

It Takes Two to Mimic: Behavioral Consequences of Self-Construals

Rick B. van Baaren
University of Nijmegen

William W. Maddux and Tanya L. Chartrand
Ohio State University

Cris de Bouter and Ad van Knippenberg
University of Nijmegen

The present studies demonstrated the moderation of self-construal orientation on mimicry. Recent research has indicated that an interdependent self-construal is associated with assimilation of the other to the self whereas an independent self-construal is associated with minimizing the influence of others on the self (H. R. Markus & S. Kitayama, 1991; D. Stapel & W. Koomen, 2001). Therefore, the authors hypothesized that an interdependent self-construal would be associated with more mimicry than an independent self-construal. When self-construal orientations were experimentally primed, as in Studies 1 and 2, independent self-construals produced less nonconscious mimicry than interdependent self-construals. When self-construals were examined as cultural differences with either a chronically dominant independent (Americans) or interdependent (Japanese) construal of the self, these results were replicated.

Historically, social psychologists have tended to think of the construct of “self” as an independent entity, as something that is separate and distinct from other people. However, more recent evidence, particularly from the cross-cultural domain, has begun to suggest that in many cases the construal of self depends largely on social variables, such as one’s relationship with others or one’s membership in social groups (Brewer & Gardner, 1996; Markus & Kitayama, 1991). In other words, individuals may often seek to define themselves in terms of their relations with others or in terms of their group affiliations, the so-called *social self* (Brewer & Gardner, 1996). In fact, recent motivational theories have posited that connectedness and belonging with others make up fundamental human drives that individuals are constantly striving to satisfy (Baumeister & Leary, 1995; Brewer, 1991).

Initial research on different types of self-construals focused on cross-cultural differences. In an overview of the relevant literature, Markus and Kitayama (1991) argued that individuals with Western and Eastern cultural backgrounds differ in how they perceive themselves in terms of their relationships with others. On average, Westerners and other members of *individualistic* societies tend to construe themselves in terms of their own unique personal traits

and attributes (e.g., I am tall; I am a good swimmer), whereas East Asians and members of other *collectivist* societies tend to focus more on how the self is related to other people (e.g., I am John’s friend; I am a mother; Cousins, 1989; Ip & Bond, 1995; Markus, Mullally, & Kitayama, 1997). Markus and Kitayama (1991) labeled Westerners’ focus on the personal self and deemphasis of others the *independent self-construal* and Easterners’ tendency to focus on the social self the *interdependent self-construal*.

In this framework, an independent self-construal accentuates self-related features and minimizes the influence of others in the self-schema, resulting in a bounded and autonomous self that is distinctly separate from others. Conversely, the interdependent self-construal represents inclusion of others in the self, particularly with regard to others who are part of important relationships, as well as in-group members from small, well-connected groups (Aron, Aron, & Smollan, 1992; Brewer & Gardner, 1996; Markus & Kitayama, 1991; Yuki, in press). This idea is akin to the concept of a relational self as defined by Brewer and Gardner (1996) or to the more interdependent social nature of women versus men in the West (Cross & Madson, 1997). This interdependent nature is reflected by the fact that Japanese people, as exemplars of an interdependent society, show a tendency to relationship enhance but not to self- or group enhance, in contrast with Westerners’ robust tendencies to both self- and group enhance (Endo, Heine, & Lehman, 2000). In addition, people with interdependent self-construals show fewer self-related biases, such as unrealistic optimism (Heine & Lehman, 1995, 1997) and false uniqueness (Markus & Kitayama, 1991) and have an increased tendency to conform to situational norms (Kim & Markus, 1999) and the decisions of others (Iyengar & Lepper, 1999).

Although different self-construals tend to predominate in different cultures, research also indicates that both types of self-construals can coexist within the individual and that each type of self-construal may be activated at different times or in different

Rick B. van Baaren, Cris de Bouter, and Ad van Knippenberg, Department of Social Psychology, University of Nijmegen, Nijmegen, the Netherlands; William W. Maddux and Tanya L. Chartrand, Department of Psychology, Ohio State University.

The preparation of this article was supported in part by National Institute of Mental Health Grant 1 R03 MH65250-01 to Ad van Knippenberg. We thank Kerry Kawakami and Rob Holland for their very helpful comments and Takako Imamura and Karen Banks for their help in Study 3.

Correspondence concerning this article should be addressed to Rick B. van Baaren, Department of Social Psychology, University of Nijmegen, P.O. Box 9104, 6500 HE Nijmegen, the Netherlands. E-mail: r.vanbaaren@psych.kun.nl

contexts. Several researchers have demonstrated that independent and interdependent self-construals can be experimentally primed, indicating that contextual factors can influence which self-construal is active at any one time (Brewer & Gardner 1996; Gardner, Gabriel, & Lee, 1999; Kühnen, Hannover, & Schubert, 2001; Stapel & Koomen, 2001). For example, Gardner et al. (1999) primed participants living in an individualist society (the United States) or a collectivist society (Hong Kong) with a story that either (a) reflected independence, (b) reflected interdependence, or (c) gave them no prime. Next, participants received a value inventory that consisted of items that reflected both an individualist and a collectivist orientation (Schwartz, 1992; Triandis, McCusker, & Hui, 1990). The results indicated that the priming procedure altered the value endorsements of participants; participants from the United States endorsed collectivist values to a greater extent when they were primed with an interdependent story compared with their control condition, and participants from Hong Kong endorsed individualist values more after an independence prime compared with participants in their respective control condition.

Further evidence for contextual influences on self-construals has come from a recent study by Stapel and Koomen (2001). Specifically, in a social comparison paradigm, it was consistently found that priming participants' interdependent self-construal resulted in assimilation toward others, whereas priming participants' independent self-construal resulted in a tendency to differentiate from others when describing oneself in relation to a target person. In Stapel and Koomen's first experiment, for example, participants were given a priming task developed by Brewer and Gardner (1996) in which participants are instructed to circle all pronouns that appear in the text describing "a trip to the city." In the personal self condition, the pronouns *I* and *me* appeared frequently; in the social self condition, the pronouns *we* and *us* appeared frequently; and in the control condition, the pronoun *it* was present a number of times. Participants then read about a target who was described as either successful or unsuccessful at academics and business. Afterward, participants rated themselves on several traits. The results indicated that the self-evaluations of participants assimilated to the target in the social self condition (i.e., they rated themselves as relatively good in the success condition but as relatively bad in the failure condition), whereas participants in the personal self condition tended to contrast their self-evaluative judgments away from the target.

Consequences of Self-Construals on Information Processing

Self-construals are of fundamental importance to the way people react and process information related to the social environment. As succinctly stated by Markus and Kitayama (1991),

People in different cultures have strikingly different construals of the self, of others, and of the interdependence of the two. These construals can influence, and in many cases determine, the very nature of the individual experience, including cognition, emotion and motivation. (p. 224)

One of the most striking examples of the effect of self-construals on cognition is the heightened context sensitivity of individuals with an interdependent focus. Collectivists and other

people with interdependent self-construals are associated with a processing style in which the entire environmental field is taken into account. Individualists and people with independent self-construals are associated with a processing style that involves separating objects and people from their context (for a review, see Nisbett, Peng, Choi, & Norenzayan, 2001). Thus, the more one is attuned to others and the environment, the more holistic (vs. analytic) cognition becomes and the more sensitive one becomes to context and contextual variation in the environment (Choi & Nisbett, 2001; Kühnen et al., 2001; Masuda & Nisbett, 2001; Nisbett et al., 2001) and to group versus individual attributions of causation (Hong, Morris, Chiu, & Benet-Martinez, 2000; Morris & Peng, 1994).

This theorizing suggests that two different types of processing styles exist that are specifically related to certain self-construals (Nisbett et al., 2001). When individuals define themselves as fundamentally separate from other people and as unique and bounded individuals, they also apply this processing style to the social environment. When processing social information, they detach objects from their respective contexts and focus on the attributes of the object, reflecting a context-independent processing style. However, when individuals think of themselves as a part of a larger social context and as fundamentally connected to and included with others, individuals tend to process social information in a manner that combines object and context into an integrated whole, reflecting a context-dependent processing style.

For instance, Ji, Peng, and Nisbett (2000) administered the Rod and Frame Test (Witkin et al., 1954) to both East Asian and American participants to examine whether they differed in their processing styles. In this paradigm, a rod is placed in a rectangular box and the participants' task is to indicate whether this rod is vertically oriented. Because of their heightened context sensitivity, the orientation of the rectangular box itself influences this judgment more for context-dependent participants than for context-independent participants. The performance by East Asian participants indicated that they experienced more difficulty in processing the rod independent of the frame than did American participants, which is consistent with the idea that East Asians process information in a more context-dependent fashion than Americans.

To directly assess the relationship between self-construals and context dependency in information processing, Kühnen and his colleagues (Kühnen et al., 2001; Kühnen & Oyserman, 2002) primed either independent or interdependent self-construals and then measured the context dependency in the information processing of participants. In one study, Kühnen et al. (2001) first primed either independent or interdependent self-construals by means of a personal-pronoun-circling task (Brewer & Gardner 1996; Gardner et al., 1999) and then administered the Embedded Figures Test (Witkin & Goodenough, 1977). In this task, simple geometrical objects are embedded in larger, more complex patterns. As expected, participants primed with independence were better at detecting these simple objects than participants primed with interdependence. These results suggest that an independent self-construal is associated with a context-independent processing style.

The studies described so far illustrate that self-construals have a profound impact on the way people perceive others, their environment, and themselves. The question remains, however, whether self-construals can also affect unconscious behavior toward other people.

Behavioral Consequences of Self-Construals: Can Self-Construals Affect Nonconscious Mimicry?

A central factor in the construal of the self is the closeness and similarity between the self and others. Research on the self (Cousins, 1989; Markus & Kitayama, 1991) and on social perception (Kühnen et al., 2001; Kühnen & Hannover, 2000; Nisbett et al., 2001; Stapel & Koomen, 2001) has provided evidence that seeing oneself as fundamentally distinct and separated from others is associated with the process of differentiation, either differentiation of the self from others or differentiation of individual objects from the environment as a whole. On the other hand, seeing oneself as fundamentally connected and similar to others is associated with the processes of assimilation and integration, with regard to the self as well as other objects (Markus & Kitayama, 1991; Masuda & Nisbett, 2001; Stapel & Koomen, 2001). Given these basic assimilation and differentiation tendencies that accompany self-construal orientations, it is likely that these tendencies will also be observed on a behavioral level. In other words, when people perceive themselves as similar to others and have a tendency to assimilate, it seems likely that they will also behave similarly to others. In contrast, when they perceive themselves as fundamentally distinct from others and have a tendency to differentiate, they may also tend to behave differently from the people around them.

Perhaps the simplest and most fundamental social behavior is the tendency for people to nonconsciously mimic others. This effect has been observed for a wide variety of behaviors (for a review, see Chartrand, Maddux, & Lakin, in press). For instance, people mimic words (Bock, 1986, 1989), accents (Giles & Powesland, 1975), rate of speech (Webb, 1969, 1972), tone of voice (Neumann & Strack, 2000), syntax (Levelt & Kelter, 1982), laughter (Young & Frye, 1966), facial expressions (Hsee, Hatfield, Carlson, & Chemtob, 1990), emotions (Hatfield, Cacioppo, & Rapson, 1994), mood (Neumann & Strack, 2000), and, especially relevant to the present studies, physical mannerisms (Chartrand & Bargh, 1999).

Although much of this research has focused on individuals mimicking others with whom they have an established relationship, Chartrand and Bargh (1999) demonstrated that behavioral mimicry occurs spontaneously even among strangers in the most minimal of circumstances. In this research, participants interacted with an unknown confederate in two consecutive, brief picture-describing sessions. In one session, the confederate either rubbed her face or shook her foot while describing the pictures with the participants, whereas the second confederate performed the behavior that the first confederate did not. The behavior of the participants, recorded on videotape, showed that participants shook their foot more in the presence of the foot-shaking confederate, and rubbed their faces more in the presence of the face-rubbing confederate. Debriefing indicated that participants were unaware of their mimicry. Thus, this behavioral assimilation seems to occur automatically when people are in an interactive situation. However, on the basis of the evidence that assimilation to others is more associated with an interdependent self-construal than an independent self-construal (Dijksterhuis & van Knippenberg, 2000; Stapel & Koomen, 2001), we propose that more mimicry will occur when the interdependent self is activated than when the independent self is activated.

The Present Research

In three experiments, we tested the prediction that self-construal orientation affects nonconscious mimicry. In Study 1, we predicted that priming an independent self-construal would reduce mimicry compared with a control condition in which mimicry was expected to occur (Chartrand & Bargh, 1999). In Study 2, we predicted that participants in an interdependent-self priming condition would mimic more than participants in a control condition, who in turn would mimic more than participants in the independent-self priming condition. In Study 3, we investigated mimicking behaviors of participants who differed in terms of their chronic self-construal orientation. Specifically, we compared mimicking tendencies of participants with Eastern cultural backgrounds, who tend to have chronic interdependent self-construals, with participants of Western cultural backgrounds, who tend to have chronic independent self-construals (Markus & Kitayama, 1991). We predicted that Japanese participants, as exemplars of people from Eastern cultural backgrounds, would mimic more than Americans, who typified individuals from Western societies.

Study 1

In our first experiment, we compared mimicry in a control session and a session where the independent self was activated. The procedure was similar to the original procedure used by Chartrand and Bargh (1999). However, instead of using a picture-describing task, we used a task that unobtrusively activates or does not activate the independent self. In accordance with previous findings by Chartrand and Bargh, we predicted that participants in the control session would mimic the behavior of the confederate. In the session where the independent self was activated, however, we expected no such behavioral assimilation.

Method

Overview. Participants interacted with two different naive confederates in two different sessions. In both sessions they worked on a bogus translation task. In one session, the words were related to the independent self; in the control session, the words were not related to the self. The confederates performed one of two behaviors: foot shaking or face rubbing. The confederate in Session 2 performed the behavior that the confederate in Session 1 did not perform. Participants were videotaped, and two judges coded their behaviors to examine whether participants mimicked the behavior of the confederates.

Participants and design. Thirty-eight female undergraduate students from the University of Nijmegen were paid for their participation. The experiment had a 2 (behavior: foot shaking or face rubbing) \times 2 (translation task: independent self or control) within-subjects design. The order of behaviors, confederates, and translation tasks were counterbalanced across participants.

Procedure. On arrival at the laboratory, participants were led into a room by the experimenter and seated in such a way that they were completely visible to a camera concealed in a fire detector attached to the ceiling. After seating the participant, the experimenter brought in a second "participant," who in fact was a confederate. The confederate's chair half-faced the participant and half-faced the experimenter. After the confederate arrived in the room, the experimenter seated himself behind a desk in such a way that his arms and legs could not be seen by the participant. The experimenter explained to participants that they would be asked to complete a language experiment that tested an alleged "feeling for grammar." Participants were told that, although they are not familiar with a

language, they still have some implicit knowledge about grammar. The task of the participant and the confederate was to take turns reading aloud sentences in a bogus language, which was introduced as an actual Polynesian language. In all sentences one word was replaced with a blank and participants were asked to guess the Dutch translation of the word. In the independent-self condition the words they could choose from were *I*, *me*, and *mine*. In the control condition, the words were *he*, *him*, and *his*. After the confederate read the first sentence and randomly chose a word, the participant read the second sentence and chose a word until all 14 sentences were read. During the task, the confederate either rubbed his face or shook his foot. The confederate was trained to display four of the intended behaviors per minute. The session lasted approximately 5 min.

After the first session, the experimenter informed the confederate and the participant that there would be a second session and that they would complete their tasks with a new partner. The confederate was instructed to follow the experimenter to another room to meet a new "participant." After 1 min, the experimenter returned to the experimental room with a new confederate. The procedure was similar to the first session with two minor modifications. The participant and the confederate were given a different though similar translation task, and the new confederate performed the behavior not displayed by the confederate in the first session. All confederates were unaware of the hypotheses. Each participant received both the independent self session and the control session in a counterbalanced order. Following the second session, the participant was led into another room in which she was asked to sign the video release form and was debriefed.

Results and Discussion

Interjudge reliability. Two judges blind to experimental conditions coded the videotapes. For each session the following variables were coded: face rubbing, foot shaking, and smiling. The interjudge reliabilities were high for foot shaking ($r = .98$), face rubbing ($r = .97$), and smiling ($r = .86$). Therefore, a mean rating of the two judges was taken and divided by the duration of the interaction. Each participant, therefore, had three scores that reflected the frequency per minute of each behavior.

Mimicry. Because there was no difference between the frequency of foot shaking and face rubbing, these behaviors were combined in an index of imitative and nonimitative behaviors. Specifically, the imitative behavior was face rubbing when the confederate rubbed his face and foot shaking when the confederate shook his foot. Nonimitative behavior was face rubbing when the confederate shook his foot and foot shaking when the confederate rubbed his face.

To examine the effect of an independent self-construal on mimicry, a 2 (translation task: self-focus or control) \times 2 (behavior: imitation or nonimitation) repeated-measures analysis of variance (ANOVA) was executed on the behavior scores. A main effect of translation task was found, $F(1, 37) = 11.21, p < .01$. Participants performed more behaviors in the control session ($M = .81, SD = .47$) than in the independent self session ($M = .64, SD = .42$). As expected, this effect was qualified by a significant Translation Task \times Behavior interaction, $F(1, 37) = 4.43, p < .04$ (see Figure 1). Simple effect analyses confirmed that participants in the control session showed the imitative behavior more ($M = .97, SD = .76$) than the nonimitative behavior ($M = .56, SD = .40$), $F(1, 37) = 5.48, p < .03$. In the independent-self session, there was no significant difference between the imitative ($M = .65, SD = .46$) and the nonimitative ($M = .72, SD = .66$) behavior, $F(1, 37) = 2.09, ns$.

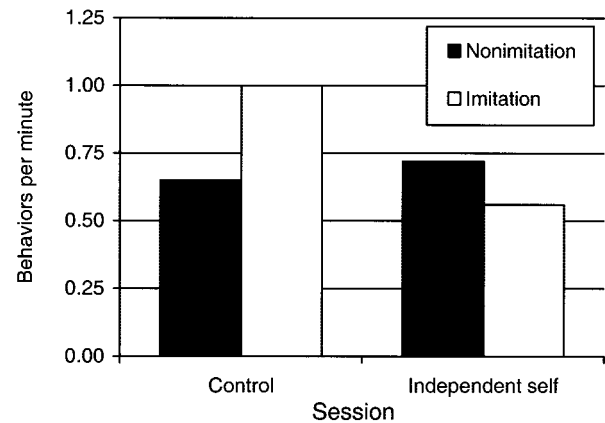


Figure 1. Amount of mimicking by behavior and self-construal, Study 1.

These results confirmed our expectations and provided initial evidence that self-construals moderate unconscious mimicry. In the control session, participants mimicked the mannerisms of a confederate: They rubbed their faces when the confederate rubbed his face, and they shook their feet when the confederate shook his. This study replicates previous research showing that people have an unconscious tendency to mimic others (Chartrand & Bargh, 1999). However, when the independent self-construal of these participants was activated, they did not mimic the mannerisms of the confederate. While in a normal interaction, even strangers have a tendency to assimilate their behavior to others; when an independent self-construal is activated, however, this tendency is reduced.

Study 2

Study 1 was successful in demonstrating the moderating role of an independent self-construal on mimicry. It is unclear, however, whether mimicry will occur when an interdependent self-construal is active. Although one could argue that any reference to the self will result in a cessation of environmental influence on behavior (Dijksterhuis & van Knippenberg, 2000), the present theorizing suggests that although activation of the independent self decreases mimicry, activation of the interdependent self will increase mimicry. To test this assumption, Study 2 included three conditions: an independent-self condition, an interdependent-self condition, and a control condition. To activate the independent and interdependent self-construals, a scrambled sentence task (Kühnen & Hannover, 2000) was used.

In Study 2, we also introduced a new target behavior. Instead of face rubbing and foot shaking, the confederate was instructed to pick up and put down a pen several times during the interaction. Like face rubbing and foot shaking, pen playing is a natural but unobtrusive and unambiguous behavior that can be observed in a variety of situations. Changing the dependent variable of interest allowed us to investigate the generalizability of nonconscious mimicry to other behaviors. In contrast to Study 1, which used a within-subjects design, Study 2 introduced a between-subjects design to examine the effects of priming.

Method

Overview. Some participants were first presented with a scrambled sentence task to activate either the interdependent self or the dependent self. Next, participants interacted with an experimenter on an irrelevant listening task. During this phase, the experimenter played with a pen. The participant's behavior was videotaped to examine whether he or she mimicked the experimenter's behavior.

Participants and design. Eighteen male and 33 female undergraduate students from the University of Nijmegen were paid for their participation. The data from 3 participants were excluded from analyses because they failed to correctly complete the scrambled sentence task. The experiment had a single-factor (self-construal: independent, control, or interdependent) between-subjects design.

Procedure. On entering the laboratory, participants were escorted to a room by an experimenter who was blind to condition. A hidden camera was placed in a fire detector, hanging from the ceiling. The experimenter informed participants that they would be asked to participate in several independent tasks. In the first task, participants received 18 scrambled sentences (Kühnen & Hannover, 2000) in which participants were either primed with the independent or dependent self. Kühnen and Hannover (2000) successfully used this scrambled sentence task to manipulate perceived self–other similarity, which increased after interdependence priming and decreased after independence priming. Each sentence consisted of five words that were not in the correct order, and participants were asked to make a grammatically correct four-word sentence (e.g., “a bike fiercely rides he” becomes “He rides a bike”). In the independent-self condition, 15 of the sentences contained a word related to the independent self (e.g., *unique, alone, individual*). In the interdependent-self condition, 15 of the sentences contained a word related to the interdependent self (e.g., *together, group, cooperate*). Participants in the control condition were not primed and therefore did not receive the scrambled sentence task.

Participants were instructed to come and get the experimenter from an adjacent room when they had finished. The experimenter then entered the room and sat behind a table at a 90° angle to the participant. The scrambled sentence task and the pen were in front of the participant, but behind a CD player that blocked them from the experimenter's view. The experimenter explained that the participant would listen to four music fragments and then rate each fragment. The experimenter would write down the ratings on a sheet of paper. During the task, the experimenter was instructed to act in a neutral manner and to play with his pen approximately five times a minute. The number of seconds the participant played with the pen during the music-rating task was the main dependent variable. Note that the participant did not need a pen for this task, because the answers were given verbally. After the music task, the participant was asked to sign a video release form and was debriefed.

Results and Discussion

We hypothesized that the most mimicry would occur in the interdependent-self condition and the least mimicry in the independent-self condition. To test this hypothesis, we entered the amount of pen playing¹ in a one-way factorial (self-priming: independent, control, or interdependent) ANOVA. A main effect of self-priming was found, $F(2, 46) = 4.40, p < .02$. Contrasts revealed that participants in the independent-self condition played significantly less with their pen ($M = 1.39$ s, $SD = 3.35$) than participants in both the control condition ($M = 4.38$ s, $SD = 5.00$), $t(46) = -2.01, p < .05$, and participants in the interdependent-self condition ($M = 6.80$ s, $SD = 7.09$), $t(46) = -2.59, p < .01$ (see Figure 2). Although the contrast between the interdependent and the control condition was not significant, $t(46) = .59, ns$, a strong significant linear trend, $t(46) = 2.95, p < .01$, indicated that

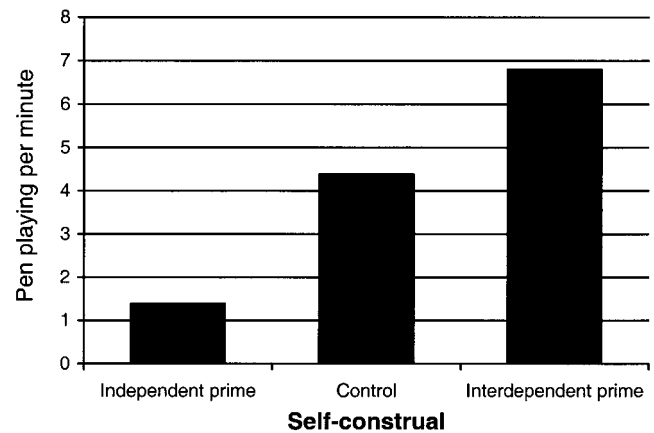


Figure 2. Amount of mimicking, Study 2.

mimicry in the interdependent-self condition was highest, followed by mimicry in the control condition, and finally by mimicry in the independent-self condition.²

Together with Study 1, these results demonstrate that self-construals moderate nonconscious mimicry. Priming the independent self-construal led to less mimicry than in a control condition, whereas priming the interdependent self-construal led to more mimicking than in the control condition. However, although the means differed considerably in the predicted direction, and a strong linear trend was observed, no significant difference was found between mimicry in the control condition and the interdependent self condition. From a theoretical point of view one could argue that a control condition may be a difficult concept when studying self-construals. It is not unlikely that at any given point of time both self-construals are active to some degree. Perhaps a no-priming condition reflects nothing more than a mixture between participants with a (temporarily or chronically) dominant independent self-construal and participants with a (temporarily or chronically) dominant interdependent self-construal. However, despite the nonsignificant difference between the interdependent condition and the control condition, our emphasis theoretically and empirically is on the comparison between the independent and interdependent self, a comparison that was highly significant.

Study 3

Results from Studies 1 and 2 indicate that priming an interdependent self-construal leads to more mimicry than priming an

¹ Pen playing is an unambiguous behavior that is easily detected compared with foot shaking and face rubbing, which leave more room for discussion when coded. Therefore only one judge coded the behavior.

² For Studies 2 and 3, additional analyses were performed including gender of the participants as a factor. Neither study found any significant effects ($F_s < 1$). We believe that one might have predicted gender moderation of mimicry given the literature concerning chronic gender differences in relational interdependence (Cross & Madson, 1997). We did not find such moderation in the current studies. However, we believe that this may be because we did not have sufficient statistical power to test such a model, which would involve systematically crossing participant and confederate gender.

independent self-construal. Although both of these studies temporarily activated these constructs via priming manipulations, an additional means of testing the reliability of these effects is by comparing behaviors of participants whose self-construals are chronically independent or interdependent. Thus, Study 3 focused on the distinction between participants with chronic self-construal differences.

A large body of evidence exists suggesting that Japanese have a chronic interdependent construal of the self, whereas Americans have a chronic independent construal of self (for reviews, see Fiske, Kitayama, Markus, & Nisbett, 1998; Markus & Kitayama, 1991). Compared with Americans, Japanese tend to make more references to others when describing themselves, have less knowledge of themselves and more knowledge about other people, and tend to describe themselves within specific social contexts rather than in terms of concrete, immutable characteristics (Cousins, 1989; Markus et al., 1997; Markus & Kitayama, 1991). In addition, whereas Americans show robust tendencies toward self- and group enhancement, Japanese people only show enhancement tendencies with regard to their relationships with others (Endo et al., 2000). Finally, Japanese and other East Asian groups have been shown to be especially concerned with harmonious interpersonal relationships, even more so than with their own personal self-esteem (Kwan, Bond, & Singelis, 1997). These findings are strong evidence for the interdependent, relationship-focused nature of the Japanese self-construal. Thus, in Study 3 we compared the mimicking behaviors of Japanese, who have well-documented chronic interdependent self-construals, with the mimicking behaviors of Americans, who tend to have more chronic independent self-construals.

Method

Participants. Thirty-four students at Ohio State University participated. Data from 3 participants (2 American men and 1 Japanese man) were excluded from analyses because of suspicions as to the veracity of the cover story, leaving the data from 31 participants for formal analysis. Sixteen participants were American (born and raised in the United States); 9 of these participants were women and 7 were men. Fifteen participants were Japanese (had come to the United States from Japan within the previous 4 years); 10 of these participants were women and 5 were men. All American participants were introductory psychology students recruited via the university's on-line research sign-up program. Eight of the 15 Japanese participants were also recruited in this manner. However, to have a larger number of Japanese participate in the study, 7 Japanese participants were solicited off campus (via Japanese student groups) and offered \$5 to participate in the experiment. All participants solicited in this manner were undergraduate or graduate students.

Procedure. The procedure essentially followed the basic procedure outlined in the Chartrand and Bargh (1999) studies. Participants were met by a White male experimenter at a designated waiting area. The experimenter called out the name of the participant as well as a second name. The second name was always the name of the first confederate (C1), who, as part of the cover story, was ostensibly late and not present during the name callout. Participants were then led to the experimental room and told to wait for a few moments for the second "participant" to show up. The participant was instructed to sit in a chair facing two cameras on the opposite walls that were disguised as stereo speakers. The experimenter then left the room and entered the control room next door. To obtain a baseline measure of the participants' habitual movements, the experimenter recorded the participant for 1 min before beginning the session.

After 1 min, the experimenter and C1 entered the room together. C1 was either an American woman or a Japanese woman, and the order in which the confederates presented themselves was randomly determined before the session. The experimenter explained that the second "participant" had just arrived and that they would now begin. C1 sat in a chair directly opposite the participant. This seat was positioned so that the confederate was in direct view of the participant but out of view of the cameras.

The experimenter then delivered the cover story. He explained that the experiment was concerned with the development of a new projection test, and that it was the job of the participants to look at a series of pictures and describe them to the other person. The experimenter explained that the purpose of the experiment was to determine how easy or difficult it was to describe these particular pictures, which would help determine whether or not to use them for the projection test. Participants were then told that they were to talk about what they saw in each picture for approximately 1 min and to describe the pictures to the other person. The experimenter explained that what was said about the photographs was unimportant, that the focus was instead on the ease or difficulty with which they could be described. If the participants were Japanese students who had been explicitly recruited on campus, they were told that they were recruited because we were looking for a diverse group of people to take part in the experiment, not just native-born Americans, and that the Japanese were our target group for Asian participants.

The experimenter then handed the participant and C1 two different sets of three laminated 20.3-cm \times 25.4-cm (8-inch \times 10-inch) photographs face down, with instructions not to look at them yet. The sets of photographs were taken from a set of 12 total photographs used in the experiment. The participants always described the same 6 photos, but these 6 were broken into two sets of 3 for each interaction. The photographs were taken from *Time* and *Life* magazines and included a range of scenes that varied in emotional content, action, and ambiguity. Care was taken so that participants (and confederates) described a set of photographs in each interaction that was fairly neutral overall in emotional content.

The experimenter then sat in a chair that was at approximately a 75° angle to the right of the participants so that he was out of their direct field of vision. Although participants could not see the experimenter without turning around, as a precaution against mimicking the experimenter, he was instructed to remain still while he was in the room.

At this point, C1 was always instructed to describe her first picture. C1 turned over the first photograph and described it, following a memorized script to ensure that responses were standardized across participants. Confederates were instructed to act and speak naturally, with natural pauses and hesitations, and to be somewhat but not overly friendly. Confederates were also instructed to rub their faces or head-hair area constantly but naturally and subtly during the interaction.

Following C1's first description, the experimenter interjected that the level of description and length was appropriate and asked the participant to turn over the first photograph to begin describing it. Participant and C1 continued taking turns describing the photographs until each had described the set of three.

At this point, the experimenter took the photographs and explained that this particular part of the experiment was complete. The participant was told that there was another pair of participants in the next room performing the same task, and that they were going to switch partners. The experimenter asked C1 to come with him to the next room, and told the participant that he would return momentarily with another "participant." The experimenter and C1 then left the room, and the experimenter and C2 entered the room a few moments later. The second interaction followed the same format as the first, the only differences being that the sets of photographs were different and that the participant was asked to begin the round of photo descriptions this time. C2 also spent the entire interaction touching her face-head area.

Following the second interaction, the experimenter explained that a series of follow-up questions would be administered to determine partici-

participants' views of the ease of description for the photographs. The experimenter said that in order to give each person enough privacy, one person would be taken to another room to work. The experimenter then gave each person a short questionnaire with several questions about how easy or difficult the photographs were to describe and asked C2 to accompany him to another room. The experimenter and C2 then left the room.

The experimenter returned in a few minutes to collect the questionnaire and to administer the debriefing. All participants received a "funneled debriefing" (Bargh & Chartrand, 2000). Questions were asked with increasing specificity that probed for suspicions about the cover story, the mannerisms of the confederate, and the true purpose of the experiment. Following the debriefing, the true purpose of the experiment was explained to participants. Participants were asked to sign a video release form, were paid for their participation (if payment had been promised), and were thanked for their time.

Results and Discussion

Interjudge reliability. Videotapes were coded by two independent judges blind to the hypothesis of the study. The total length of time (in seconds) each participant spent per minute rubbing his or her face was the main dependent measure. Three separate measurements were taken, one for the 1-min baseline period, one for the interaction period with the Japanese confederate, and one for the interaction with the American confederate. Reliabilities were $r = .84$, $r = .74$, and $r = .52$, respectively, with the first two being significant at the $p < .001$ level, and the third at $p < .01$.³ The mean of the two judges' ratings of face rubbing per minute were then taken as a single index for use as our main dependent measure.

Analysis of mimicry. Our main hypothesis was that Japanese participants would mimic more than American participants because of their chronic interdependent self-construal. To test this, a repeated-measures ANOVA was conducted, with participant culture (Japanese or American) as the between-subjects factor, confederate culture (Japanese or American) as the repeated, within-subjects factor, and time spent face rubbing as the dependent variable. As predicted, a main effect of participant culture was revealed, $F(1, 29) = 7.40$, $p = .01$, with Japanese participants spending a longer amount of time mimicking ($M = 6.79$ s/min) than Americans ($M = 2.29$ s/min). Simple effects tests revealed that Japanese participants mimicked both the Japanese confederate, $F(1, 30) = 5.80$, $p < .02$, and the American confederate, $F(1, 30) = 4.12$, $p = .05$, more than American participants did. There was no main effect of confederate culture and no interaction between confederate culture and participant culture ($F_s < 1.0$). It is interesting to note that the lack of interaction suggests that Japanese participants did not mimic the Japanese confederate significantly more than the American confederate, and American participants did not mimic the American confederate more than the Japanese confederate. Simple effects tests revealed this to be true ($F_s < 1$). Thus, Japanese participants mimicked more than American participants, regardless of the culture of the confederate. Finally, no significant effects emerged in mimicking when comparing Japanese participants who volunteered for the experiment with Japanese participants who were recruited on campus ($F_s < 1$). See Figure 3.

To rule out the possibility that the face rubbing exhibited by Japanese participants was the result of habitual movements rather than actual mimicking behavior, we compared the face rubbing exhibited by both groups during the 1-min baseline taken prior to

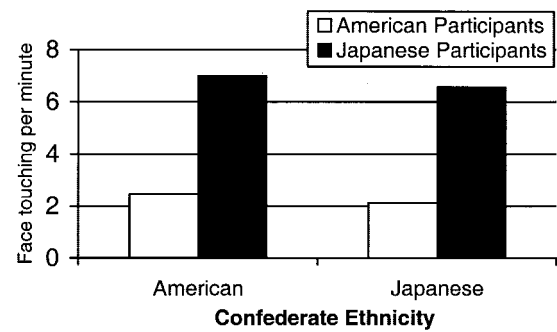


Figure 3. Amount of mimicking by participant and confederate ethnicity, Study 3.

the experimental interactions. Analyses revealed no significant differences in habitual face touching between the two groups during the baseline phase ($F < 1$).

Awareness of mimicking. To demonstrate that the mimicking was occurring nonconsciously, participants were probed for awareness concerning (a) the mannerisms of the confederates and (b) the purpose of the study. All participants completed a funneled debriefing (Bargh & Chartrand, 2000) that was administered orally by the experimenter. When asked if anything about the confederates stood out to them, no participants spontaneously mentioned face rubbing. When directly asked about mannerisms of the confederates, none mentioned that they had noticed the face rubbing, implying that they did not consciously mimic the mannerisms of the confederates. Finally, none of the participants guessed the actual purpose of the experiment, again suggesting that they were unaware that they had mimicked the confederates' mannerisms during the interactions.

Discussion

The results from Study 3 indicate that chronic differences in self-construal orientation can lead to differences in mimicking behaviors. In this case, Japanese participants mimicked both a Japanese and an American confederate more than American participants did. The results are consistent with those obtained via the priming paradigms in Studies 1 and 2. It is interesting to note that the cultural background of the confederate played no role in the mimicking behaviors of Japanese participants. They did not mimic an in-group confederate more than an out-group confederate, indicating that their tendency to mimic was not inhibited by group boundaries. However, this result is consistent with recent research suggesting that when in-groups are large and diffuse (in this case, the nationality of being Japanese), Japanese people tend to be much less loyal to such groups than Americans (Yuki, in press). This research suggests that for Japanese, the notion of an in-group is not defined as much by group boundaries as it is by the strength

³ Although interjudge reliabilities were lower in Study 3 than in Study 1, observed reliabilities were on par with what has been found in previous mimicry studies. For example, in Study 1 of the Chartrand and Bargh (1999) research on nonconscious mimicry, interjudge reliabilities for the amount of face rubbing exhibited by participants ranged from $r = .33$ to $r = .60$.

of a network of relationships. Thus, the fact that participants and confederates were strangers may have minimized or even eliminated any tendencies for Japanese participants to mimic the Japanese confederate more than the American confederate, because group boundaries may not have been particularly salient to Japanese participants in such a situation.

General Discussion

The main purpose of the present research was to investigate the impact of different self-construal orientations on nonconscious behavior. Because an interdependent self-construal is associated with assimilation of others to the self, whereas an independent self-construal is associated with exclusion of others from the self, we specifically predicted that individuals with interdependent self-construals would exhibit greater mimicry than individuals with independent self-construals. Across three studies and focusing on several different types of behaviors, our results consistently supported this prediction. In Study 1, participants primed with the independent self-construal mimicked the habitual movements of confederates significantly less than when they were not primed. In Study 2, participants primed with the independent self-construal mimicked significantly less than nonprimed participants, replicating the results from Study 1, and participants primed with an interdependent self-construal mimicked significantly more than independent-primed participants. Whereas the first two studies temporarily activated self-construals through priming procedures, Study 3 compared the mimicking behaviors of participants who had chronic interdependent self-construals (Japanese) with participants who had chronic independent self-construals (Americans). Once again, we found the predicted pattern of mimicking, with Japanese imitating confederates' face rubbing significantly more than Americans. Importantly, no participants in any of the three studies were aware of the mannerisms of the confederates or were aware of their mimicry of these mannerisms, suggesting that mimicry was occurring nonconsciously. In combination, these studies provide strong and varied evidence that self-construal orientation, whether primed or chronic, affects nonconscious mimicry.

Implications for Self-Construal Theory

Although previous self-construal research has focused on the effects of self-construals on self-other-related cognition, motivation, emotion, decision making, and information processing (Fiske et al., 1998; Markus & Kitayama, 1991; Nisbett et al., 2001; Stapel & Koomen, 2001), the present findings are, to our knowledge, the first to demonstrate that different self-construal orientations can lead to meaningful differences in nonconscious behaviors. In the same manner that interdependent self-construals lead to an increased tendency to cognitively, emotionally, and perceptually assimilate others to the self (Markus & Kitayama, 1991; Stapel & Koomen, 2001), we have argued that such self-construals can also lead to the assimilation of others' behaviors to the self nonconsciously, such that interdependent individuals tend to directly imitate or mimic others' habitual movements. Conversely, in the same way that independent self-construals are associated with the exclusion of others from the self, we have argued that when the independent self is active, nonconscious mimicry of others will be

inhibited, such that independent individuals are actively excluding others' behaviors from the self.

In fact, the results from Studies 1 and 2 indicate that there is an inhibiting effect of independent self-construal on mimicry. This finding is in line with research on independent-self activation and automatic behavior. For example, Dijksterhuis and van Knippenberg (2000) found that increasing self-awareness by placing participants in front of a mirror inhibited the automatic behavioral assimilation of stereotype primes. Furthermore, recent research has shown that priming an individual's personal self renders self-relevant attitudes and personal values more accessible (Holland, Verplanken, van Knippenberg, & Dijksterhuis, 2002) and enhances their impact on the participant's choices and behavior (Verplanken & Holland, 2002). Thus, it seems that personal-self activation leads one to behave more according to internal standards and be less influenced by environmental stimuli.

It seems possible that self-construal orientation influences differences in nonconscious mimicry in at least two ways. First, different self-construals involve differences in information processing. A context-independent processing style tends to lead to perceptual differentiation and a tendency to ignore contextual and background factors (Nisbett et al., 2001), which would likely lead one to increased attention on the self and less on others; thus, fewer mannerisms of others would be observed, decreasing the likelihood of mimicry. In contrast, a processing style that is context dependent and involves assimilation would subsequently lead to behavioral assimilation, because more attention is paid to the contextual environment and changes within it, making mannerisms more noticeable or more likely to be mimicked. Second, the fact that an interdependent self-construal is associated with greater concern with relationships and interpersonal harmony indicates that such individuals may also be implicitly taking the perspective of others more, or implicitly conforming to others' behaviors, in order to facilitate interactions. However, central to both a cognitive and motivational explanation is the tendency to assimilate versus differentiate behavior. Further research is needed to clarify the extent to which both of these processes occur.

Implications for Research on Nonconscious Mimicry

Mimicry has been shown to occur even in the most minimal of circumstances (Chartrand & Bargh, 1999; Neumann & Strack, 2000). Evidence obtained in Studies 1 and 2 supports this assessment. In both studies, nonprimed participants mimicked more than participants primed with an independent self-construal, suggesting that there seems to be some default amount of mimicry that tends to occur naturally and automatically in social situations. The finding that these nonprimed Western participants do mimic the behavior of a confederate, which is consistent with the original Chartrand and Bargh (1999) research, suggests that there is an interplay between chronic and situational determinants of self-construal orientation. The results from all three studies suggest that mimicry can be either inhibited or exacerbated depending on one's active self-construal orientation. Thus, although mimicry may indeed be a default, automatic, and unmediated behavior in certain circumstances, other circumstances can trigger various goals or differential cognitive orientations, which can alter the extent to which individuals mimic others.

Compared with people with independent self-construals, people with active interdependent self-construals are more attentive to and inclusive toward others and more concerned with positive relationships and social interactions. Recent research has also demonstrated that East Asians are more concerned with conforming to the situational norms and decisions of others than are Westerners (Iyengar & Lepper, 1999; Kim & Markus, 1999). Thus, the fact that they mimicked behaviors of others, one additional type of conformity, is a logical extension of previous research. The present research is also consistent with other recent research on the moderators of mimicry. In addition to self-construals, recent research suggests that individuals with perspective-taking goals (Chartrand & Bargh, 1999, Study 3), affiliation goals (Lakin & Chartrand, in press), or individuals who are high in self-monitoring (Cheng & Chartrand, in press) tend to mimic more than participants without these other-focused orientations.

Recent research has suggested that mimicry increases liking for the person who mimics as well as pro-social behavior, both of which are beneficial social consequences for the person who mimics (Chartrand & Bargh, 1999; van Baaren, Holland, Steenaert & van Knippenberg, in press). A recent study by van Baaren, Holland, Kawakami, and van Knippenberg (in press) has found evidence that mimicry not only has beneficial consequences for the mimicker but also for other people: Participants who had been mimicked by a confederate were more willing to help another confederate or donate money to a charity compared with nonmimicked participants.

The fact that other-focused cognition increases mimicry is consistent with the recent argument that mimicry may be a nonconscious tool of some sort that individuals may instinctively use to facilitate interactions with others (Chartrand et al., in press; Chartrand & Jefferis, in press; Cheng & Chartrand, in press; Lakin & Chartrand, in press). In terms of the present research, this explanation suggests that people with active interdependent self-construals may nonconsciously take advantage of the functional, facilitative nature of mimicry by using it more often in social interactions, thereby increasing the chances that their relationships with others will go smoothly and that they will be liked. Such may also be the case when individuals are focused on others in alternative ways, that is, when they have an affiliation goal or if they are perspective takers or are high in self-monitoring.

This interpretation is also consistent with the cross-cultural literature, where an abundance of evidence suggests that East Asians, as examples of individuals who tend to have chronic interdependent self-construals, are more concerned about positive relationships and harmonious interactions with others than are Westerners (Fiske et al., 1998; Markus & Kitayama, 1991). The fact that mimicry occurs most often when individuals are temporarily or chronically concerned about getting along with others seems to point directly to a functional role that mimicry plays in social situations. In fact, in a recent review chapter, Chartrand et al. (in press) have argued that given the recent evidence that mimicry generally increases with motivations to get along well with others, it may in fact be a tool that binds and bonds people together, a type of social glue. It may indeed be adaptive and beneficial in social interactions, tending to occur most often when harmonious interactions are most desired and used most often by individuals who are most concerned with positive social exchanges.

References

- Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, 63, 596–612.
- Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. T. Reis & C. M. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253–285). New York: Cambridge University Press.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497–529.
- Bock, J. K. (1986). Syntactic persistence in sentence production. *Cognitive Psychology*, 18, 355–387.
- Bock, J. K. (1989). Closed-class immanence in sentence production. *Cognition*, 31, 355–387.
- 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., & Gardner, W. (1996). Who is this “we”? Levels of collective identity and self representations. *Journal of Personality and Social Psychology*, 71, 83–93.
- Chartrand, T. L., & Bargh, J. A. (1999). The chameleon effect: The perception–behavior link and social interaction. *Journal of Personality and Social Psychology*, 76, 893–910.
- Chartrand, T. L., & Jefferis, V. (in press). Consequences of automatic goal pursuit and the case of nonconscious mimicry. In J. P. Forgas, K. D. Williams, & W. von Hippel (Eds.), *Responding to the social world: Implicit and explicit processes in social judgments and decisions*. Philadelphia: Psychology Press.
- Chartrand, T. L., Maddux, W. W., & Lakin, J. L. (in press). Beyond the perception–behavior link: The ubiquitous utility and motivational moderators of nonconscious mimicry. In R. Hassin, J. Uleman, & J. A. Bargh. (Eds.), *Unintended thought 2: The new unconscious*. New York: Oxford University Press.
- Cheng, C. M., & Chartrand, T. L. (in press). Self-monitoring without awareness: Using mimicry as a nonconscious affiliation strategy. *Journal of Personality and Social Psychology*.
- Choi, I., & Nisbett, R. E. (2001). Cultural psychology of surprise: Holistic theories and recognition of contradiction. *Journal of Personality and Social Psychology*, 79, 890–905.
- Cousins, S. D. (1989). Culture and self-perception in Japan and the United States. *Journal of Personality and Social Psychology*, 56, 124–131.
- Cross, S. E., & Madson, L. (1997). Models of the self: Self-construals and gender. *Psychological Bulletin*, 122, 5–37.
- Dijksterhuis, A., & van Knippenberg, A. (2000). Behavioral indecision: Effects of self-focus on automatic behavior. *Social Cognition*, 18, 55–74.
- Endo, Y., Heine, S. J., & Lehman, D. R. (2000). Culture and positive illusions in close relationships: How my relationships are better than your relationships. *Personality and Social Psychology Bulletin*, 26, 1571–1586.
- Fiske, A. P., Kitayama, S., Markus, H. R., & Nisbett, R. E. (1998). The cultural matrix of social psychology. In D. Gilbert, S. Fiske, & G. Lindsay (Eds.), *The handbook of social psychology* (Vol. 2, 4th ed., pp. 915–981). New York: McGraw-Hill.
- Gardner, W. L., Gabriel, S., & Lee, A. Y. (1999). “I” value freedom, but “we” value relationships: Self-construal priming mirrors cultural differences in judgment. *Psychological Science*, 10, 321–326.
- Giles, H., & Powesland, P. F. (1975). *Speech style and social evaluation*. London: Academic Press.
- Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion*. Cambridge, England: Cambridge University Press.
- Heine, S. J., & Lehman, D. R. (1995). Cultural variation in unrealistic

- optimism: Does the West feel more vulnerable than the East? *Journal of Personality and Social Psychology*, 68, 595–607.
- Heine, S. J., & Lehman, D. R. (1997). Culture, dissonance, and self-affirmation. *Personality and Social Psychology Bulletin*, 23, 389–400.
- Holland, R. W., Verplanken, B., van Knippenberg, A., & Dijksterhuis, A. (2002). *Me, myself and I: On the cognitive link between attitudes and the self*. Manuscript submitted for publication.
- Hong, Y., Morris, M. W., Chiu, C., & Benet-Martinez, V. (2000). Multi-cultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist*, 55, 709–720.
- Hsee, C. K., Hatfield, E., Carlson, J. G., & Chemtob, C. (1990). The effect of power on susceptibility to emotional contagion. *Cognition and Emotion*, 4, 327–340.
- Ip, G. W. M., & Bond, M. H. (1995). Culture, values, and the spontaneous self-concept. *Asian Journal of Psychology*, 1, 29–35.
- Iyengar, S. S., & Lepper, M. R. (1999). Rethinking the role of choice in intrinsic motivation: A cultural perspective. *Journal of Personality and Social Psychology*, 76, 349–366.
- Ji, L., Peng, K., & Nisbett, R. E. (2000). Culture, control, and perception of relationships in the environment. *Journal of Personality and Social Psychology*, 78, 943–955.
- Kim, H., & Markus, H. R. (1999). Deviance or uniqueness, harmony or conformity? A cultural analysis. *Journal of Personality and Social Psychology*, 77, 785–800.
- Kühnen, U., & Hannover, B. (2000). Assimilation and contrast in social comparisons as a consequence of self-construal activation. *European Journal of Social Psychology*, 30, 799–811.
- Kühnen, U., Hannover, B., & Schubert, B. (2001). The semantic-procedural-interface model of the self: The role of self-knowledge for context-dependent versus context-independent modes of thinking. *Journal of Personality and Social Psychology*, 80, 397–409.
- Kühnen, U., & Oyserman, D. (2002). Thinking about the self influences thinking in general: Cognitive consequences of salient self-concept. *Journal of Experimental Social Psychology*, 38, 492–499.
- Kwan, V. S. Y., Bond, M. H., & Singelis, T. M. (1997). Pancultural explanations for life satisfaction: Adding relationship harmony to self-esteem. *Journal of Personality and Social Psychology*, 73, 1038–1051.
- Lakin, J., & Chartrand, T. L. (in press). Increasing nonconscious mimicry to achieve rapport. *Psychological Science*.
- Levelt, W. J. M., & Kelter, S. (1982). Surface form and memory in question answering. *Cognitive Psychology*, 14, 78–106.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224–253.
- Markus, H. R., Mullally, P. R., & Kitayama, S. (1997). Self-ways: Diversity in modes of cultural participation. In U. Neisser & D. Jopling (Eds.), *The conceptual self in context* (pp. 13–61). New York: Cambridge University Press.
- Masuda, T., & Nisbett, R. E. (2001). Attending holistically versus analytically: Comparing the context sensitivity of Japanese and Americans. *Journal of Personality and Social Psychology*, 81, 922–934.
- Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social Psychology*, 67, 949–971.
- Neumann, R., & Strack, F. (2000). “Mood contagion”: The automatic transfer of mood between persons. *Journal of Personality and Social Psychology*, 79, 211–223.
- Nisbett, R. E., Peng, K., Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108, 291–310.
- Schwartz, S. H. (1992). Universals in the content and structure of values: Theoretical advances and empirical tests in 20 countries. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 25, pp. 1–62). Orlando, FL: Academic Press.
- Stapel, D., & Koomen, W. (2001). I, we, and the effects of others on me: How self-construal level moderates social comparison effects. *Journal of Personality and Social Psychology*, 80, 766–781.
- Triandis, H. C., McCusker, C., & Hui, H. C. (1990). Multimethod probes of individualism and collectivism. *Journal of Personality and Social Psychology*, 59, 1006–1020.
- van Baaren, R. B., Holland, R. W., Kawakami, K., & van Knippenberg, A. (in press). Mimicry and pro-social behavior. *Psychological Science*.
- van Baaren, R. B., Holland, R. W., Steenaert, B., & van Knippenberg, A. (in press). Mimicry for money: Behavioral consequences of imitation. *Journal of Experimental Social Psychology*.
- Verplanken, B., & Holland, R. W. (2002). Motivational decision making: Effects of activation and self-centrality of values on choices and behavior. *Journal of Personality and Social Psychology*, 82, 434–447.
- Webb, J. T. (1969). Subject speech rates as a function of interviewer behaviour. *Language and Speech*, 12, 54–67.
- Webb, J. T. (1972). Interview synchrony: An investigation of two speech rate measures in an automated standardized interview. In B. Pope & A. W. Siegman (Eds.), *Studies in dyadic communication* (pp. 115–133). New York: Pergamon Press.
- Witkin, H. A., & Goodenough, D. R. (1977). Field dependence and interpersonal behavior. *Psychological Bulletin*, 84, 661–689.
- Witkin, H. A., Lewis, H. B., Hertzman, M., Machover, K., Meissner, P. B., & Karp, S. A. (1954). *Personality through perception*. New York: Harper.
- Young, R. D., & Frye, M. (1966). Some are laughing; some are not: Why? *Psychological Reports*, 18, 747–752.
- Yuki, M. (in press). Intergroup comparison vs. intragroup cooperation: A cross-cultural examination of social identity theory in North American and East Asian contexts. *Social Psychology Quarterly*.

Received May 16, 2002

Revision received August 28, 2002

Accepted September 5, 2002 ■