated self-encoding following each experience by asking participants to complete sentences that prompted them to encode themselves either in terms of broad, dispositional traits (unconditional encoding) or in terms of self-relevant traits specifically in relation to a contingency or situation (interactionist encoding). In addition, people's implicit beliefs about the malleability or fixedness of personal attributes have been linked empirically to responses to failure (Zhao & Dweck, 1997) and might theoretically moderate the effect of the self-encoding manipulation. We therefore also assessed participants' implicit theories of personality and intelligence (Chiu, Hong, & Dweck, 1997; Dweck, Hong, & Chiu, 1993) and explored the impact of individual differences in the endorsement of these theories on affective outcomes in this study.

### Method

#### Sample

A total of 195 Columbia University students participated in the study, and each was paid \$6 for their participation. To provide internal replication, we collected data at two different times, once in the spring and summer of 1996 (Sample 1:  $n = 104$ ; 46 men and 58 women) and once in the summer of 1997 (Sample 2:  $n = 91$ ; 46 men and 40 women). Five participants from the second assessment declined to fill out a demographic form at the end of the study; thus, no sex information was available for them.

#### Procedure

After reviewing and signing a consent form, participants completed a measure of implicit theories about personality and intelligence (described below) embedded within a set of background questionnaires. Next they were given a portable cassette player with a prerecorded tape, headphones, and an accompanying response booklet. They were guided into a quiet cubicle, instructed to play the cassette tape, and informed that the recording would walk them through the experiment. They were then left alone to complete the experiment.

The recording explained that the goal of the study was to understand the relationship between emotion and the semantics of sentences. Participants were walked through the pages of the booklet by means of a beeping sound, which indicated it was time to turn to the next page of the booklet. In this way, the pages of the booklet were synchronized with the different sections of the audio recording.

*Activation of failure experiences.* Following an initial affect assessment (described in the *Measures and Materials* section below), participants listened to a series of three experiences that college students often encounter in everyday life. The stories were based on open-ended pilot interviews with college students and were identified as exemplars of typical failure experiences in their lives. In the first story, the protagonist gives an oral presentation that goes awry. In the second story, the protagonist is at a party and has difficulty talking to people and becoming part of the social scene. In the third story, the protagonist receives a bad grade on a paper for an important class. Following Wright and Mischel (1982), participants were asked to picture each event in their mind and try to imagine it happening to them as vividly as possible, regardless of whether they had actually lived through such an experience.

*Self-encoding manipulation.* After listening to each story, participants were asked to complete sentences that reflected what they would have thought to themselves in response to that experience. The unconditional encoding manipulation prompted participants to encode themselves in terms of broad, dispositional terms, namely, "I am a(n) \_\_\_\_\_." This sentence structure prompted participants to fill in the blank with a self-relevant trait.

For the interactionist self-encoding manipulation, we added a contingency link to the unconditional encoding manipulation by asking participants to fill out a blank specifying the condition or situation, namely, "I am a(n) \_\_\_\_\_ when \_\_\_\_\_." This sentence structure prompted participants to encode self-relevant traits specifically in relation to a contingency or situation.

After they completed each sentence, participants were instructed to repeat to themselves what they had written and to feel the impact of the words. After 20 s, they were prompted to turn to the next page and were instructed to indicate their affect (described below). They were given 10 s to complete these tasks. The same procedure was followed for each story. After the third postmanipulation affect assessment, the recording thanked the participants and ended. After participants emerged from their cubicle, the experimenter debriefed them, ensuring that there were no lingering effects of the failure ideation. Participants were then compensated and thanked for having completed the study.

#### Measures and Materials

*Implicit intelligence and person theories.* Participants' implicit theories were assessed at the start of the session with the short versions of the implicit intelligence and person theories scales (Chiu et al., 1997). These scales assess the extent to which individuals hold the belief that people's intelligence and personal attributes are fixed and nonmalleable (i.e., entity theories). The implicit intelligence theories scale consists of the following items: "You have a certain amount of intelligence and you really can't do much to change it," "Your intelligence is something about you that you can't change," and "You can learn new things but you can't really change your basic intelligence." The implicit person theories scale includes the following items: "The kind of person people are is something very basic about them and it can't be changed very much," "People can do things differently but the important parts of who they are can't really be changed," and "Everyone is a certain kind of person and there is not much that can be done to really change that." Participants indicated their agreement to these items on a 6-point scale ranging from *strongly agree* (1) to *strongly disagree* (6).

Because the two scales were correlated with each other,  $r(193) = .39$ ,  $p < .001$ , participants' responses to these two scales were averaged to create a domain-general measure of implicit theories ( $\alpha = .85$ ). Lower scores on this measure indexed higher levels of entity theory. The mean entity theory score in this sample was 3.64 ( $SD = 1.1$ ) and did not change as a function of sample (Sample 1:  $M = 3.55$ ,  $SD = 1.22$ ; Sample 2:  $M = 3.73$ ,  $SD = .94$ ),  $t(185.2)$  for unequal variances = 1.16, *ns*.

*Pre- and postmanipulation affect assessment.* Participants' affect was assessed using a 10-point scale. Each scale point was represented by a computer-generated face that ranged from very sad to neutral to very happy. The parameters for the curve of the smile and the angle of the eyebrows were generated using the S+ programming language (see Becker, Chambers, & Wilks, 1988). Participants circled the face that best described their current affect, and their responses were later turned into a numeric scale, with 1 representing *very sad* and 10 representing *very happy*. Thus, higher scores in this scale indexed higher levels of happy affect.

Each response booklet contained four affect assessments. The first, which participants completed prior to listening to the failure stories, served as the premanipulation affect assessment. After listening to each failure story and completing the corresponding manipulation sentence, participants rated their affect. There were no differences in premanipulation affect

as a function of sample (Sample 1:  $M = 6.78$ ,  $SD = 1.69$ ; Sample 2:  $M = 6.45$ ,  $SD = 1.39$ ),  $t(193) = 1.39$ , *ns*, or as a function of experimental condition (unconditional:  $M = 6.65$ ,  $SD = 1.45$ ; interactionist:  $M = 6.66$ ,  $SD = 1.62$ ),  $t < 1$ .

Ratings across the last three assessments were averaged to index postmanipulation affect ( $\alpha = .85$ ). The mean postmanipulation affect rating did not change as a function of sample (Sample 1:  $M = 4.66$ ,  $SD = 1.84$ ; Sample 2:  $M = 4.56$ ,  $SD = 1.75$ ),  $t < 1$ . The patterns reported in the *Results* section below were the same when analyses were done separately for each of the three affect assessments.

### Content Coding of Responses and Manipulation Checks

*Nature of self-descriptors.* The sentence structure (“I am a(n) \_\_\_\_\_”) used in the sentence completion was intended to prompt the use of global, traitlike self-descriptors in both interactionist and unconditional encoding conditions. As a manipulation check, two independent judges coded for the content of the self-descriptors (i.e., responses to the “I am a(n) \_\_\_\_\_” item) generated by the participants. Self-descriptors were coded into three categories: traits (e.g., “I am a failure”), states (e.g., “I am nervous”), and other completions (e.g., “I will go home now”). Judges agreed on 92% of the cases, and disagreements were resolved through discussion.

As expected, the majority of the responses were categorized as traits (82.20%), followed by states (12.40%) and other (5.40%) descriptors. Further analyses revealed that the frequency of traits, states, and other self-descriptors did not differ across encoding conditions (traits: unconditional = 84.03%, interactionist = 80.42%; states: unconditional = 11.11%, interactionist = 13.64%; and other: unconditional = 4.86%, interactionist = 5.94%),  $\chi^2(2, N = 574) = 1.27$ , *ns*. The findings reported in the *Results* section below remained the same when the analyses were conducted only on trait responses.

*Nature of conditional hedges.* To explore the different types of conditional hedges that participants generated, two independent judges coded participants’ hedges in the interactionist encoding condition into internally focused conditionals, externally focused conditionals, and situational descriptors. More specifically, responses were coded as internally focused hedges when these reflected the participants’ own actions (e.g., “when I don’t put in the time to write a good paper”) or affective states (e.g., “when I feel nervous”). Responses were coded as externally focused when the hedge reflected others’ actions (e.g., “when professors grade me unfairly”). Responses were coded as situational descriptions when participants merely described the situational context of the self-encoding (e.g., “when there is an oral presentation”). Responses that did not fit into any of these categories were coded as “other.” Interjudge agreement was 89.00%, and disagreements were resolved by discussion between the two judges. Analyses revealed that 62.20% of participants’ responses were internally focused, 23.10% were situational descriptions, 7.80% were externally focused, and 6.80% fell into the “other” category. Hedge type was not significantly related to postmanipulation affect,  $F(3, 275) = 1.42$ , *ns*.

### Results

Data for this study came from two samples within the same college population, collected approximately 1 year apart. To examine the replicability of the experimental findings, we tested whether the effect of the priming manipulation differed in the two samples. A General Linear Models (GLM) analysis was performed on participants’ postmanipulation affect ratings with experimental condition (unconditional vs. interactionist), sample (1996 sample vs. 1997 sample), and the interaction between sample and experimental condition as independent variables. Premanipulation affect ratings were entered as a covariate. This initial analysis revealed

that neither sample nor the interaction between sample and experimental condition was significant ( $F_s < 1$ ). Thus, data from the two samples were combined in all subsequent analyses.

### Effect of Interactionist Self-Encoding on Sad Affect

To test the hypothesis that unconditional self-encoding would lead to higher levels of sad affect following failure ideation than interactionist self-encoding, we performed a GLM analysis on participants’ postmanipulation affect ratings with experimental condition (unconditional vs. interactionist) as the between-subjects predictor and premanipulation affect ratings as a covariate. Results revealed a significant effect of self-encoding,  $F(1, 192) = 8.97$ ,  $p < .01$ , controlling for premanipulation affect, such that participants reported greater levels of postmanipulation sad affect in the unconditional (adjusted  $M = 4.26$ ,  $SE = .17$ ) than in the interactionist (adjusted  $M = 4.98$ ,  $SE = .17$ ) self-encoding conditions. Figure 1 illustrates these results, presenting raw means to allow direct comparisons of pre- and postmanipulation affect ratings. The similarity of premanipulation affect ratings led to virtually identical raw and adjusted means for postmanipulation affect.

These findings did not change when the analyses were conducted separately for the first (interactionist:  $M = 5.45$ ,  $SE = .20$ ; unconditional:  $M = 4.69$ ,  $SE = .19$ ),  $F(1, 192) = 8.31$ ,  $p < .01$ ; second (interactionist:  $M = 5.17$ ,  $SE = .20$ ; unconditional:  $M = 4.48$ ,  $SE = .19$ ),  $F(1, 192) = 6.70$ ,  $p = .01$ ; and third (interactionist:  $M = 4.24$ ,  $SE = .22$ ; unconditional:  $M = 3.60$ ,  $SE = .21$ ),  $F(1, 192) = 4.68$ ,  $p < .04$ , affect assessments. A repeated measures analysis of variance (ANOVA) revealed that although participants tended to become sadder with each succeeding story,  $F(2, 378) = 2.55$ ,  $p < .10$ , the effect of self-encoding manipulation did not differ as a function of story sequence ( $F < 1$ ).

We further examined the possible effect of self-descriptor type (traits vs. states vs. other) on postmanipulation affect. In the interactionist encoding condition, self-descriptor type was not related to postmanipulation affect ( $F < 1$ ). In the unconditional encoding group, by contrast, the use of traits was related to more extreme sadness ( $M = 4.02$ ,  $SD = 1.95$ ) than either the use of states ( $M = 4.85$ ,  $SD = 2.37$ ),  $t(265) = 1.99$ ,  $p < .05$ , or of other descriptions ( $M = 5.64$ ,  $SD = 2.24$ ),  $t(243) = 2.94$ ,  $p < .01$ . The latter two groups did not differ significantly from each other. This pattern of results is consistent with the hypothesis that encoding the self in unbounded, unconditional trait terms is particularly conducive to affective extremity. However, these results should be interpreted with caution because of the relatively low frequency of state and other self-descriptors.

### Effect of Implicit Theories on Sad Affect

Subsequent analyses were conducted to determine the role of participants’ implicit theories in determining postmanipulation affect. A GLM analysis was conducted on postmanipulation affect, with experimental condition (unconditional vs. interactionist), implicit theory (continuous scores), and the interaction between them as predictor variables in the model together with the premanipulation affect as a covariate. The results did not yield a significant interaction between experimental condition and implicit theory; thus, the analysis was repeated without including the interaction term in the model. Results from the additive model yielded a

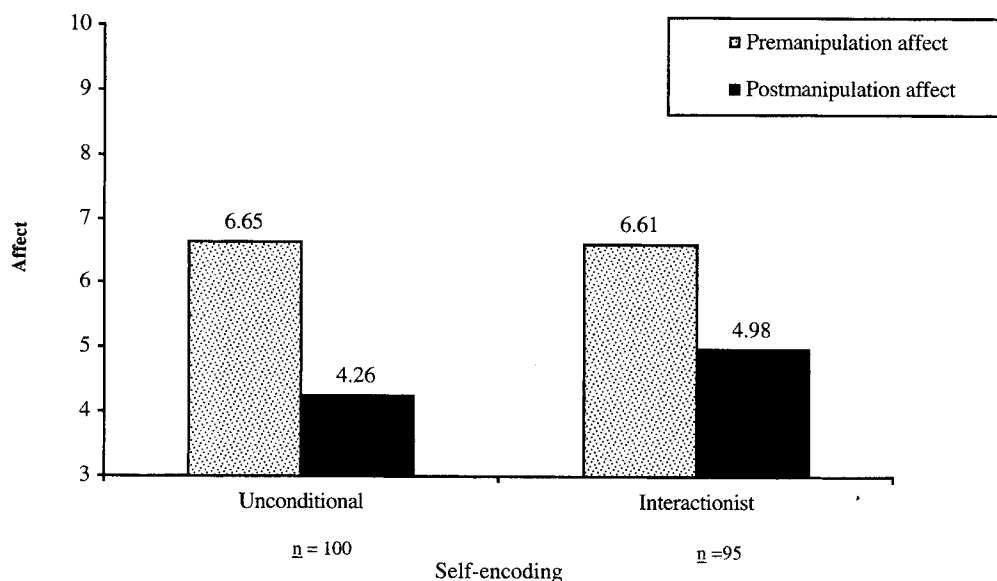


Figure 1. Pre- and postmanipulation affect (range = 1 [*sad*] to 10 [*happy*]) as a function of self-encoding condition (unconditional vs. interactionist). Raw postmanipulation affect ratings are presented.

significant main effect both for implicit theory,  $F(1, 191) = 7.35$ ,  $p < .01$ , and encoding condition,  $F(1, 191) = 7.88$ ,  $p < .01$ . Stronger endorsement of an entity viewpoint was significantly predictive of greater postmanipulation sad affect ( $\beta = .18$ ,  $p < .01$ ). The pattern of results for encoding condition remained the same when controlling for participants' implicit theory score, indicating that the effect of interactionist self-encoding in buffering against sad affect was independent of participants' implicit theories.

### Discussion

The results of Study 1 clearly supported the hypothesis that interactionist compared with unconditional self-encoding following imagined failure experiences buffers individuals against extremity of sad affect. This pattern did not change when participants' implicit theories about the fixed versus malleable nature of personal attributes and intelligence were taken into account. However, consistent with prior research, entity theorists overall reported more sad affect than incremental theorists in response to ideated failure. Overall, these findings provide support for a causal relation between unconditional self-encoding and sad affect in the face of stressful events and for the effects of P × S interactionist self-encoding as a buffer against emotional reactivity. They also are congruent with findings from individual-differences research in global versus specific attributional styles as correlates and predictors of helplessness and depression (Abramson, Seligman, & Teasdale, 1978; Metalsky, Abramson, Seligman, Semmel, & Peterson, 1982).

### Study 2

Although there is widespread consensus about the maladaptive consequences of overreactions to negative experiences, theoretical and empirical work on the positive end has been no less interest-

ing. Numerous researchers have argued that "rose-colored glasses" may have mental health benefits (Lewisohn, Mischel, Chaplin, & Barton, 1980; S. E. Taylor & Brown, 1988; S. E. Taylor, Wayment, & Collins, 1993), whereas others point to the potential drawbacks of overly positive and unrealistic self-views (e.g., Colvin & Block, 1994; Diener et al., 1991; Kamins & Dweck, 1999; Mueller & Dweck, 1998). Regardless of the potential costs or benefits of the consequences, it is important to clarify the mechanisms and processes that control whether such generalization (in either direction) occurs.

If interactionist self-encoding helps bind the impact of an experience to a specific context or situation, then such self-encoding should lead to less extreme swings in affect regardless of whether individuals are faced with failure or success. Thus, the first goal of Study 2 was to test the hypothesis that, compared with unconditional self-encoding, interactionist self-encoding would lead to less happy affect following success ideation in the same way that it leads to less sad affect following failure ideation.

Consistent with the present hypothesis, Linville (1985) showed that following a success manipulation in which participants were told that they had scored in the 90th percentile on a performance task, individuals low in self-complexity (those with less complex cognitive representations of themselves) experienced more happy affect and had more positive self-evaluations than individuals with more highly differentiated self-representations. Further suggesting that unconditional encoding may lead to greater affective extremity, Linville (1985) also found that individuals lower in self-complexity experienced greater mood swings over a 2-week period than those high in self-complexity.

A second goal of Study 2 was to investigate the effect of interactionist self-encoding on social perception, and specifically on stereotype endorsement. We reasoned that conditionalizing self-relevant events may induce a general sensitivity to P × S interactions and activate more complex representations about oth-

ers as well. If so, these more complex representations and differentiated knowledge structures may make the endorsement of global stereotypes less likely. This hypothesis has received indirect support from two different lines of research. First, it has been shown that people's beliefs about the extent to which personal attributes are fixed entities as opposed to malleable characteristics influence the degree to which they stereotype (Levy et al., 1997). Second, a lack of complexity of people's knowledge about outgroups is related to extremity in their evaluations of members of that group (Linville, 1982; Linville & Jones, 1980).

An alternative hypothesis regarding the potential link between conditionalizing and stereotype endorsement is that participants' affect, rather than interactionist encoding per se, would determine the extent to which they rely on an activated stereotype in a person perception task. Individuals in happy affective states have been shown to rely on stereotypes (Bodenhausen, 1993; Bodenhausen, Kramer, & Susser, 1994; Mackie, Queller, Stroessner, & Hamilton, 1996) and on general knowledge structures (Bless, Schwarz, & Wieland, 1996; Bohner & Apostolidou, 1994) to a greater extent than individuals in neutral affective states. Similarly, negative affect in general (e.g., Greenberg et al., 1990) and sad/unhappy affect in particular (Esses, Haddock & Zanna, 1993; Esses & Zanna, 1995; Haddock, Zanna, Esses, 1994) have been associated with increased prejudice and stereotyping (Gunther, Ferraro, & Kirchner, 1996). It was thus important to explore the possibility that affect may account for the hypothesized relationship between interactionist encoding and stereotyping. A lack of such an effect would suggest that interactionist self-encoding itself, rather than the relatively neutral affect it leads to, impacts the extent to which individuals endorse stereotypes.

### Method

#### Sample

The participants in this study were 104 Columbia University students (41 women and 63 men) who received \$6 in exchange for their participation in the study during the summer of 1997. The mean age of participants was 22.31 years ( $SD = 4.40$ ).

#### Procedure

Participants were randomly assigned to either the failure ideation condition ( $n = 52$ ) or the success ideation condition ( $n = 52$ ). Participants listened to a prerecorded cassette tape containing three experiences they were to imagine as well as instructions for how to fill out the accompanying response booklet. The same general procedure described in Study 1 was followed for this study except as described below.

**Failure and success ideation.** Ideation type (success and failure) was a between-subjects factor; thus, separate audiotapes were created for the failure and success conditions. The same three failure stories from Study 1 were used. The three success stories were created by rewriting the failure aspects of each story into success aspects, thus creating stories that were "mirror stories" of the failure stories. The success stories were then recorded by the same person who had previously recorded the failure stories. The success stories replaced the failure stories in the success ideation tape; however, the instructions in the tape were spliced from the original failure ideation tape and thus remained constant across conditions.

**Self-encoding manipulation.** As in Study 1, after listening to each story, participants in both the success and failure ideation conditions were asked to complete sentences that reflected what they would have thought to themselves in response to that experience. Those in the unconditional

self-encoding condition completed the sentence "I am a(n) \_\_\_\_\_," and those in the interactionist self-encoding condition completed the sentence "I am a(n) \_\_\_\_\_ when \_\_\_\_\_."

After they completed each sentence, participants were instructed to repeat to themselves what they had written and to feel the impact of the words for 20 s. They then rated their affect. The same procedure was followed for each story.

**Stereotype activation.** Following the audio portion of the experiment, participants were told that they would take part in an unrelated impression-formation experiment and were taken to a different room. They were told that the goal of this study was to understand how people formed impressions of others on the basis of a limited amount of information. They then read a short passage intended to activate the male "jock" stereotype adapted from Neuberg and Newsom (1993). This stereotype was selected for the study because it is widely known by college students. The description read as follows:

Richard grew up in Chicago. He is twenty years old and is a junior in college, where he plays for the football team. He shares an apartment near campus with three friends. This semester, he is registered for sixteen credits, and has been having a hard time balancing his academic work with daily football practices. He has just had a big argument with one of this roommates.

Following this passage, participants rated their endorsement of a list of adjectives as descriptive of Richard. These ratings formed the basis of the stereotype endorsement measure (see below). Finally, they were debriefed, compensated for their participation, and dismissed.

#### Measures and Materials

**Pre- and postmanipulation affect assessment.** As in Study 1, participants rated their affect on a 10-point scale. The affect rating they completed prior to listening to the stories served as the premanipulation affect assessment. The mean premanipulation score was 6.60 ( $SD = 1.50$ ), and there were no differences as a function of experimental condition (unconditional:  $M = 6.83$ ,  $SD = 1.60$ ; interactionist:  $M = 6.37$ ,  $SD = 1.39$ ),  $t(102) = 1.56$ ,  $p = .12$ ; ideation type (failure:  $M = 6.77$ ,  $SD = 1.49$ ; success:  $M = 6.42$ ,  $SD = 1.52$ ),  $t(102) = 1.17$ ,  $p = .24$ , or the interaction between them ( $t < 1$ ).

After listening to each story and completing the corresponding manipulation sentence, participants rated their affect by circling the face that best described their current affect. Ratings across the three assessments for failure and success stories were averaged separately to have a more reliable postmanipulation affect measurement ( $\alpha = .79$  and  $.88$ , respectively, for failure and success stories). The patterns reported in the *Results* section below were the same when analyses were done separately for each affect assessment.

**Stereotype endorsement measure.** Following activation of the jock stereotype, participants completed a measure that listed 18 personality attributes taken from the Adjective Check List (ACL; Gough & Heilbrun, 1980; Heilbrun, 1981)—6 from the masculinity subscale (makes decisions easily, independent, self-confident, loud, boastful, and aggressive), 6 from the femininity subscale (helpful to others, considerate, gentle, emotional, gullible, and approval seeking), and 6 filler adjectives from the "A-2" scale (imaginative, sloppy, outgoing, cynical, dissatisfied, and forgetful). The filler items were selected from the A-2 scale in particular because of the scale's low intercorrelation with the masculinity ( $r = 0$ ) and the femininity ( $r = .06$ ) scales of the ACL (Gough & Heilbrun, 1980).

After reading the description of Richard, participants were asked to rate how well each of these adjectives described Richard on a scale from 1 (*not at all descriptive*) to 9 (*extremely descriptive*). Three participants declined to fill out the measure. The mean femininity rating for Richard was 4.08 ( $SD = 1.39$ ), whereas his masculinity rating was 5.27 ( $SD = 1.71$ ),  $t(99) = 29.47$ ,  $p < .001$ , indicating that the masculine stereotype was

activated successfully. Stereotype endorsement was indexed by the difference between the mean ratings on the masculine items and the mean ratings on the feminine items. Higher scores on this index reflected higher endorsement of the masculine stereotype, and the mean of this distribution was 1.81 ( $SD = 1.27$ ).

## Results

### Effect of Unconditional Versus Interactionist Self-Encoding on Affect

A GLM analysis was conducted on postmanipulation affect ratings with ideation type (success vs. failure), encoding condition (unconditional vs. interactionist), and their interaction as between-subjects predictors. Premanipulation affect ratings were entered as the covariate. The results indicated a significant Ideation Type × Encoding Condition interaction,  $F(1, 99) = 6.94, p < .01$ , controlling for initial affect. As Figure 2 illustrates, participants in the unconditional self-encoding condition (compared with those in the interactionist self-encoding condition) reported more extreme positive affect following success ideation (unconditional: adjusted  $M = 8.00, SE = .30$ ; interactionist: adjusted  $M = 7.22, SE = 0.26$ ),  $t(49) = 1.97, p = .05$ , and more extreme negative affect following failure ideation (unconditional: adjusted  $M = 4.35, SE = .27$ ; interactionist: adjusted  $M = 5.04, SE = .30$ ),  $t(50) = 1.74, p = .08$ .

The pattern of interaction between ideation type and encoding manipulation was similar when analyses were conducted separately for the first (success: interactionist,  $M = 6.86, SE = .31$ , and unconditional,  $M = 7.56, SE = .35$ ; failure: interactionist,  $M = 5.13, SE = .42$ , and unconditional,  $M = 5.07, SE = .38$ ),  $F(1, 99) = 2.31, p = .13$ ; second (success: interactionist,  $M = 6.90, SE = .30$ , and unconditional,  $M = 7.82, SE = .34$ ; failure: interactionist:  $M = 5.17, SE = .39$ , and unconditional,  $M = 5.07, SE = .35$ ),  $F(1, 99) = 3.84, p = .05$ ; and third (success: interac-

tionist,  $M = 7.52, SE = .32$ , and unconditional,  $M = 8.56, SE = .36$ ; failure: interactionist,  $M = 4.61, SE = .40$ , and unconditional,  $M = 3.64, SE = .36$ ),  $F(1, 99) = 9.35, p < .01$ , affect assessments.

To assess whether the effect of the manipulation changed depending on story sequence, we conducted ANOVAs on postmanipulation affect separately for failure and success stories, with encoding manipulation, assessment sequence (first, second, and third) as a repeated measures factor and premanipulation affect as a covariate. The results revealed that participants reported more extreme affect with each succeeding story in the success,  $F(2, 98) = 5.91, p < .01$ , but not in the failure ( $F < 1$ ) ideation condition. The effect of encoding manipulation did not differ as a function of story sequence in either ideation condition ( $F_s \leq 1$ ).

### Effect of Unconditional Versus Interactionist Self-Encoding on Stereotype Endorsement

A GLM analysis was conducted on participants' stereotype endorsement ratings, with ideation type (success vs. failure), encoding condition (unconditional vs. interactionist), and their interaction as between-subjects predictors. The postmanipulation affect ratings and the ratings on the distractor items in the stereotype endorsement measure were included as covariates in the model (i.e., the items from the A-2 scale of the ACL; Heilbrun, 1981).

The interaction between ideation type and encoding condition was not significant ( $F < 1$ ), and encoding condition was the only significant effect in the model,  $F(1, 95) = 10.76, p < .002$ . As Figure 3 shows, unconditional encoding led to greater levels of stereotype endorsement regardless of whether participants listened to success stories (unconditional: adjusted  $M = 1.52, SE = .26$ , interactionist: adjusted  $M = .68, SE = .23$ ),  $t(49) = 2.45, p < .02$ , or failure stories (unconditional: adjusted  $M = 1.66, SE = .23$ ; interactionist: adjusted  $M = .88, SE = .26$ ),  $t(48) = 2.93, p < .005$ .

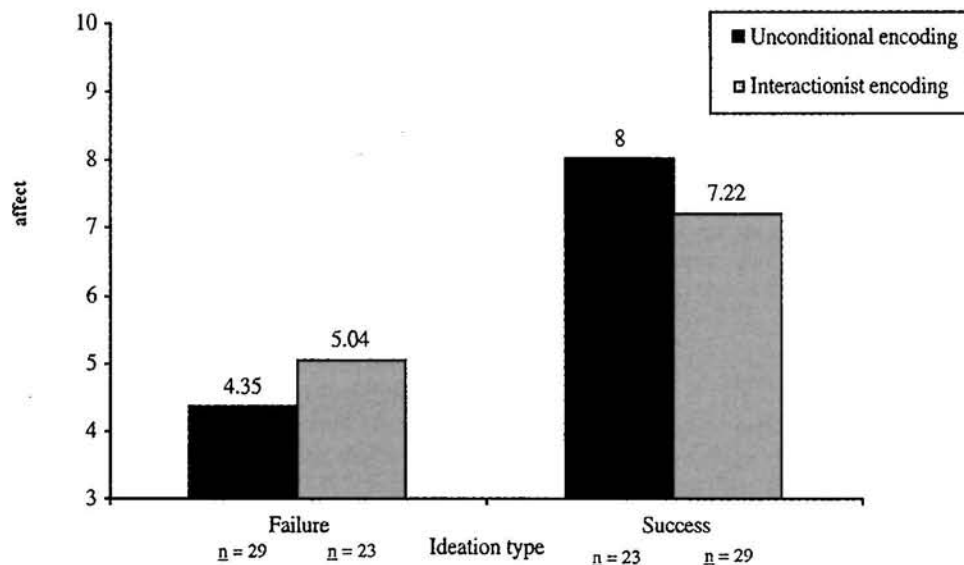


Figure 2. Postmanipulation affect (range = 1 [sad] to 10 [happy]) as a function of self-encoding condition (unconditional vs. interactionist) and ideation type (failure vs. success). The means are adjusted for premanipulation affect.

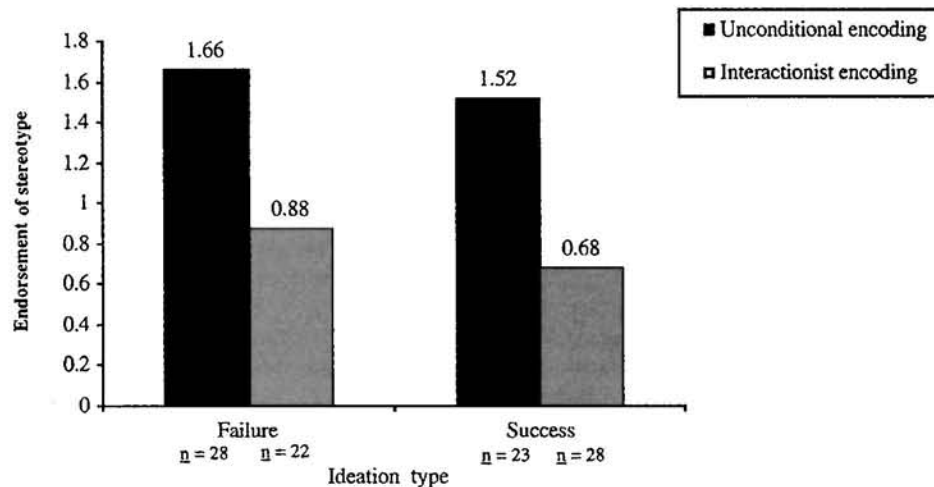


Figure 3. Endorsement of the masculine jock stereotype as a function of self-encoding condition (unconditional vs. interactionist) and ideation type (failure vs. success). The y-axis indexes the difference between ratings of the target on the masculine adjectives and the feminine adjectives. Hence, higher ratings indicate greater endorsement of the masculine jock stereotype. The means are adjusted for ratings on gender-neutral distractor adjectives and premanipulation affect.

#### Effect of Postmanipulation Affect on Stereotype Endorsement

To explore whether the effect of interactionist encoding on stereotype endorsement could be accounted for by the effect of postmanipulation affect on stereotyping, we conducted separate GLM analysis on stereotype endorsement for success and failure ideation groups with encoding condition and postmanipulation affect as predictors and ratings on the distractor items of the adjective rating task as a covariate. For both success and failure ideation, interactionist self-encoding was related to lower levels of stereotype endorsement even when controlling for postmanipulation affect ( $\beta = -.34, p < .05$  and  $\beta = -.25, p < .05$ , respectively). Affect, in contrast, was not significantly related to stereotype endorsement (success:  $\beta = .01, ns$ ; failure:  $\beta = -.18, p = .14$ ) when controlling for the effects of encoding condition. This is not surprising given that the zero-order correlations between postmanipulation affect and stereotype endorsement were also not significant in either the success,  $r(49) = .12, ns$ , or the failure ideation conditions,  $r(48) = -.21, ns$ . Together, these results suggest that endorsing the masculine stereotype in this study was determined directly by the way in which participants encoded themselves (unconditionally or in  $P \times S$  terms) rather than by the affect elicited by such encoding.

#### General Discussion

The present studies provide a first attempt to systematically and experimentally examine the causal role of  $P \times S$  interactionist self-encoding on how individuals process self-relevant information and organize their social perceptions. Classic conceptions of personality—and thus potentially of the self and its mental representations—have traditionally focused on relatively unconditional trait dispositions, guided by the assumption that people are characterized by pervasive cross-situational behavioral consistencies (as discussed in Mischel & Shoda, 1995, 1998). Research in the

last decade, however, has found compelling evidence for the locus of intraindividual consistency in the form of stable, predictable patterns of  $P \times S$  or *if . . . then . . .* behavioral “signatures” (she A when X but B when Y; Mischel & Shoda, 1995, 1998, 1999; Shoda & Mischel, 1998; Shoda et al., 1993, 1994). These findings, and the interactionist–connectionist, social–cognitive processing models from which they stem (e.g., Bandura, 1986; Cervone & Shoda, 1999; Dweck & Leggett, 1988; Mischel & Shoda, 1999; Read & Miller, 1998; Vansteelandt, 1999; Vansteelandt & Van Mechelen, 1998), provide a new focus for research on the stable “*I . . . when . . .*” signatures that may characterize the self.

Remarkably, the potential significance of  $P \times S$  interactions for conceptions of how the self is represented—and the consequences of such representations—have thus far remained relatively unexamined. The present research sought to address this gap, applying a theory-guided experimental paradigm to assess the causal role of such interactionist self-encoding on the regulation of affect and on social perception. In two studies, participants were prompted to encode self-relevant events either in unconditional (*I am . . .*) or interactionist (*I am . . . when . . .*) terms after vividly imagining themselves living through these events. Although it is possible that imagining failure experiences does not approach the realism of actually failing at a task, several researchers have demonstrated that imagination tasks ranging from reading depressing stories in which one imagines oneself as the protagonist (Morrow & Nolen-Hoeksema, 1990) to simply listening to sad music (Clark, 1983; Sutherland, Newman, & Rachman, 1982), successfully and powerfully affect participants’ cognitive–affective reactions (Wright & Mischel, 1982). Thus, we had reason to expect that even imagined experiences can be experienced as real, leading to vivid experiences.

In summary, in Study 1 it was shown that participants who were prompted to engage in interactionist,  $P \times S$  self-encoding following failure ideation became less sad than those who were prompted to make unconditional self-encodings. Study 2 found that interac-



tionist self-encoding attenuated emotional reactivity following both success and failure ideation. Further, the effects of the interactionist self-encoding also extended to the domain of social perception, leading to attenuated endorsement of global stereotypes in comparison with the effects of unconditional self-encodings. Finally, the relationship between interactionist self-encoding and stereotyping was not accounted for by changes in affect resulting from the interactionist manipulation. These results provide evidence supporting a direct effect of P × S interactionist self-encoding on enhanced social and emotional competence, an effect that has long been predicted (e.g., Cantor & Kihlstrom, 1987; Mischel, 1973; Moos, 1969; Raush et al., 1959) but for which experimental evidence has been lacking.

### *Alternative Explanations*

Although we obtained the theoretically predicted effects of interactionist encoding on affect regulation and social information processing, alternative explanations about the mechanism have to be considered. One possibility, for example, is that the conditional hedge (*when . . .*) in the interactionist encoding set might have somehow distracted participants from the failure experience or from their own their feelings, thus reducing affective reactions to success and failure experiences. However, the literature on negative mood regulation indicates that distraction helps reduce negative affect to the extent that attention is focused away from the eliciting event (e.g., Lyubomirsky, Caldwell, & Nolen-Hoeksema, 1998; Mischel, Ebbesen & Zeiss, 1972; Nolen-Hoeksema, 1991; Wegner and Wenzlaff, 1996). The conditional hedges in our interactionist encoding manipulation, by contrast, explicitly focus attention on the eliciting event specifically in relation to the self and should thus theoretically be poor distractors.

A second possibility is that interactionist encoding might engage the individual's resources to a greater extent than unconditional encoding. If so, however, one would expect that interactionist encoding would have an effect on stereotype reliance opposite to the one obtained. Specifically, research suggests that when perceivers' cognitive or attentional resources are strained, they are more prone to use stereotypes as heuristics in information processing (e.g., Gilbert & Hixon, 1991). Our results, however, showed that interactionist encoding leads to a reduced reliance on stereotyping.

Thus, it seems unlikely that the effects reported here can be accounted for in terms of distraction or cognitive capacity. Collectively, the results across Studies 1 and 2 seem to support the view that interactionist encoding enhances a sensitivity to the potentially stable, *if . . . then . . .* patterns of behavior, and discriminative facility more generally. At the same time that the findings point to the significance of the phenomenon, however, they also underline the importance of examining the underlying mechanisms with increasing depth and precision in future research.

### *Implications of Interactionist Self-Encoding for Adaptive Behavior*

Theoretically, in addition to the effects of interactionist self-encoding on affective self-regulation and social perception shown in the present studies, a focus on one's own *I . . . when . . .* signature may facilitate adaptive behavior by calling attention to the

close interplay between the psychological features of situations and the characteristic patterns of behavior that they tend to activate within oneself. Attention to these links between context and one's typical reactions can allow people to better discriminate the "hot" trigger stimuli that activate their distinctive nonoptimal automatic and emotional reactions, such as impulsive responding and anger (e.g., Metcalfe & Mischel, 1999; Mischel, Cantor, & Feldman, 1996). Such awareness, in turn, may allow one to develop a wider range of behavioral alternatives that are tailored to the demands of specific situations (Posavac et al., 1997) and thus potentially to engage in more effective coping (Crocker, 1999).

Interactionist self-encoding also may enhance the development of adaptive organization of the self-system through self-complexity (Linville, 1985, 1987) and through evaluative integration (Showers, 1992, 1995). Self-complexity refers to the organization of self-knowledge in terms of various aspects of the self that are differentiated from one another. By maintaining these various aspects of the self distinct, the individual is thought to be buffered against extremity of affect because successes or failures related to one aspect of the self (e.g., self as a parent) do not "spill over" into negative thoughts about other aspects of the self (e.g., self as a professional or self as an athlete). The present findings suggest the possibility that one way in which self-complexity might be achieved is through attention to the P × S interactions in one's behavior, as the interactionist manipulation prompted the participants in these studies to do.

Orthogonal to the number and independence of self-aspects is evaluative integration of self-knowledge, or the extent to which self-attributes of opposite valence are interconnected through complex but meaningful associations (Showers, 1995; Showers & Kling, 1996). This type of self-organization has been found to protect against negative affect and low self-esteem when negative information about the self becomes accessible (Showers, 1992). Consistent with our theoretical perspective and the present findings, Showers suggested that integrated self-views may be naturally represented in the form of statements such as "When I'm with friends, I have no trouble speaking up, but when I'm with people I don't know very well, I can hardly say a word" (Showers & Kling, 1996, p. 157). Thus, evaluative integration may be facilitated by, and indeed possibly contingent on, successfully encoding positive and negative self-attributes in terms of *I . . . when . . .* P × S interactions.

### *Links Between Interactionist Encoding and Discriminative Facility*

Conceptually, interactionist encoding is also closely related to discriminative facility, defined as the individual's sensitivity to subtle cues about the psychological meaning of situations (Cheng, Chiu, Hong, & Cheung, 1999; Chiu et al., 1995; Mischel, 1973; Shoda et al., 1993), and which has been identified as playing a role in social competence (Cantor & Kihlstrom, 1987; Dodge, 1986). Discriminative facility requires attention to the situation and a recognition of situational contingencies and is therefore closely linked to interactionist encoding. In addition, however, some individuals may encode failure experiences conditionally, yet encode success experiences unconditionally to maximize the "positive glow" associated with those experiences (e.g., Lewisohn et al., 1980; S. E. Taylor & Brown, 1988). Such a flexibility may be

considered a “meta-discriminative facility,” that is, knowing when to discriminate and when not to, and as such may constitute an important aspect of social intelligence (Cantor & Kihlstrom, 1987; Mischel, 1973; Mischel & Shoda, 1995).

However, unbounded globality in the face of success experiences might also contribute to a “positive bubble” that is likely to burst following the inevitable setback and could lead to an even greater decrease in affect. Thus, although unconditional self-encoding may increase happy affect in the short term, there is reason to believe that this type of encoding may actually place individuals at risk for maladaptive responses to subsequent failure. Consistent with this thinking, Dweck and colleagues (Kamins & Dweck, 1999; Mueller & Dweck, 1998) have found that praising children for their intelligence in terms of global traits (e.g., “you are smart”) leads to greater self-blame and decreased performance following setbacks than praising children for effort. Along similar lines, people who typically experience extremes of positive affect have been found to be more likely to experience extremes of negative affect (Diener et al., 1991; Diener & Larsen, 1984). Professional athletes often talk about the value of maintaining a “cool head” regardless of the success or failure one experiences during competition. “I don’t get real emotional,” Mike Bibby of the National Basketball Association told *Sports Illustrated*, “Whatever happens, good or bad, I have to keep the same attitude. That’s the best way to make it in this league” (P. Taylor, 1999, p. 68).

#### Future Directions

Building on recent theoretical and empirical developments in personality that establish *if . . . then . . .* signatures as a locus of behavioral stability and coherence (e.g., Mischel & Shoda, 1995, 1998, 1999), the present studies explored the implications of focusing on encoding the self in terms of *I . . . when . . .* profiles. The findings showed that  $P \times S$  interactionism in self-encoding can help individuals regulate their emotions more effectively and engage in more discriminative social perception. Given these encouraging results, the next step is to consider how interactionist versus unconditional self-encoding may affect other aspects of the self-system. Current interactionist–connectionist conceptualizations of personality (e.g., Cervone & Shoda, 1999; Mischel & Shoda, 1995, 1998, 1999; Read & Miller, 1998; Vansteelandt & Van Mechelen, 1998) suggest that social behavior reflects dynamic interactions not only among encodings and affect—the focus of the present studies—but also the person’s goals, beliefs, expectations, and self-regulatory competencies (Mischel & Shoda, 1995). It will be challenging to explore the implications of interactionist self-representations for all of these processes within the self-system.

A decade ago, Cantor and Kihlstrom (1987, p. 7) claimed: “Intelligent action, as contrasted with the instinctual or reflexive, is flexible rather than rigidly stereotyped, discriminative rather than indiscriminative, and optional rather than obligatory. As such it stands as a marker of human potential.” Might interactionist self-encoding be a key ingredient of social intelligence that facilitates the realization of that potential?

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