

Negative Self-Synchronization: Will I Change to Be Like You When It Is Bad for Me?

Shira Gabriel

University at Buffalo, the State University of New York

Kerry Kawakami

York University

Christopher Bartak

University of Oklahoma

So-Jin Kang and Nikki Mann

York University

The current research examined whether people will attempt to modify internal aspects of the self to make them congruent with others, even when those modifications have negative implications for the self, a phenomenon we refer to as negative self-synchronization. We proposed that negative self-synchronization will occur only for individuals who are securely attached. Across 4 experiments, participants who were high in secure attachment were more likely than those low in attachment security to engage in negative self-synchronization (Experiments 1–4). Attachment style did not moderate positive self-synchronization (Experiments 1 and 2). In addition, priming secure attachment increased negative self-synchronization among insecure participants (Experiments 2 and 3). Conversely, priming insecure attachment decreased negative self-synchronization among secure participants (Experiment 4). Implications of these findings for social synchronization processes, the need to belong, and attachment security are discussed.

Keywords: self–other overlap, risk regulation, automatic social behavior, need to belong, attachment

Life is full of interactions with new people: a stranger at a party, a new coworker, a new neighbor, a fellow social psychologist at a conference. Recent research has suggested that when interacting with unfamiliar others, people often match their gestures, behaviors, and attitudes to their interaction partner to increase the likelihood of creating positive social bonds (Chartrand & Bargh, 1999; DeMarree, Wheeler, & Petty, 2005; Galinsky, Wang, & Ku, 2008; Wheeler, DeMarree, & Petty, 2005). For example, people match others by moving their feet or rubbing their cheek (Chartrand & Bargh, 1999), changing their vocal rhythms and lengths of speech (Cappella & Panalp, 1981), and modifying the speed of their physical gestures (Bernieri, 1988). People have been shown to adjust their emotions (DeMarree et al., 2005; Snyder, Tanke, & Berscheid, 1977), vocal tones (Neumann & Strack, 2000), and

even the muscles corresponding to specific facial expressions (Dimberg, 1982) so that they are congruent with their interaction partners. Recent research related to the ideomotor effect has suggested that people may adjust even complex behaviors such as their speed of responding and their performance on multiple-choice tasks (Bargh, Chen, & Burrows, 1996; Dijksterhuis & van Knippenberg, 1998; Kawakami, Young, & Dovidio, 2002; Wheeler & Petty, 2001) so that they fit others in their social environment. Similarly, people have also been shown to assimilate their attitudes to match others (Kawakami, Dovidio, & Dijksterhuis, 2003; Lun, Sinclair, Whitchurch, & Glenn, 2007; Sinclair, Lowery, Hardin, & Colangelo, 2005; Steele & Ambady, 2006). Whereas much of this research has demonstrated assimilation effects in the direct presence of another person, research has shown that individuals will also match the tone of voice of a speaker even when they are not in the same room (Neumann & Strack, 2000), the facial expressions of people on TV (Hsee, Hatfield, Carlson, & Chemtob, 1990), and their speed of responding after being subliminally primed with the elderly (Kawakami et al., 2002).

These various effects are known by different names (e.g., mimicry, social tuning, ideomotor effect, automatic behavior) and have different characteristics (e.g., the type of the shift, when the shift occurs), but what they have in common are changes to increase similarity with a social target. For simplicity, we refer to all of these effects as social synchronization. The majority of the previous research on social synchronization

Shira Gabriel, Department of Psychology, University at Buffalo, the State University of New York; Kerry Kawakami, So-Jin Kang, and Nikki Mann, Department of Psychology, York University, Toronto, Ontario, Canada; Christopher Bartak, Department of Psychology, University of Oklahoma.

We thank Sandra Murray for her helpful comments on earlier drafts of the manuscript. Some of the research reported in this article was supported by a Social Science and Humanities Council of Canada grant to Kerry Kawakami.

Correspondence concerning this article should be addressed to Shira Gabriel, Department of Psychology, Park Hall, University at Buffalo, Buffalo, NY 14260. E-mail: sgabriel@buffalo.edu

has investigated shifts in overt responses to appear similar to others, such as modifications in gestures, behaviors, and attitudes (for a review, see Chartrand, Maddux, & Lakin, 2005). The current research concentrated on internal aspects of the self and, to our knowledge, is the first study to tactically examine shifting the internal self to match an interaction partner by examining the processes across three unique internal aspects of the self. Specifically, we hypothesized that people would attempt to alter self-esteem, mood, and category associations with the self to match interaction partners.

The present research also extends past findings by focusing on negative synchronization and how it might differ from processes related to positive synchronization. Although studies in the past have examined synchronizing to both positive and negative targets (for reviews, see Dijksterhuis & Bargh, 2001; Wheeler & Petty, 2001), researchers have yet to investigate, either theoretically or empirically, the unique nature of negative synchronization. Specifically, although changing the self to match a negative partner can be beneficial as a tool for increasing social connections, it has paradoxical negative implications for the self. For example, synchronizing the self to someone with low self-esteem might increase the likelihood of a positive social encounter but might also lead to a decrease in self-esteem.

Negative self-synchronization situations are thus mixed-motive situations in which the motive of seeking connection with an interaction partner is in conflict with the motive of protecting the self from harm (Murray & Holmes, 2009; Murray, Holmes, & Collins, 2006). The two motives have opposite implications for behavior; social motivations encourage negative self-synchronization because it will increase the likelihood of a positive social encounter, whereas self-protective motivations discourage negative self-synchronization because of the harm to the self. In such a situation, the stronger of the two motivations will predominate and automatically guide behavior (Aarts & Dijksterhuis, 2000). Therefore, social connection motivations will predominate when the likelihood of a rewarding social encounter is strong enough to outweigh the negative effects to the self (Murray & Holmes, 2009). For example, if Betsy is confident that she is likely to have a positive social interaction with her new partner, then the goal of seeking connection will predominate, and negative self-synchronization will follow. On the other hand, if the likely benefit of a social connection is not strong enough to outweigh harm to the self, then negative self-synchronization will not occur, and participants will instead avoid social connection (Murray, Bellavia, Rose, & Griffin, 2003). For example, if Betsy thinks it is unlikely that a positive social interaction will occur with her new partner, then the goal of protecting the self will be dominant, and the social distancing behaviors that are consistent with that goal will be automatically activated (Murray et al., 2003; Murray & Holmes, 2009).

The key question guiding the present research was, Who will engage in negative self-synchronization and who will not? Although many of the reported synchronization effects appear to be widespread and are often considered to be the default process (van Baaren, Maddux, Chartrand, De Bouter, & van Knippenberg, 2003), we propose that the inherent threat to the self involved in negative self-synchronizing will mean that it will not always occur. We hypothesize that the negative self-synchronization behaviors will be determined by attachment security.

Attachment Security

According to attachment theory, early in life, people develop attachment systems that guide their interpersonal strategies (e.g., Baldwin, 1992; Bartholomew & Horowitz, 1991; Collins & Read, 1994). Early interactions with loving significant others lead to a sense of attachment security that includes the belief that seeking connections to others is an effective affect-regulation device (Bowlby, 1973). Conversely, early interactions with caregivers who are unavailable or unresponsive elicit significant insecurities about others' responses, one's own value, and the effectiveness of proximity-seeking strategies (Bowlby, 1973).

Importantly, it is thought that the attachment system generally lies dormant but becomes activated when possible threatening interpersonal situations are detected (Mikulincer & Shaver, 2007). Thus, we hypothesize that the inherent threat involved in negative self-synchronization interactions should activate the attachment system, whereas positive self-synchronization should not. High attachment security predicts confidence in social skills and positive expectations about future relationships (Collins, Cooper, Albino, & Allard, 2002). These positive expectations extend beyond romantic relationships to nonintimate relationships (Feeney & Ryan, 1994; Larose, Bernier, Soucy, & Duchesne, 1999). Secure individuals view others as trustworthy, reliable, and well intentioned (Tidwell, Reis, & Shaver, 1996). Attachment security also predicts less preoccupation with self-worth issues and self-focused needs (Mikulincer, 1998). In summary, attachment security is related to confidence that social interactions will be rewarding and to less concern about self-worth. Thus, in a mixed-motive negative self-synchronization situation, individuals high in attachment security should see the potential of a positive social encounter as strong enough to outweigh the negative self outcomes. Therefore, we hypothesize that secure attachment will predict engaging in negative self-synchronization.

Individuals who are low in attachment security doubt that others can be trusted and thus believe that they are less likely to be accepted by others and more likely to be rejected (Mikulincer & Shaver, 2003, 2007). In contrast to secure individuals, these people are more likely to exhibit defensive self-protection. In summary, attachment insecurity is related to doubt that social interactions will be rewarding. Thus, in a mixed-motive negative self-synchronization situation, individuals low in attachment security should see the potential of a positive social encounter as low and thus not strong enough to outweigh the negative self outcomes. Therefore, we hypothesize that attachment insecurity will predict avoiding negative self-synchronization. If the desire to avoid social interactions is strong enough, those low in attachment security may engage in behavior that is in direct opposition to synchronization and take on the converse of the attributes that their potential interaction partners display (Sinclair, Huntsinger, Skorinko, & Hardin, 2005; Sinclair, Lowery, et al., 2005) as a means of avoiding social connection (Murray et al., 2003). For example, when expecting to interact with a low self-esteem individual, people low in attachment security may attempt to raise, not lower, their self-esteem. By displaying antisynchronization behaviors, insecurely attached individuals can decrease the likelihood of social interactions and thus protect themselves from any harmful effects of social connection (Dabbs, 1969).

Overview of the Present Research

Four experiments investigated self-synchronization in three domains: self-esteem, self-outgroup associations, and mood. Across all four experiments, it was predicted that attachment security would determine whether or not people would synchronize the self to negative targets. These specific domains were chosen because they are all internal to the self and assimilating to a target with negative characteristics in each of these areas has negative implications for the self. Specifically, people are motivated to feel good, not bad, about themselves (see Baumeister, 1998, for a review); people are motivated to associate with positive, not negative, social categories (Tajfel & Turner, 1979); and people are motivated to approach good, not bad, moods (e.g., Isen, 1984; Wegener & Petty, 1994).

In Experiment 1, participants were led to believe that they would be interacting with a partner with either high or low self-esteem. We examined whether participants who were dispositionally high and low in attachment security would attempt to alter their own self-esteem by electing to read negative or positive information about themselves. Experiment 2 replicated Experiment 1 and also examined whether priming secure attachment would alter whether participants would engage in self-synchronization to both positive and negative targets. The main goal of Experiment 3 was to conceptually replicate the findings of Experiment 2 in a different domain: associating the self to a negatively evaluated social category. In addition, Experiment 3 directly measured self-concept change through an implicit association test (IAT) related to identity (Greenwald & Farnham, 2000). Finally, Experiment 4 examined the effects of attachment style and primed attachment insecurity on participants' attempts to synchronize their mood to match the negative mood of an interaction partner.

Experiment 1

The first experiment examined our basic hypothesis that secure attachment style will predict negative self-synchronization. Participants were led to believe that they would be interacting with either a low or a high self-esteem individual and then were given an opportunity to alter their own self-esteem by learning about an aspect of their personality that they either valued or devalued. Because research has found a robust tendency for people to seek out positive self-views (Baumeister, 1998; Greenwald, 1980; Taylor & Brown, 1988), strategically altering self-evaluations to match a low self-esteem interaction partner is considered negative synchronization. We predicted that attachment security would predict negative self-synchronization but not positive self-synchronization. Specifically, high secure attachment would predict engaging in negative self-synchronization (shifting to the low self-esteem partner). Conversely, participants low in secure attachment may shift the self away from the negative target to discourage social connections (Dabbs, 1969; Sinclair, Huntsinger, et al., 2005; Sinclair, Lowery, et al., 2005).

Method

Participants. One hundred and seventy-five students (50% female) from the University at Buffalo (Buffalo, NY) were recruited to participate in this experiment. Sixty percent were Cau-

casian, 26% were Asian, and the remainder were African American, Hispanic, or unidentified. Participants received research credit applicable to an introductory psychology course requirement. Four participants did not follow directions, and their data were not included in the analyses.

Materials and procedure.

Personality questionnaires. Participants reported in groups of four to a study advertised as examining personality and dyadic interaction. Upon arrival, participants were seated at computers in individual cubicles where they completed several questionnaires that together ostensibly measured personality. Most of the measures in this battery were not critical to the experimental hypotheses and were included as filler items. Among the relevant questionnaires were the Rosenberg (1965) Self-Esteem Scale and Bartholomew and Horowitz's (1991) four-item Attachment Scale. This latter survey asked participants to indicate on a scale from 1 (*not at all*) to 9 (*extremely*) the extent to which each of four attachment styles (secure, dismissive, preoccupied, and fearful) described their general relationship style. A modified version of the Self-Attributes Questionnaire (Swann, Pelham, & Krull, 1989) was also included that asked participants to indicate on which of five different domains (athletic ability, intelligence, physical attractiveness, sense of humor, and creativity) they were strongest and weakest.

Partner esteem manipulation. After completing the questionnaires, the computer informed participants that they would later interact with another participant. They were led to believe that the goal of this study was to ascertain the influence of prior knowledge about an individual on subsequent interactions with that individual. Bogus computer feedback informed them that they and a future partner would be in one of three possible conditions. In the first condition, pairs of participants would both learn about one another prior to the interaction. In the second condition, only one person in the pair would learn about the other prior to the interaction. Finally, in the third condition, neither person would learn about the other prior to the interaction. All participants were told that they had been randomly assigned to the second condition and that they would learn about their partner but their partner would not learn about them.

Participants were then allowed to examine four graphs that they were led to believe represented how their upcoming partner scored on personality measures as compared to the average score. Each graph contained one bar ostensibly representing the mean of other students at the University at Buffalo and one bar representing the ostensible partner's score. Three of the measures were irrelevant to the manipulation, and the computer displayed graphs with the two bars highly similar in size, indicating that the participant's score was very similar to the mean. The fourth measure, appearing third in the sequence, suggested that the partner had high or low self-esteem, with the ostensible partner's bar either approximately one-third higher or one-third lower, respectively, than bar representing the mean.

After examining their partner's personality profile, participants were told that they had the opportunity to examine some of their own personality assessments (Swann et al., 1989). Participants were informed that due to time constraints, they could view only a portion of their personality assessment and, as such, it was necessary for the participant to rank the self-attributes in the order of interest. The five domains supplied were the ones from which

the participants had previously picked their best and worst attributes. Thus, we were able to calculate how interested participants were in reading about an attribute at which they excelled versus one at which they did not excel.

At the conclusion of the experimental session, all participants were asked whether any information provided about their partner had influenced their choice of self-domain. None of the participants reported that their interest in the personality domains was influenced by their partner's personality evaluation.

Results and Discussion

Before analyzing the predicted interaction, scores related to secure attachment, self-esteem, and self-synchronization were computed. Specifically, secure attachment was assessed as a continuous variable by the degree to which participants felt on a 1–9 scale that the description of secure attachment accurately described them (Bartholomew & Horowitz, 1991). Self-esteem was assessed by averaging the 10 items in the Rosenberg (1965) Self-Esteem Scale ($\alpha = .91$). Synchronization was assessed by subtracting participants' rankings of their interest in the worst attribute from their ranking of their interest in their best attribute such that larger scores indicated more positive self-evaluations.¹

Our primary hypothesis was that secure attachment would interact with partner's self-esteem to predict self-synchronization to negative partners. We examined this hypothesis using multiple regression analyses recommended by Aiken and West (1991). For all analyses, the predictor variables were (a) secure attachment style, (b) self-esteem of partner (represented as a dichotomous variable [0 = high self-esteem, 1 = low self-esteem]), (c) the interaction of secure attachment and self-esteem of partner, and (d) self-esteem of participant. All continuous predictors were centered at their means (as were all continuous predictors in subsequent analyses). All regression terms were entered into the model and interpreted simultaneously. We included participants' centered self-esteem scores as a predictor to account for a priori preferences individuals high versus low in self-esteem have for negative versus positive information about the self (Swann & Read, 1981).

The analyses revealed the predicted Attachment Security \times Partner Self-Esteem interaction, $\beta = -.35$, $t(166) = -3.53$, $p = .001$, $sr^2 = .07$ (see Figure 1).² As predicted, simple effects analyses related to positive self-synchronization (i.e., when the interaction partner had high self-esteem) indicated that attachment security did not predict information seeking, $\beta = .181$, $t(166) = 1.78$, $p = .08$, $sr^2 = .02$. However, analyses related to negative self-synchronization (i.e., when the interaction partner had low self-esteem) showed that secure attachment predicted information-seeking processes. In particular, participants with high rather than low levels of attachment security matched their self-esteem to targets with low self-esteem by seeking out less positive information about the self, $\beta = -.36$, $t(166) = -2.87$, $p = .005$, $sr^2 = .05$. Thus, our main hypothesis was confirmed: Secure attachment moderated the tendency to engage in negative, but not positive, self-synchronization.

We also examined the slopes for individuals high (one standard deviation above the mean) and low (one standard deviation below the mean) in attachment security. Those analyses revealed that when securely attached participants were presented with a low rather than a high self-esteem partner, they sought out less positive

information about the self, indicating self-synchronization, $\beta = -.26$, $t(166) = -2.49$, $p = .01$, $sr^2 = .04$. However, when insecurely attached participants were presented with a low rather than a high self-esteem partner, they sought out more positive information about the self, indicating antisynchronization $\beta = .27$, $t(166) = 2.54$, $p = .01$, $sr^2 = .04$.

In summary, Experiment 1 found that the extent to which participants attempted to match their self-evaluations to their interaction partner was moderated by secure attachment and partner valence. When expecting to interact with a partner who had high self-esteem, attachment style was not significantly related to information sought about the self. However, when expecting to interact with a partner associated with negative attributes, self-synchronization diverged according to individual differences in secure attachment. Specifically, participants who were dispositionally high in attachment security were more likely to seek out negative information about themselves to strategically alter their self-esteem to match a negative interaction partner as compared to

¹ Analyses conducted on interest in the best and worst traits separately yielded highly similar results and patterns of predicted means. The overall means for interest in the best and worst attribute were 3.46 and 2.43, respectively, on 1–5 scales. Overall, participants were more interested in learning about their best attribute as compared to their worst, $t(170) = 5.834$, $p < .001$.

² Because self-esteem and secure attachment are related and correlated constructs ($r = .44$ in this experiment) and because of the seminal role of self-esteem in Murray and colleagues' work (e.g., Murray, Holmes, & Griffin, 2000), we wanted to ensure that self-esteem was not responsible for the effects. To examine that possibility, the regression was repeated adding the Self-Esteem \times Interaction Partner's Self-Esteem interaction. That interaction was not significant ($p = .43$), and the interaction of interest remained significant. Thus, the effects were not driven by the interaction of self-esteem and condition. In addition, to examine whether similar effects would be found with the other attachment styles, attachment avoidance, or attachment anxiety or if the effects were unique to secure attachment, further analyses were carried out. Attachment avoidance was assessed by subtracting ratings of the degree to which the secure and preoccupied styles described participants from ratings of the degree to which the fearful and dismissing styles described them (Griffin & Bartholomew, 1994). Attachment anxiety was assessed by subtracting ratings of the degree to which the secure and dismissing styles described participants from ratings of the degree to which the fearful and preoccupied styles described them (Griffin & Bartholomew, 1994). We then reran the primary regression five times, substituting each attachment style, avoidance, and anxiety and their interactions with condition for attachment security and its interaction with condition. Only one regression, attachment avoidance, yielded a significant interaction, $\beta = .30$, $t(166) = -3.05$, $p = .003$ (all other $ps > .17$). Because attachment avoidance is calculated in part based on secure attachment ratings, we reran the regression including both attachment security and attachment avoidance and their interactions with condition. In that regression, the interaction of attachment security and condition remained significant, but the interaction of avoidant attachment and condition did not ($p = .16$). Thus, the effects were unique to secure attachment. Similar analyses were done examining the roles of self-esteem and other types of attachment for the other three experiments. In no case did self-esteem significantly reduce the main findings. Thus, we can be confident that secure attachment, and not self-esteem, is responsible for the effects reported in this article. In addition, no other reliable effects were found for the three other attachment styles, attachment anxiety, or avoidance.

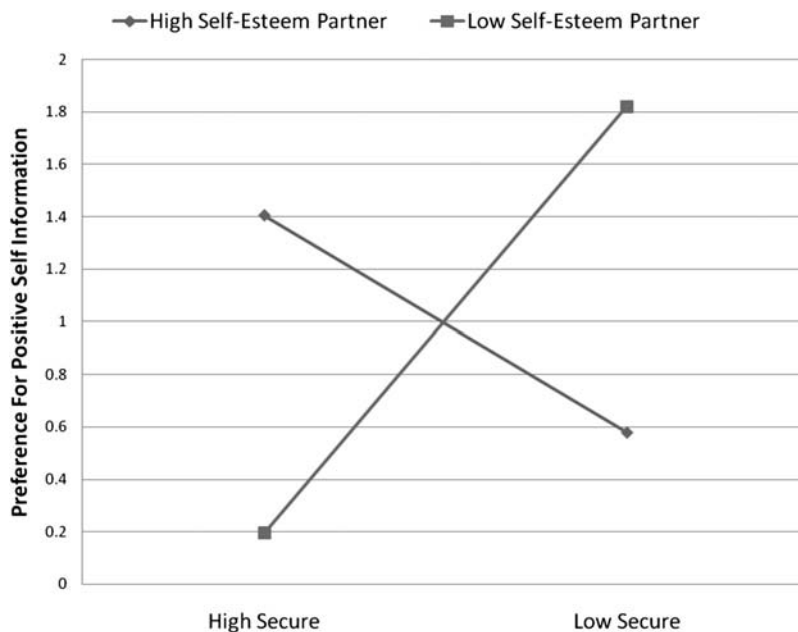


Figure 1. Preference for positive information about the self as a function of secure attachment and partner self-esteem.

participants who were low in attachment security. We propose that when participants high in secure attachment are given the opportunity to connect with others, they modify themselves to match their interaction partner, even when there are potential risks to the self. Conversely, individuals low in secure attachment are more likely to defensively self-protect. Whereas this latter group may shift the self to match positive interaction partners, the current findings suggest that they are less likely to modify the self to match interaction partners with negative characteristics and may even shift away from those partners to avoid social connections and to protect the self.

To further examine the role of attachment in negative self-synchronization, a second experiment was conducted to replicate the findings in Experiment 1 and to extend these initial findings by including a secure attachment prime. Recent research has demonstrated that although there are dispositional differences in attachment security, attachment style can also change dramatically depending on context and recent experiences (Baldwin, Keelan, Fehr, Enns, & Koh-Rangarajoo, 1996; Mikulincer & Shaver, 2003, 2007). Past research has demonstrated that priming words that reflect a secure base (e.g., *caring, support*) influences participants' subsequent attachment behaviors (Pierce & Lydon, 1998). In accordance with this work, we primed half of the participants in Experiment 2 with words related to attachment security and half with positive control words. We predicted that participants primed with attachment security would be more likely to engage in negative self-synchronization.

Experiment 2

Experiment 2 examined the effects of priming concepts related to secure attachment on negative self-synchronization. It was predicted that under control conditions (as in Experiment 1), attach-

ment style would moderate the tendency to engage in negative self-synchronization. However, when a secure base was primed, it was expected that participants with dispositionally insecure attachment would behave more like those with dispositionally secure attachment and engage in negative self-synchronization. In summary, we predicted that in the control condition, only participants high in secure attachment would synchronize the self to a partner with low self-esteem but that when primed with secure attachment, all participants would engage in negative self-synchronization.

Method

Participants. Eighty-nine students (56% female) from the University at Buffalo were recruited to participate in this experiment. Sixty-nine percent of participants were Caucasian, 17% were Asian, and the remainder were African American, Hispanic, or unidentified. Participants received research credit applicable to an introductory psychology course requirement.

Materials and procedure. The procedure was similar to Experiment 1 with two notable exceptions. First, while ostensibly waiting for the information about their partner to load onto the computer, participants were asked to complete a word search task (Pierce & Lydon, 1998). Whereas half of the participants completed a search containing words related to attachment security (*accepted, adored, affection, attached, caring, included, supported, wanted, welcomed, liked, loved, and cherished*), the other half completed a search related to positively valenced words that were unrelated to secure attachment (*amuse, chuckle, peace, play, idea, ream, refresh, smile, soft, freedom, happy, and hope*).

Second, whereas participants in Experiment 1 simply selected their best and worst attributes from a list of five domains, participants in Experiment 2 ranked all five domains in descending order of aptitude. This more sensitive measure allowed us to examine

participants' interest in their two best, relative to their two worst, traits.

Results and Discussion

Prior to the main analysis, scores related to secure attachment, self-esteem, and self-synchronization were computed. Secure attachment was assessed as the degree to which participants felt on a 9-point scale that the description of secure attachment accurately described them (Bartholomew & Horowitz, 1991). Self-esteem was assessed by averaging the 10 items on the Rosenberg (1965) Self-Esteem Scale ($\alpha = .82$). Self-synchronization was assessed by subtracting participants' rankings of their interest in their two worst attributes from their rankings of their interest in their two best attributes.

Our primary hypothesis was that secure attachment would interact with security priming to moderate the extent to which participants would synchronize the self with a negative target. We examined this hypothesis using multiple regression analyses recommended by Aiken and West (1991). For all analyses, the predictor variables were (a) secure attachment style, (b) self-esteem of partner (represented as a dichotomous variable [0 = high self-esteem, 1 = low self-esteem]), (c) secure prime condition (0 = control, 1 = secure base), (d) the interaction of secure attachment and self-esteem of partner, (e) the interaction of secure attachment and secure prime, (f) the interaction of secure prime and self-esteem of partner, (g) the three-way interaction, and (h) self-esteem of participant.

Our analyses revealed the predicted three-way interaction, $\beta = .80$, $t(80) = 3.14$, $p = .002$, $sr^2 = .09$ (see Figure 2). To decom-

pose this interaction, we examined responses in the control prime and secure attachment prime conditions separately. The results in the control condition replicated the findings of Experiment 1. Specifically, there was a significant two-way interaction for attachment style and self-esteem of partner in the control condition, $\beta = -.97$, $t(80) = -3.77$, $p < .001$, $sr^2 = .14$. Further analyses indicated that when the interaction partner had high self-esteem, attachment security did not predict information seeking, $\beta = .01$, $t(80) = .07$, $p = .95$. However, when the interaction partner had low self-esteem, participants high in attachment security sought out less positive information about the self relative to participants low in attachment security, $\beta = -.86$, $t(80) = -2.23$, $p = .03$, $sr^2 = .05$. Thus, as predicted, the control condition mirrored the findings of Experiment 1; secure attachment predicted negative, but not positive, self-synchronization.

In accordance with Experiment 1, we also examined within the control condition the slopes for participants high versus low in secure attachment. These analyses replicated the earlier results by demonstrating that when securely attached participants were presented with a low rather than a high self-esteem partner, they sought out less positive information about the self, once again demonstrating negative self-synchronization, $\beta = .39$, $t(80) = 2.03$, $p = .04$, $sr^2 = .04$. Conversely, when insecurely attached participants were presented with a low rather than a high self-esteem partner, they sought out more positive information about the self relative to participants, demonstrating antisynchronization, $\beta = -.73$, $t(80) = -3.40$, $p = .001$, $sr^2 = .11$.

In the secure prime condition, we predicted that all participants would engage in negative self-synchronization. As predicted, the

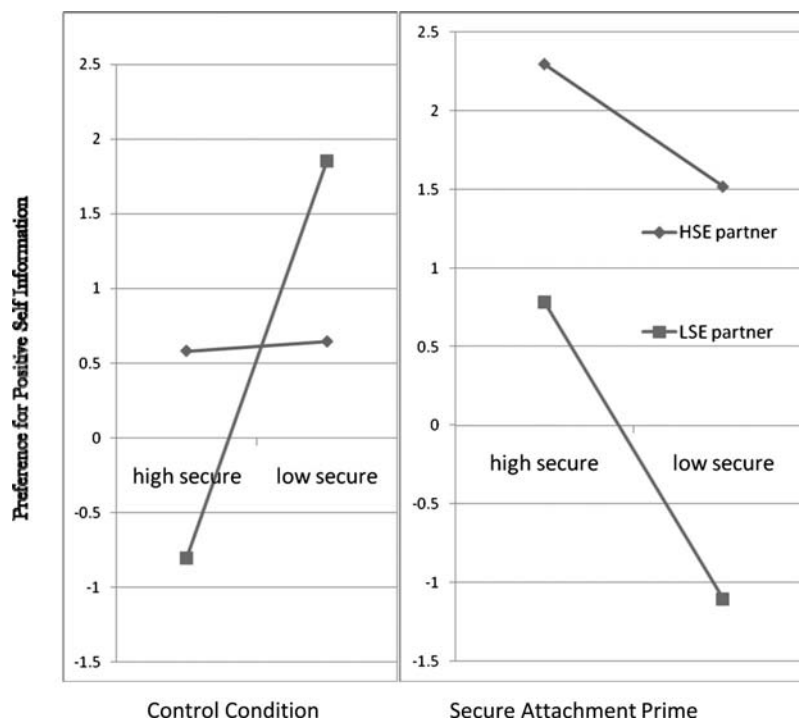


Figure 2. Preference for positive information about the self as a function of secure attachment and partner self-esteem and secure attachment prime. HSE = high self-esteem; LSE = low self-esteem.

two-way interaction between attachment style and self-esteem of partner was not significant ($p = .96$). Instead, there was a main effect for partner self-esteem, $\beta = -.32$, $t(80) = -2.13$, $p = .04$, $s^2 = .04$. When primed with acceptance, regardless of level of attachment, participants sought out less positive information about the self when the interaction partner had low rather than high self-esteem. Thus, as expected, priming acceptance led participants low in secure attachment to respond similarly to participants high in secure attachment. Specifically, both groups sought out information that would help them match their self-esteem to partners regardless of whether this had positive or negative implications for the self.

Our main prediction for Experiment 2 was that priming a secure base among participants who were low in attachment security would allow them to engage in negative self-synchronization. Our findings supported these expectations. In the control condition, participants low in secure attachment did not attempt to match the self-esteem of interaction partners with negative characteristics; however, when primed with concepts related to secure attachment, these participants showed significant negative self-synchronization by seeking out more negative information about the self when anticipating an interaction with a low rather than high self-esteem partner. As expected, participants who were relatively higher in attachment security synchronized their self-esteem to partners with both negative and positive characteristics in both the control and acceptance conditions. Specifically, these participants always sought out less positive information about the self when expecting an interaction with a low rather than high self-esteem partner.

In summary, Experiment 2 replicated the results of Experiment 1 and extended the earlier findings by showing that temporarily activating secure attachment through priming can also lead to negative self-synchronization. Specifically, Experiment 2 demonstrated that after priming secure attachment, participants both high and low in secure attachment sought negative information about the self when anticipating an interaction with a low self-esteem individual. These results indicate that even people low in attachment security can engage in negative self-synchronization under specific circumstances—when concepts related to acceptance are activated.

Experiment 3

Whereas Experiments 1 and 2 examined the impact of secure attachment on synchronizing the self to match the self-esteem of particular individuals, Experiment 3 extended these findings by examining whether attachment style also influences matching the self to social categories. Recent research has provided new evidence that synchronization effects can occur not only with individuals but also with social categories (Bargh et al., 1996; Dijksterhuis & Bargh, 2001). In particular, these studies have demonstrated that people modify their behaviors, attitudes, and self-concept to match social categories (DeMarree et al., 2005; Galinsky et al., 2008; Kawakami et al., 2002, 2003; Sinclair, Huntsinger, et al., 2005). For example, Kawakami et al. (2009) showed that when primed with Blacks in comparison to Whites, participants are faster to associate the category Black with the self. These effects occur because activating a social group leads to an unconscious preparation for an interaction with a member of that group (Cesario, Plaks, & Higgins (2006).

In accordance with Experiments 1 and 2, we examined whether attachment style would affect implicit identification with a negative target—in this study, however, the target was a social outgroup rather than an individual. Because the main focus of our research is on assimilating to negative targets and because Experiments 1 and 2 found that secure attachment moderated self-synchronization effects only when related to negative self-evaluations, Experiments 3 and 4 exclusively investigated social targets with negative characteristics. Specifically, based on a pilot study that indicated that Whites demonstrate strong implicit negative attitudes toward East Asians,³ Experiment 3 examined whether participants high and low in secure attachment would synchronize the self to match East Asians under control and acceptance conditions.

Whereas Experiments 1 and 2 examined the impact of secure attachment and target valence on information sought about the self, Experiment 3 investigated actual changes in associations with the self. To avoid self-presentation biases, Experiment 3 measured implicit self-change with an identity IAT (Greenwald & Farnham, 2000). In accordance with previous research related to assimilating to social categories (Dijksterhuis & Bargh, 2001; Kawakami et al., 2009), instead of anticipating a future interaction, target social categories were activated through priming. Previous research has found that priming a relevant outgroup activates the motivational system to prepare for an interaction with a member of that group (Cesario et al., 2006). Thus, by priming the social group *Asian*, we hypothesized that participants would behave in a similar manner to Experiments 1 and 2, when they were explicitly anticipating a

³ To establish that participants associate the social category East Asians with a negative evaluation, we ran an initial pilot study. Although we used a separate group of non-East Asian participants ($n = 30$), the ethnic makeup of this sample resembled the participants used in the main study. While five students did not report their ethnicity, of the remaining participants, 52% were Caucasian, 28% were South Asian (e.g., Pakistani, Indian, Sri Lankan, Bangladeshi), 4% were Black, 4% were Hispanic, and 12% were of another ethnicity. Participants in this pilot study were presented with an IAT related to East Asians (Greenwald, McGhee, & Schwartz, 1998) in which they were required to categorize two sets of stimuli: (a) pleasant and unpleasant words and (b) East Asian and White faces. Stimuli for the identity IAT consisted of black-and-white photographs of six East Asian (three male, three female) and six White (three male, three female) faces, as well as six pleasant words (*love, cheer, rainbow, peace, caress, and happy*) and six unpleasant words (*evil, pain, grief, vomit, hate, and filth*). Participants completed two critical blocks, each consisting of 48 trials. In one critical block, pleasant words and East Asian faces shared one response key, while unpleasant words and White faces shared the other response key. In the other critical block, unpleasant words and East Asian faces shared one response key, and pleasant words and White faces shared the other response key. Participants were instructed to make their responses as quickly and as accurately as possible. IAT scores were computed by subtracting the mean response latencies for trials that paired pleasant words with East Asians and unpleasant words with Whites from the trials that paired pleasant words with Whites and unpleasant words with East Asians. Larger IAT scores therefore reflect a faster association between unpleasant words and East Asians. To examine implicit associations with East Asians, a one-sample t test was conducted with the test value set at zero. This t test revealed strong implicit biases against East Asians. Specifically, participants were faster to associate East Asians relative to Whites with unpleasant than pleasant words, $t(29) = 3.56$, $p = .001$.

social interaction. Finally, we sought to extend the findings of Experiments 1 and 2 by using a categorical, rather than continuous, measure of attachment style (Bartholomew & Horowitz, 1991) and to thereby demonstrate that the findings were not contingent upon a specific method of classifying attachment security.

In accordance with previous findings, we predicted that in the control condition, participants high but not low in secure attachment would self-synchronize to a negative category. Specifically, we expected that securely attached participants would associate the self more with East Asians than would insecurely attached participants. However, we also expected to replicate the findings in Experiment 2 when secure attachment was activated. In particular, we predicted no difference between securely and insecurely attached participants when concepts related to security were primed. Both of these groups were expected to associate the self with East Asians.

Method

Participants. Eighty-eight undergraduates from York University (Toronto, Ontario, Canada) were recruited to participate in a study examining personality and cognitive processing of words, faces, and objects in exchange for either partial course credit or a movie pass. Because participants were primed with the category East Asians and due to the potential sensitivity of our reaction time measures to language fluency, we preselected non-East Asian participants who scored an average of 7 or higher on 9-point personal ratings of English speaking and reading ability. Eight students who did not complete our measurement of attachment style due to experimenter error were not included in the analyses, resulting in 80 participants (65% female). While 60% of the participants were Caucasian, 16% were South Asian from diverse ethnic backgrounds (e.g., Pakistani, Indian, Sri Lankan, Bangladeshi), 9% were Black, 1% were Hispanic, and 14% were of another ethnicity.

Materials and procedure.

Attachment scale. One week prior to the main session, participants completed pretest questionnaires, including Bartholomew and Horowitz's (1991) measure of adult attachment style. Participants read brief descriptions of each of the four different attachment styles and then selected the one that best described their overall approach to close relationships.

In the main session, participants were seated in individual cubicles and informed that they would complete a series of unrelated tasks on the computer. Specifically, participants were first required to complete a word search puzzle before making timed categorizations of animate and inanimate objects and finally completing timed categorizations of words and faces.

Activating a negative social category. After first completing the same word search task used in Experiment 2, to activate secure attachment or a positive control, all participants were presented with a priming task to activate the negative social category East Asians. Because the main focus of our research is on assimilating to negative targets, this category was selected because the pilot study indicated a strong implicit bias in which participants were faster to associate negative in comparison to positive concepts with this category. The goal of the main study, involving a different group of students, was to examine whether participants would synchronize their self-concept to this negative category once it was

activated. Numerous studies have now demonstrated that people synchronize to primed social categories (Bargh et al., 1996; Dijksterhuis & Bargh, 2001; Kawakami et al., 2009) to prepare for an interaction with a member of the target group (Cesario et al., 2006).

Specifically, participants in this task were shown a series of pictures consisting of faces and furniture on a computer monitor and were instructed to press one of two keys on the keyboard to indicate whether the stimulus was animate or inanimate. Participants were instructed to make their categorizations as quickly and as accurately as possible. To activate the social category East Asians, the stimuli consisted of 20 black-and-white photographs of East Asian faces (10 male, 10 female) and 20 photographs of furniture. All stimuli were presented in random order. The correct answer in response to images of faces was "animate" and to images of furniture was "inanimate." If the response was correct, the next trial was presented immediately. If the response was incorrect (i.e., pressing the *inanimate* key for a face or the *animate* key for furniture), a red X appeared on the screen for 450 ms before the next trial was presented. In total, participants completed 40 trials.

Assessment of negative self-synchronization. To examine whether participants synchronized their self-concept to the negative category East Asians, participants were presented with an identity IAT (Greenwald & Farnham, 2000; Nosek, Banaji, & Greenwald, 2002) after receiving the category prime. This response latency task assessed their implicit identification with East Asians relative to Whites. Stimuli for this task consisted of black-and-white photographs of 10 East Asian faces (five male and five female) and 10 White faces (five male and five female) that were not used in the category priming task, as well as four self-related words (*I, me, mine, and self*) and four other-related words (*other, their, them, and they*). Participants were instructed to categorize the people in the photographs as either Asian or White and the words as either related to the self or others.

Specifically, participants completed two critical blocks, each consisting of 56 trials. In one critical block, participants were instructed to categorize self-related words and East Asian faces using the same response key and to categorize other-related words and White faces using another response key. In another critical block, these pairings were reversed so that other-related words and East Asian faces shared one response key, and self-related words and White faces shared the other response key. Participants were instructed to make their responses as quickly and as accurately as possible. If the response was correct, the next trial was presented immediately. If the response was incorrect, however, a red X appeared on the screen for 450 ms before the next trial was presented.

The underlying rationale for the IAT is that the speed with which participants respond to two stimuli associated with the same key is an indication of implicit associations between the two categories. Although, in general, we assumed that non-Asian participants would be slow to associate Asians with the self and therefore would be slower in responding when these concepts shared a key than when others and Asians shared a key, we expected that after Asian category primes, people would synchronize the self to this negative category (DeMarree et al., 2005; Kawakami et al., 2009) and that individual differences in secure attachment and situationally activated concepts related to secure attachment would moderate these effects.

At the conclusion of the experimental session, all participants completed a funnel debriefing in which they were probed with increasingly specific questions regarding their awareness of the study's hypothesis (Chartrand & Bargh, 1996). None of the participants reported any suspicion of the specific hypotheses.

Results and Discussion

Prior to the main analyses, participants were categorized as either securely or insecurely attached, and IAT scores were created. Specifically, based on Bartholomew and Horowitz's (1991) conceptualization of attachment style as orthogonal combinations of people's positive or negative perceptions of self and others, we characterized participants as securely attached ($N = 39$) if they endorsed the description of secure attachment, whereas those who indicated being either fearful, preoccupied, or dismissive were characterized as insecurely attached ($N = 41$).

To compute IAT scores, all trials in which participants gave incorrect answers (3.1%) were excluded. Outlier latencies that were less than 300 ms and greater than 2,000 ms (3.1%) were recoded to 300 ms and 2,000 ms, respectively (Ratcliff, 1993). IAT scores were then calculated by subtracting the mean response latencies for trials that paired self-related words with East Asians and other-related words with Whites from the trials the paired self-related words with Whites and other-related words with East Asians. Higher IAT scores therefore indicated stronger associations between self and East Asians relative to others and East Asians.

Our primary hypothesis was that individual differences in attachment style would interact with priming secure attachment to moderate associations between the self and Asians. We examined this hypothesis with a 2 (attachment style: secure vs. insecure) \times 2 (secure prime: secure base vs. control) analysis of variance (ANOVA) performed on participants' identity IAT scores. Only the predicted Attachment Style \times Secure Prime interaction was significant, $F(1, 76) = 8.05, p = .006$, partial $\eta^2 = .10$. In accordance with the findings in Experiments 1 and 2, simple effects analyses in the control condition revealed that securely attached participants ($M = 42.00, SD = 112.70$) were faster to associate the self with East Asians than insecurely attached participants ($M = -39.00, SD = 97.31$), $F(1, 76) = 6.28, p = .01$, partial $\eta^2 = .08$ (see Figure 3). Conversely, in accordance with Experiment 2, when secure attachment was primed, no difference was found in the speed of associating the self with East Asians between securely ($M = -23.00, SD = 93.69$) and insecurely ($M = 23.00, SD = 96.10$) attached participants, $F(1, 76) = 2.20, p = .14$, partial $\eta^2 = .03$. Our hypotheses were confirmed—attachment style moderated the tendency to engage in negative self-synchronization in the control condition but not in the secure prime condition.⁴

Additional analyses indicated that insecurely attached participants were more likely to change their self-concept to match the target group when primed with attachment security as compared to a control prime, $F(1, 76) = 3.97, p = .05$, partial $\eta^2 = .05$. Notably, securely attached participants were slower to associate the self with target groups when primed with attachment security as compared to a control prime, suggesting antisynchronization effects of priming secure attachment for already secure participants, $F(1, 76) = 4.08, p = .05$, partial $\eta^2 = .05$. Upon reexamination, this same effect was also evident and significant in Ex-

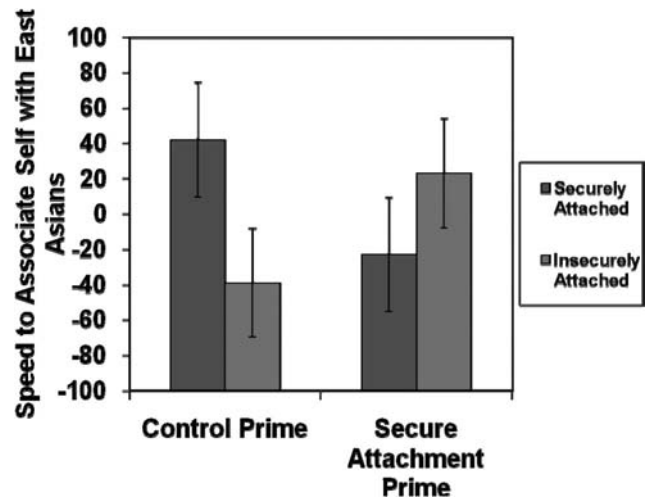


Figure 3. Identification with ingroup versus East Asians as a function of secure attachment and secure attachment prime.

periment 2. Although these effects were unanticipated, we hypothesize that they may have occurred due to a decreased motivation to forge a social connection (Dabbs, 1969). This motivation to connect is likely influenced by target valence: a devalued outgroup. It is possible that participants who already feel highly connected with others, when reminded of their secure connections, avoid connecting with others in an already low motivation situation (DeWall, Baumeister, & Vohs, 2008). We return to this issue in the General Discussion.

In summary, despite changes from individual targets to outgroup categories, changes in ways of classifying secure attachment, and important modifications in the methodology, the findings in Experiment 3 replicated the results of Experiment 2. Under control conditions, securely attached participants were more likely to engage in negative self-synchronization as compared to insecurely attached participants. However, when secure attachment was situationally activated, no differences between securely and insecurely attached participants in negative self-synchronization effects were found. After an initial injection of secure attachment through priming, even participants chronically low in attachment security were able to modify the self so that it better matched others to enhance social connections.

Experiment 4

The findings from Experiments 2 and 3 demonstrated that temporarily activating secure attachment can eliminate differences in negative self-synchronization between individuals high and low in chronic secure attachment. Specifically, we found that priming

⁴To examine whether the ethnicity of participant qualified our main findings, a 2 (attachment style: secure vs. insecure) \times 2 (secure prime: secure base vs. control) \times 2 (participant ethnicity: Caucasian vs. non-Caucasian) ANOVA was performed on participants' identity IAT scores. The three-way interaction was not significant, $F(1, 72) = 1.50, p = .22$, suggesting that ethnicity did not interact with our main self-synchronization effects.

concepts related to secure attachment led people low in secure attachment to shift the self to better match individuals and social categories with negative characteristics. The primary goal in Experiment 4 was to examine the impact of priming concepts related to insecure attachment on negative self-synchronization.

Whereas Experiments 1 and 2 examined self-synchronization of self-esteem and Experiment 3 examined self-other overlap in identification, Experiment 4 investigated whether participants would attempt to shift their mood to better match a future interaction partner. Previous research has found that the degree to which partners adopt one another's mood predicts other positive outcomes in relationships (Anderson, Keltner, & John, 2003). Most of the work on mood matching has looked at mood shifts in actual interactions and has shown that people shift to be similar to interaction partners (Anderson et al., 2003; Bavelas, Black, Chovil, Lemery, & Mullett, 1988; Hatfield, Cacioppo, & Rapson, 1994; Neumann & Strack, 2000). Furthermore, mood matching has been found to be strongest when people are highly motivated to get along with their partners (Anderson et al., 2003; Bono & Ilies, 2006). This is not surprising because people assume that they will get along with others better when the mood of others matches their mood (Huntsinger, Lun, Sinclair, & Clore, 2009).

In Experiment 4, participants were led to believe that they would be interacting with a person in a bad mood. Before the ostensible interaction, to prime attachment insecurity, half of the participants recalled a social rejection experience, and half recalled a nonsocial failure control (Mikulincer & Arad, 1999). Next, all participants were given the opportunity to read either lighthearted newspaper articles (to improve their mood) or depressing newspaper articles (to depress their mood; Erber, Wegner, & Theriault, 1996). In accordance with our earlier findings, it was predicted that individual differences in attachment style would predict negative self-synchronization in the control condition, with participants high in attachment security self-synchronizing more to the bad mood of the target than would insecure participants. However, in the attachment insecurity prime condition, we predicted no differences between secure and insecure attached participants, with both groups demonstrating a low level of self-synchronization to the negative target by choosing to read more positive newspaper articles. In short, by activating insecure attachment, we anticipated that we could situationally impair participants with dispositionally secure attachment styles so that they would behave more like insecurely attached individuals.

Although all of the analyses in the first three experiments strongly support the main hypothesis that attachment style predicts negative self-synchronization, none of these studies included a baseline condition in which no information about the target group was provided. Experiment 4 therefore included a baseline condition to allow a direct comparison of the effects of learning negative information about the partner. This baseline condition was included to be compared to the control (no attachment prime) condition. We predicted that participants high in secure attachment would seek more depressing newspaper articles after learning that their partner was in a bad mood as compared to receiving no information about their partners' mood. Conversely, we predicted that participants low in secure attachment would seek less depressing newspaper articles after learning that their partner was in a bad mood as compared to receiving no information about their partners' mood.

Method

Participants. One hundred and twenty-nine students (49% male) from the University at Buffalo were recruited to participate in this experiment. Fifty-one percent of participants were Caucasian, 35% were Asian, and the rest were African American, Hispanic, or unidentified. Participants received research credit applicable to an introductory psychology course requirement.

Materials and procedure. Participants were informed that they would be participating in a study examining social interaction and personality. They were told that the study would have three parts. In the first part, they would provide information about themselves; in the second part, they would recall and write about a past event; and in the third part, they would interact with another participant.

Personality questionnaires and insecure prime. After receiving the instructions, participants completed a number of questionnaires, many of which were irrelevant to the current experiment. However, within those questionnaires was Bartholomew and Horowitz's (1991) Attachment Scale. After completing all the questionnaires, participants were assigned to either the insecure attachment or negative nonsocial failure control conditions. In the insecure attachment priming condition, participants were asked to recall and write about a time in which they felt rejected by another person. In the negative nonsocial failure control condition, participants were asked to recall and write about a time in which they experienced academic failure. All participants wrote for 5 min.

Partner mood manipulation. Participants were then informed that in preparation for an upcoming interaction with another person, they were required to fill out a questionnaire. This survey included questions related to trivial information about the person (e.g., favorite country to visit, favorite animal) as well as their current mood. They were told that the experimenters were interested in how social interactions are affected by how much information one person has about another. As with Experiments 1 and 2, participants were led to believe that they had been assigned to a condition in which they would learn about their partner but their partner would not learn about them.

Participants then viewed what they believed to be the questionnaire completed by the ostensible partner. The questionnaire contained a number of irrelevant items about their partner such as favorite animal and city and also indicated that the partner currently felt "pretty bad, I actually feel really sad," and rated his or her mood as a -4 on a scale of -5 to 5 . After reading the information about the partner, participants were told that they had a few minutes before the interaction and that there were some newspaper articles available for them to read while they waited. Participants were provided with a list of eight possible articles to read. The articles were adopted from Erber et al. (1996) and were characterized as either relatively lighthearted (e.g., "Woman sues city, county after being hit by toilet," "Speeding women mistook police siren for screaming boyfriend") or very distressing (e.g., "Officials, witnesses say 62 people killed," "9 men, woman rape a pregnant woman"). Participants were told that there would not be time to read all eight articles before the meeting and were instructed to rank order them in terms of their interest in reading the article. After ranking the articles, participants were informed that they would not be interacting with another participant and were fully debriefed.

Assessment of baseline interest in articles. To assess the baseline interest in articles for individuals anticipating a social interaction,

we recruited a separate group of 36 University at Buffalo undergraduates. These students were also Psychology 101 students participating for course credit and were indistinguishable in age and demographic information from the students in the main part of the study. These participants were provided with the same materials and procedures used in the main study; however, no information about the mood of the future interaction partner was included. This allowed us to assess a baseline level of interest in the articles by students high and low in secure attachment who were anticipating an interaction but had no knowledge of the partner's mood. Our plan was to compare the ratings of articles by this baseline group to the ratings by participants who had learned that their partner was in a bad mood (but not primed with attachment security). This comparison would allow us to directly test whether negative self-synchronization and antisynchronization were occurring when participants learned their partners were in a bad mood.

Results and Discussion

Prior to the main analysis, scores related to secure attachment and self-synchronization were computed. Secure attachment was assessed as a continuous variable by the degree to which participants felt on a 9-point scale that the description of secure attachment accurately described them (Bartholomew & Horowitz, 1991). Synchronization was assessed by subtracting participants' rankings of their interest in the four distressing newspaper articles from their rankings of the four lighthearted articles.

To examine our main hypotheses, we ran a multiple regression analysis following the procedure advocated by Aiken and West (1991). The predictor variables were (a) secure attachment, (b) insecure attachment priming (0 = control, 1 = insecure attachment), and (c) the interaction of secure attachment and insecure attachment priming. All continuous predictors were centered at their means (as were all continuous predictors in subsequent analyses). All regression terms were entered into the model and interpreted simultaneously.

Our analyses revealed the predicted two-way interaction, $\beta = .32, t(125) = 2.53, p = .01, sr^2 = .05$ (see Figure 4). In accordance with our previous findings, simple effects analyses demonstrated that in the control condition, participants high rather than low in secure attachment selected more negative articles to match their future interaction action partner with the negative mood, $\beta = -.25, t(125) = -1.99, p = .05, sr^2 = .03$. Replicating the findings from the first three experiments, under normal conditions, secure attachment predicted self-synchronization to negative targets. However, when participants were primed with rejection, attachment security was no longer related to social assimilation ($p = .12$). Further analyses indicated that when attachment security was low, activating concepts related to insecure attachment did not predict information seeking ($p = .92$). However, when attachment security was high, priming insecure attachment led participants to seek out fewer distressing newspaper articles as compared to the control condition; in other words, activating concepts related to insecure attachment reduced negative self-synchronization for secure participants, $\beta = .42, t(125) = 3.49, p = .001, sr^2 = .09$.

We also compared the control nonsocial priming condition to the baseline condition when no partner mood information was provided. This gave us the opportunity to use a different method of assessing our hypothesis that attachment style predicts negative self-synchronization. To test this assumption, we ran a multiple

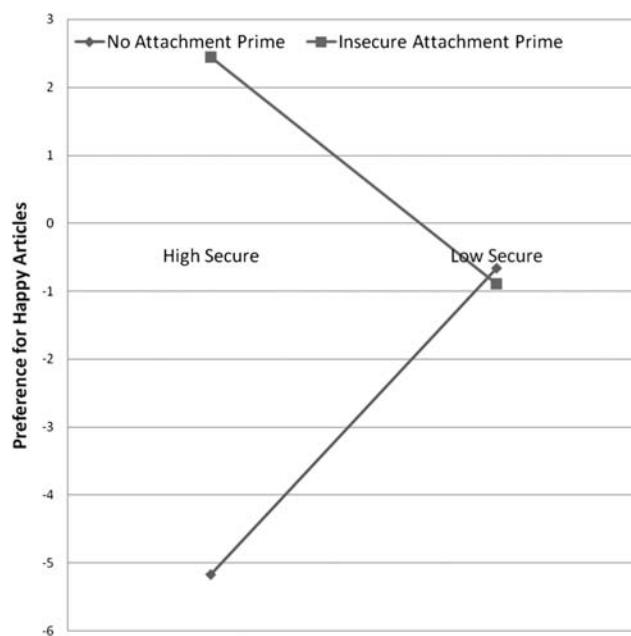


Figure 4. Preference for happy versus depressing newspaper articles as a function of secure attachment and insecure attachment prime.

regression with the following predictor variables: (a) secure attachment, (b) information about the partner (0 = no information, 1 = partner in a bad mood), and (c) the interaction of secure attachment and information about the partner. Our analyses revealed the predicted two-way interaction, $\beta = .60, t(98) = 3.39, p = .001, sr^2 = .10$ (see Figure 5). We expected that in the no-information control condition, individuals high in attachment security would show negative self-synchronization effects, whereas those low in attachment would show antisynchronization. As predicted, simple effects analyses demonstrated that participants high in secure attachment (one standard deviation above the mean) selected more negative articles when presented with an interaction partner in a bad mood than when they did not know about the partner's mood, demonstrating negative self-synchronization, $\beta = -.37, t(98) = -2.84, p = .005, sr^2 = .07$. Conversely, participants low in secure attachment (one standard deviation below the mean) selected fewer negative articles when presented with an interaction partner in a bad mood than when they did not know about the partner's mood, demonstrating antisynchronization, $\beta = .29, t(98) = 2.05, p = .04, sr^2 = .04$.⁵

In summary, Experiment 4 replicated the main finding of the first three experiments—secure attachment moderated the ten-

⁵ Attachment style predicted interest in sad newspaper articles. Specifically, when participants had no information about the interaction partner, secure attachment in comparison to insecure attachment was related to greater interest in happy newspaper articles, $\beta = .43, t(98) = 2.75, p = .007$. This is perhaps not surprising given that anticipating a social interaction is a happy event for secure individuals but a stressful one for insecure individuals (e.g., Collins et al., 2002). Because individuals seek information congruent with their current mood, a priori differences in mood based on secure attachment would lead to differential preferences for mood-congruent information (Blaney, 1986; Bower, 1981).

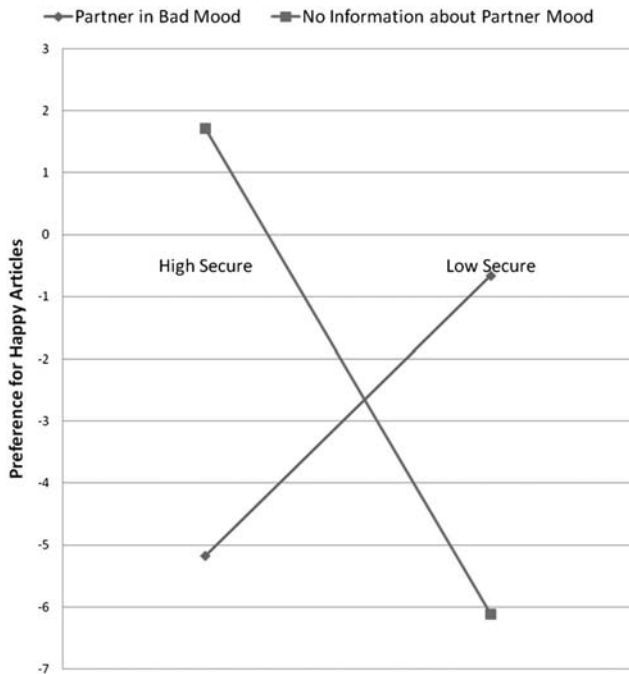


Figure 5. Preference for happy versus depressing newspaper articles as a function of secure attachment and information about partner.

endency to engage in self-synchronization to negative targets. In addition, this experiment extended the findings related to situational determinants of secure attachment. Whereas Experiments 2 and 3 found that temporarily priming secure attachment led dispositionally insecure individuals to act more like secures, Experiment 4 found that temporarily priming insecure attachment led dispositionally secure individuals to act more like insecure. Notably, comparing these participants to participants who received no information about the mood of their future interaction partner provided further evidence that secure attachment predicts negative self-synchronization and insecure attachment predicts antisynchronization.

General Discussion

All four experiments found consistent support for the idea that negative self-synchronization is moderated by attachment style. In particular, knowledge of secure attachment helped us predict who would alter the self in negative ways in anticipation of a social interaction with a negative target. Participants high in secure attachment were more likely than those low in secure attachment to shift the self in potentially harmful ways to match an interaction partner (Experiments 1-4). When the shifts to the self were not harmful, attachment style did not moderate attempts to shift the self (Experiments 1 and 2). In addition, situationally activating attachment concepts (Baldwin et al., 1996; Mikulincer & Shaver, 2003, 2007; Murray, Derrick, Leder, & Holmes, 2008) influenced self-synchronization effects. Specifically, activating secure attachment by priming words related to this concept improved assimilation to negative targets among insecurely attached participants (Experiments 2 and 3). Conversely, activating insecure attachment

by priming words related to this concept reduced assimilation to negative targets among securely attached participants (Experiment 4). Thus, all four experiments support the hypothesis that in mixed-motive social situations, attachment style predicts whether the potential for positive social interaction is strong enough to override harm to the self inherent in negative self-synchronization.

Consistent evidence for antisynchronization effects was also found. Participants low in secure attachment, as well as those primed with insecure attachment, actually became less similar to negative interaction partners in anticipation of a social interaction (Experiments 1, 2, and 4). This antisynchronization is similar to the countertuning effects found in research on social tuning (Sinclair, Huntsinger, et al., 2005; Sinclair, Lowery, et al., 2005). For example, participants in one study on social tuning shifted their attitudes away from those of an interaction partner when that person was rude (Sinclair, Huntsinger, et al., 2005). These effects are thought to be driven by a desire to avoid social interaction. Similarly, romantic partners sometimes engage in relationship-sabotaging behaviors when feeling insecure about their partners' acceptance (Murray et al., 2003). Within the current framework, individuals low in attachment security have been shown to demonstrate overly defensive self-protection in interpersonal situations (Mikulincer & Shaver, 2007). Thus, in a situation in which connection desires do not outweigh risks to the self, they may actively sabotage social connection as a means of avoiding harm.

Two of the experiments also found evidence for antisynchronization effects among secure participants primed with attachment security. We hypothesize that these demonstrations of antisynchronization, although unexpected, were also driven by a desire to avoid connection. Specifically, we hypothesize that reminding participants, who were already secure, about their success in relationships decreased their motivation to form new social bonds due to a satiation of social needs. A decreased motivation to connect to the partner would then lead to antisynchronization as a means of decreasing the likelihood of a social connection (Dabbs, 1969). Thus, participants who feel secure in their connections with others, when reminded of their secure connections, avoid connecting with others, especially in a low-motivation situation (DeWall et al., 2008) such as when the interaction partner has negative attributes.

The current research expands understanding of social synchronization processes in a number of ways. First, to our knowledge, this is the first research program designed to specifically examine how synchronizing to negative targets differs from synchronizing to positive targets. Given the adverse implications of negative synchronization, this research is an important first step in understanding how and when negative synchronization will occur. Second, this research is the first to show that attachment style plays an important role in understanding when social synchronization occurs. We return to this point in a moment. Third, rather than focusing on overt responses such as changes in attitudes and behaviors, the present research adds to the small body of previous literature that had focused on more internal processes related to the self and expands that literature to examine not just mood but also synchronizing to self-esteem and associations of an outgroup to the self (Huntsinger et al., 2009). Finally, the current studies add to the literature suggesting that synchronization is often nonconscious and occurs at an implicit level (Chartrand et al., 2005). In all of our experiments, participants queried in debriefing showed no knowl-

edge that they had attempted to alter the self in anticipation of the interaction. Furthermore, all participants insisted that the information they sought (e.g., information about the self, positive or negative newspaper articles) had nothing to do with their knowledge about their interaction partner. Thus, shifting toward (or away from) the partner occurred without awareness, supporting the view that these are largely nonconscious processes driven by social motivations (Chartrand et al., 2005).

In addition, the current research increases our understanding of the social nature of the self by placing participants in mixed-motive social situations that pit the desire to protect the self against the desire to connect to another person. Our results demonstrate that individuals who were securely attached self-synchronized by seeking more negative relative to positive information about the self (Experiments 1 and 2), by associating the self more with a devalued outgroup (Experiment 3), and by preferring to read depressing relative to happy articles (Experiment 4). Although widely disparate, these three social contexts are all directly relevant to synchronizing the self to one's immediate social environment—whether it be another individual's self-esteem or mood or another group. The extent of this conceptual replication using different types of self-synchronization and both chronic and temporary measures and manipulations of secure attachment is rare and provides strong support for the importance of secure attachment to negative self-synchronization. It also illustrates the broad range of ways that internal shifts of self can occur in synchronization with an interaction partner. Because the self-concept is an important determinant of how people understand and react to the world around them (Greenwald & Banaji, 1995; Greenwald, Pickrell, & Farnham, 2002; Hetts, Sakuma, & Pelham, 1999; Niedenthal, Setterlund, & Wherry, 1992), discovering how the social environment impacts the self has significant theoretical and practical implications. The present studies not only provide further evidence that the self-concept is a social entity that changes in response to other people, relationships, and social concepts (Andersen & Chen, 2002; Baldwin, 1992; Markus & Kunda, 1986) but also exhibit the ease with which the self can change to match individuals and groups.

This research also underlines the importance of the strength and tenacity of the motivation to belong (Baumeister & Leary, 1995). Indeed, when feeling secure, the need to connect to others can sometimes even trump the need for a positive self (Maslow, 1968). These findings are consistent with research and theory on romantic relationships suggesting that people will sometimes put the well-being of their partner and relationship ahead of their own personal interests (Murray & Holmes, 2009). It is also consistent with previous work suggesting that interpersonal motives can lead to maladaptive behavior for the self. For example, participants who engaged in a task with a self-criticizing partner derogated their own performances (Gergen & Wishnov, 1965; Powers & Zuroff, 1988). Notably, whereas previous research utilized paradigms in which participants' self-views were provided in front of the social partner, allowing for the possibility that changes were merely self-presentational (Schlenker, 1980), the present research makes a unique contribution by demonstrating similar effects in situations in which social partners were not aware of the impact of the situation on their behaviors, thus strengthening the contention that under some circumstances, social motives will trump independent motives.

The current research also expands knowledge about the importance of secure attachment in social life. Previous studies have found that secure attachment is related to a wide variety of social outcomes. For example, high attachment security predicts positive attitudes toward relationship partners (Feeney & Noller, 1991); confidence in social skills and positive expectations about future relationships (Collins et al., 2002); trust in relationship partners (Collins & Read, 1990); a perception that others are trustworthy, reliable, and well intentioned (Tidwell et al., 1996); an interpretation of stressful events as less worrisome (Mikulincer & Florian, 1995); and less preoccupation with self-worth issues (Mikulincer, 1998). The present set of studies complements and extends this research by demonstrating that secure attachment also predicts automatic social synchronization behaviors with potential, as yet unknown, interaction partners.

Conclusion

It is a beautiful and mysterious social dance that occurs when two people meet and interact. Without knowing it, the partners shift slightly, altering themselves so that they appear more like each other in subtle, automatic, and amazing ways. The current research increases our understanding of this nonconscious social dance by demonstrating some of its parameters. When the dance is costly, it will only be undertaken by one secure in social connection. The fact that the dance occurs at all when there are risks to the self, that one will shift and change in ways that have negative implications for the self simply to increase the probability of a fleeting positive social encounter, only increases the awe with which we observe and begin to understand this ritual.

References

- Aarts, H., & Dijksterhuis, A. (2000). Habits as knowledge structures: Automaticity in goal-directed behavior. *Journal of Personality and Social Psychology, 78*, 53–63.
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Andersen, S. M., & Chen, S. (2002). The relational self: An interpersonal social-cognitive theory. *Psychological Review, 109*, 619–645.
- Anderson, C., Keltner, D., & John, O. P. (2003). Emotional convergence between people over time. *Journal of Personality and Social Psychology, 84*, 1054–1068.
- Baldwin, M. W. (1992). Relational schemas and the processing of social information. *Psychological Bulletin, 112*, 461–484.
- Baldwin, M. W., Keelan, J. P. R., Fehr, B., Enns, V., & Koh-Rangarajoo, E. (1996). Social cognitive conceptualization of attachment styles: Availability and accessibility effects. *Journal of Personality and Social Psychology, 71*, 94–109.
- Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology, 71*, 230–244.
- Bartholomew, K., & Horowitz, L. M. (1991). Attachment styles among young adults: A test of a four-category model. *Journal of Personality and Social Psychology, 61*, 226–244.
- Baumeister, R. F. (1998). The self. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (4th ed., pp. 680–740). New York, NY: McGraw-Hill.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental of human motivation. *Psychological Bulletin, 117*, 497–529.
- Bavelas, J. B., Black, A., Chovil, N., Lemery, C. R., & Mullett, J. (1988).

- Form and function in motor mimicry: Topographic evidence that the primary function is communication. *Human Communication Research*, 14, 275–299.
- Bernieri, F. (1988). Coordinated movement and rapport in teacher–student interactions. *Journal of Nonverbal Behavior*, 24, 120–138.
- Blaney, P. H. (1986). Affect and memory: A review. *Psychological Bulletin*, 99, 229–246.
- Bono, J. E., & Iles, R. (2006). Charisma, positive emotions and mood contagion. *Leadership Quarterly*, 17, 317–334.
- Bower, G. H. (1981). Mood and memory. *American Psychologist*, 36, 129–148.
- Bowlby, J. (1973). *Attachment and loss: Vol. II. Separation—Anger and anxiety*. London, England: Hogarth.
- Cappella, J. N., & Panalp, S. (1981). Talk and silence sequences in informal conversations: Interspeaker influence. *Human Communication Research*, 7, 117–132.
- Cesario, J., Plaks, J. E., & Higgins, E. T. (2006). Automatic social behavior as motivated preparation to interact. *Journal of Personality and Social Psychology*, 90, 893–910.
- Chartrand, T. L., & Bargh, J. A. (1996). Automatic activation of impression formation and memorization goals: Nonconscious goal priming reproduces effects of explicit task instructions. *Journal of Personality and Social Psychology*, 71, 464–478.
- 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., Maddux, W. W., & Lakin, J. L. (2005). Beyond the perception–behavior link: The ubiquitous utility and motivational moderators of nonconscious mimicry. In R. R. Hassin, J. S. Uleman, & J. A. Bargh (Eds.), *The new unconscious* (pp. 334–361). New York, NY: Oxford University Press.
- Collins, N. L., Cooper, M. L., Albino, A. W., & Allard, L. (2002). Psychosocial vulnerability from adolescence to adulthood: A prospective study of attachment style differences in relationship functioning and partner choice. *Journal of Personality*, 70, 965–1008.
- Collins, N. L., & Read, S. J. (1990). Adult attachment, working models, and relationship quality in dating couples. *Journal of Personality and Social Psychology*, 58, 644–663.
- Collins, N. L., & Read, S. J. (1994). Cognitive representations of adult attachment: The structure and function of working models. In K. Bartholomew & D. Perlman (Eds.), *Advances in personal relationships: Vol. 5. Attachment processes in adulthood* (pp. 53–90). London, England: Jessica Kingsley.
- Dabbs, J. M. (1969). Similarity of gestures and interpersonal influence. In *Proceedings of the 77th Annual Convention of the American Psychological Association: Part 1. 1969* (Vol. 4, pp. 337–338). Washington, DC: American Psychological Association.
- DeMarree, K. G., Wheeler, S. C., & Petty, R. E. (2005). Priming a new identity: Self-monitoring moderates the effects of nonself primes on self-judgments and behavior. *Journal of Personality and Social Psychology*, 89, 657–671.
- DeWall, C. N., Baumeister, R. F., & Vohs, K. D. (2008). Satiated with belongingness? Effects of acceptance, rejection, and task framing on self-regulatory performance. *Journal of Personality and Social Psychology*, 95, 1367–1382.
- Dijksterhuis, A., & Bargh, J. A. (2001). The perception–behavior expressway: Automatic effects of social perception and social behavior. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 30, pp. 1–40). New York, NY: Academic Press.
- Dijksterhuis, A., & van Knippenberg, A. (1998). The relation between perception and behavior, or how to win a game of Trivial Pursuit. *Journal of Personality and Social Psychology*, 74, 865–877.
- Dimberg, U. (1982). Facial reactions to facial expressions. *Psychophysiology*, 19, 643–647.
- Erber, R., Wegner, D., & Theriault, N. (1996). On being cool and collected: Mood regulation in anticipation of social interaction. *Journal of Personality and Social Psychology*, 70, 757–766.
- Feeney, J. A., & Noller, P. (1991). Attachment style and verbal descriptions of romantic partners. *Journal of Personality and Social Psychology*, 8, 187–215.
- Feeney, J. A., & Ryan, S. M. (1994). Attachment style and affect regulation: Relationships with health behavior and family experiences of illness in a student sample. *Health Psychology*, 13, 334–345.
- Galinsky, A. D., Wang, C. S., & Ku, G. (2008). Perspective-takers behave more stereotypically. *Journal of Personality and Social Psychology*, 95, 404–419.
- Gergen, K. J., & Wishnov, B. (1965). Others' self-evaluation and interaction anticipation as determinants of self-presentation. *Journal of Personality and Social Psychology*, 2, 348–358.
- Greenwald, A. G. (1980). The totalitarian ego: Fabrication and revision of personal history. *American Psychologist*, 35, 603–618.
- Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. *Psychological Review*, 102, 4–27.
- Greenwald, A. G., & Farnham, S. D. (2000). Using the Implicit Association Test to measure self-esteem and self-concept. *Journal of Personality and Social Psychology*, 79, 1022–1038.
- Greenwald, A. G., McGhee, D. E., & Schwartz, J. K. L. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology*, 74, 1464–1480.
- Greenwald, A. G., Pickrell, J. E., & Farnham, S. D. (2002). Implicit partisanship: Taking sides for no reason. *Journal of Personality and Social Psychology*, 83, 367–379.
- Griffin, D., & Bartholomew, K. (1994). Models of the self and other: Fundamental dimensions underlying measures of adult attachment. *Journal of Personality and Social Psychology*, 67, 430–445.
- Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion*. New York, NY: Cambridge University Press.
- Hetts, J. J., Sakuma, M., & Pelham, B. W. (1999). Two roads to positive regard: Implicit and explicit self-evaluation and culture. *Journal of Experimental Social Psychology*, 35, 512–559.
- Hsee, C. K., Hatfield, E., Carlson, J., & Chemtob, C. (1990). The effect of power on susceptibility to emotional contagion. *Cognition & Emotion*, 4, 327–340.
- Huntsinger, J., Lun, J., Sinclair, S., & Clore, G. (2009). Contagion without contact: Anticipatory mood matching in response to affiliative motivation. *Personality and Social Psychology Bulletin*, 25, 909–922.
- Isen, A. (1984). Toward understanding the role of affect in cognition. In R. S. Wyer & T. Srull (Eds.), *Handbook of social cognition* (Vol. 3, pp. 179–236). Hillsdale, NJ: Erlbaum.
- Kawakami, K., Dovidio, J. F., & Dijksterhuis, A. (2003). Effect of social category priming on personal attitudes. *Psychological Science*, 14, 315–319.
- Kawakami, K., Phills, C., Greenwald, A. G., Simard, D., Pontiero, J., Brnjas, A., & Mills, J. (2009). *Synchronizing the self to activated social categories*. Manuscript submitted for publication.
- Kawakami, K., Young, H., & Dovidio, J. F. (2002). Automatic stereotyping: Category, trait, and behavioral activations. *Personality and Social Psychology Bulletin*, 28, 3–15.
- Larose, S., Bernier, A., Soucy, N., & Duchesne, S. (1999). Attachment style dimensions, network orientation and the process of seeking help from college teachers. *Journal of Social and Personal Relationships*, 16, 225–247.
- Lun, J., Sinclair, S. A., Whitchurch, E. R., & Glenn, C. (2007). (Why) do I think what you think? Epistemic social tuning of implicit prejudice. *Journal of Personality and Social Psychology*, 93, 953–972.
- Markus, H. R., & Kunda, Z. (1986). Stability and malleability of the

- self-concept. *Journal of Personality and Social Psychology*, 51, 858–866.
- Maslow, A. H. (1968). *Toward a psychology of being* (2nd ed.). New York, NY: Van Nostrand.
- Mikulincer, M. (1998). Adult attachment style and affect regulation: Strategic variations in self-appraisals. *Journal of Personality and Social Psychology*, 75, 420–435.
- Mikulincer, M., & Arad, D. (1999). Attachment working models and cognitive openness in close relationships: A test of chronic and temporary accessibility effects. *Journal of Personality and Social Psychology*, 77, 710–725.
- Mikulincer, M., & Florian, V. (1995). Appraisal and coping with a real-life stressful situation: The contribution of attachment styles. *Personality and Social Psychology Bulletin*, 21, 408–416.
- Mikulincer, M., & Shaver, P. R. (2003). The attachment behavioral system in adulthood: Activation, psychodynamics, and interpersonal processes. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 35, pp. 52–153). New York, NY: Academic Press.
- Mikulincer, M., & Shaver, P. R. (2007). Reflections on security dynamics: Core constructs, psychological mechanisms, relational contexts, and the need for an integrative theory. *Psychological Inquiry*, 18, 197–209.
- Murray, S. L., Bellavia, G., Rose, P., & Griffin, D. (2003). Once hurt, twice hurtful: How perceived regard regulates daily marital interaction. *Journal of Personality and Social Psychology*, 84, 126–147.
- Murray, S. L., Derrick, J. L., Leder, S., & Holmes, J. G. (2008). Balancing connectedness and self-protection goals in close relationships: A levels-of-processing perspective on risk regulation. *Journal of Personality and Social Psychology*, 94, 429–459.
- Murray, S. L., & Holmes, J. G. (2009). The architecture of interdependent minds: A motivation-management theory of mutual responsiveness. *Psychological Review*, 116, 908–928.
- Murray, S. L., Holmes, J. G., & Collins, N. L. (2006). Optimizing assurance: The risk regulation system in relationships. *Psychological Bulletin*, 132, 641–666.
- Murray, S. L., Holmes, J. G., & Griffin, D. W. (2000). Self-esteem and the quest for felt security: How perceived regard regulates attachment processes. *Journal of Personality and Social Psychology*, 78, 478–498.
- Neumann, R., & Strack, F. (2000). “Mood contagion”: The automatic transfer of mood between persons. *Journal of Personality and Social Psychology*, 79, 211–223.
- Niedenthal, P. M., Setterlund, M. B., & Wherry, M. B. (1992). Possible self-complexity and affective reactions to goal-relevant evaluation. *Journal of Personality and Social Psychology*, 63, 5–16.
- Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). Math = male, me = female, therefore math ≠ me. *Journal of Personality and Social Psychology*, 83, 44–59.
- Pierce, T., & Lydon, J. (1998). Perceived available support as a relational schema: Testing the buffering effects of activated and chronic interpersonal expectations. *Journal of Personality and Social Psychology*, 75, 1441–1448.
- Powers, T. A., & Zuroff, D. C. (1988). Interpersonal consequences of overt self-criticism: A comparison of neutral and self-enhancing presentations of self. *Journal of Personality and Social Psychology*, 54, 1054–1062.
- Ratcliff, R. (1993). Methods for dealing with response time outliers. *Psychological Bulletin*, 114, 510–532.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Schlenker, B. R. (1980). *Impression management: The self-concept, social identity, and interpersonal relations*. Monterey, CA: Brooks/Cole.
- Sinclair, S., Huntsinger, J., Skorinko, J., & Hardin, C. D. (2005). Social tuning of the self: Consequences for the self-evaluations of stereotype targets. *Journal of Personality and Social Psychology*, 89, 143–159.
- Sinclair, S., Lowery, B. S., Hardin, C. D., & Colangelo, A. (2005). Social tuning of automatic gender and ethnic attitudes: The role of relationship motivation. *Journal of Personality and Social Psychology*, 89, 583–592.
- Snyder, M., Tanke, E. D., & Berscheid, E. (1977). Social perception and interpersonal behavior: On the self-fulfilling nature of social stereotypes. *Journal of Experimental Social Psychology*, 35, 656–666.
- Steele, J. R., & Ambady, N. (2006). “Math is hard!” The effect of gender priming on women’s attitudes. *Journal of Experimental Social Psychology*, 42, 428–436.
- Swann, W. B., Jr., Pelham, B. W., & Krull, D. S. (1989). Agreeable fancy or disagreeable truth? Reconciling self-enhancement and self-verification. *Journal of Personality and Social Psychology*, 57, 782–791.
- Swann, W. B., Jr., & Read, S. J. (1981). Acquiring self-knowledge: The search for feedback that fits. *Journal of Personality and Social Psychology*, 41, 1119–1128.
- Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–47). Monterey, CA: Brooks/Cole.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental-health. *Psychological Bulletin*, 103, 193–210.
- Tidwell, M. O., Reis, H. T., & Shaver, P. R. (1996). Attachment, attractiveness, and social interaction: A diary study. *Journal of Personality and Social Psychology*, 71, 729–745.
- van Baaren, R. B., Maddux, W. W., Chartrand, T. L., De Bouter, C., & van Knippenberg, A. (2003). It takes two to mimic: Behavioral consequences of self-construals. *Journal of Personality and Social Psychology*, 84, 1093–1102.
- Wegener, D., & Petty, R. (1994). Mood management across affective states: The hedonic contingency hypothesis. *Journal of Personality and Social Psychology*, 66, 1034–1048.
- Wheeler, S. C., DeMarree, K. G., & Petty, R. E. (2005). The roles of the self in priming-to-behavior effects. In A. Tesser, J. V. Wood, & D. A. Stapel (Eds.), *On building, defending, and regulating the self: A psychological perspective* (pp. 245–271). New York, NY: Psychology Press.
- Wheeler, S. C., & Petty, R. E. (2001). The effects of stereotype activation on behavior: A review of possible mechanisms. *Psychological Bulletin*, 127, 797–826.

Received September 22, 2008

Revision received December 3, 2009

Accepted January 1, 2010 ■