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ON THE NONCONSCIOUS ANTECEDENTS OF SOCIAL IDENTIFICATION: INGROUP SALIENCE, OUTGROUP SALIENCE, OR BOTH?

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Recent research has demonstrated that the self is subject to a variety of subtle influences. To date, however, little research has examined nonconscious factors that influence one's social identity. Unlike most self-conceptions, a person's social identity can be determined not only by the presence of one's own group, but also by the presence of a relevant outgroup. Across two studies, we explored whether the nonconscious presence of ingroup and outgroup stimuli, presented alone and in combination, would lead to increases in conscious social identification with one's ingroup. Consistent with our predictions, we found that the highest level of ingroup identification resulted from the subliminal presentation of both ingroup and outgroup symbols, compared with presentation of either type of symbol in isolation. Results are discussed with respect to social identity perspectives and nonconscious influences on self-conceptions and behavior.

"Not only is the self entwined in society; it owes society its existence" (Adorno, 1951/1974, p. 154).

People describe themselves in a number of ways. They may note their traits, their abilities, their goals, their relationships, and even the important groups with which they identify. Not only are there a number of dimensions on which individuals can vary, but these self-definitions can be relatively fluid. At the baseball game, people identify themselves as loyal fans; later that evening at the dinner table, they identify as family members. People deliberately plan their schedules around their varied roles, shifting their self-conceptions and behavior accordingly. However, do these shifts always occur deliberately and are the factors that influence

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an individual's social self always so transparent? During a typical daily commute, for example, it would not be unusual to catch a glimpse of one's national flag or the flag of another country, or to see symbols representing multiple groups to which one belongs or does not belong. Such a glimpse might not even register in conscious awareness due to the familiarity of the route or to the focus of attention elsewhere. Yet, one's sense of self might be affected, outside of awareness, as might subsequent attitudes and behaviors. In the present research, we are interested in exploring one specific type of shift—a shift in a person's social identity that might occur in response to symbols like those described above. Before discussing our specific hypotheses, below we describe existing research examining subtle influences on the self.

SUBTLE INFLUENCES ON THE SELF

Classic research on the self has shown that relatively subtle environmental influences can affect self-conceptions. For example, when people are asked leading questions by others (e.g., implying they are an introvert versus an extravert), their self-reports and behavior can shift to become more congruent with the questions (e.g., more introverted; Fazio, Effrein, & Falender, 1981). Even features of the social context that might not directly interact with the self, such as the positivity or negativity of other people in the environment (Morse & Gergen, 1970), or the uniqueness of one's own gender relative to the social context (McGuire, McGuire, & Winton, 1979) can influence one's self-evaluations and self-conceptions (for reviews, see Markus & Wurf, 1987; McGuire & McGuire, 1988).

In recent years, interest in subtle, often "implicit," influences on the self has reemerged. This research has reinforced earlier notions that individuals' self-conceptions are often malleable in response to relatively subtle environmental influences, but has gone further to examine a broader range of self-conceptions and also to provide insight into the psychological processes associated with such shifts in self-conceptions. This recent research falls into two traditions—research examining influences on individuals' self-views (e.g., traits and evaluations) and research examining self-construal.

Self-Views. Research examining influences on individuals' self-views assumes that the traits, goals, and evaluations one associates with oneself can shift in response to subtle influences in the environment (e.g., Dijksterhuis, Chartrand, & Aarts, 2007; Mussweiler, 2007; Wheeler, DeMarree, & Petty, 2007). Research on social comparison has demonstrated that even subliminal social comparison standards related to intelligence can produce assimilative (Stapel & Blanton, 2004) and contrastive (Mussweiler, Ruter, & Epstude, 2004) shifts in individuals' self-perceived intelligence. Similarly, the mere activation of self-irrelevant social categories, such as the African American stereotype among European American participants, can produce shifts in individuals' self-conceptions (e.g., increased self-perceived aggressiveness; see DeMarree & Loersch, 2009; DeMarree, Wheeler, & Petty, 2005; see also Dijksterhuis et al., 1998; Schubert & Häfner, 2003). These influences can come from a wide variety of sources, including (in addition to those mentioned above) interpersonal relationships (Fitzsimons & Bargh, 2003; Hinkley & Andersen, 1996), evaluative conditioning (Baccus, Baldwin, & Packer, 2004; Dijksterhuis, 2004), and

even the products people use (Fitzsimons, Chartrand, & Fitzsimons, 2008; Park & John, 2010).

Self-Construal. Research examining self-construal assumes that people can vary in the extent to which they identify themselves in relation to other people (for a review, see Cross, Hardin, & Gercek-Swing, 2011). Individuals with an independent self-construal view themselves as distinct from other important individuals, whereas individuals with an interdependent self-construal view themselves as inherently interconnected with important others (Markus & Kitayama, 1991). Although research on self-construal has typically examined cultural or individual differences, Gardner and her colleagues have demonstrated that self-construal can shift in response to self-construal primes (e.g., I vs. we; see Brewer & Gardner, 1996), and that these shifts mirror cultural differences (Gardner, Gabriel, & Lee, 1999). In other words, as with subtle primes influencing the content of self-conceptions, so too can primes influence how one defines the self in relation to other people (see also Stapel & van der Zee, 2006).

Social Identities? Based on the existing literature, it is clear that both the content and nature of a person's self-conceptions can shift in response to subtle influences, such as situationally induced primes. The present investigation seeks to investigate another such shift in self-definition—shifts in a person's identification with relevant ingroups, or social identity. Based on the above reviewed literature it would seem straightforward to predict that shifts in social identity would follow directly from the activation of a relevant ingroup. However, research on social identity suggests that this may not always be the case.

SOCIAL IDENTITY RESEARCH

The social identity perspective holds that the self can be defined by group membership. People identify with groups because it allows them to enhance self-esteem within certain intergroup contexts (Tajfel & Turner, 1986; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) and reduce uncertainty about the world (Hogg, 2007). Research demonstrates that our current social identity is essential to how we think, feel, and act toward ourselves and others.

Social identity perspectives argue that there are a wide range of social identities an individual can claim at any given time. For example, people can identify with their family, their religious affiliation, their career, their political preferences, their school affiliation, and so on. Predicting the specific identity that a person adopts at any given time is an important topic of study in social identity research. People are more likely to categorize themselves in line with identities that are currently accessible and salient (Turner et al., 1987). This general prediction is in line with other research on concept activation and the self, which holds that accessible categories can be used to determine how the self is defined along relevant dimensions (e.g., Wheeler & DeMarree, 2009).

However, social identity perspectives go beyond the basic principles considered in social cognition research on priming. Specifically, several perspectives on social identity argue that people will adopt social identities that maximize the difference between one's own group and other, non-self groups. For example, the meta-

contrast principle of self-categorization theory holds that individuals will seek to identify themselves along identity dimensions that maximize the ratio of between-group differences to within-group differences (Turner et al., 1987). In another example, optimal distinctiveness theory argues that people identify with groups that satisfy their need for inclusion and yet that are distinct enough from other groups to serve a meaningful identity function (Brewer, 1991). These perspectives lead to the prediction that the likelihood of identification with any given ingroup increases to the extent that a relevant outgroup is also present, because an outgroup provides a critical reference point that can be used to define the ingroup and distinguish it from other groups. Furthermore, if relevant ingroups and outgroups consistently and chronically lead to activation of relevant social identities, these links may become automated (Amiot, de la Sablonniere, Terry, & Smith, 2007), such that even relevant ingroup and outgroup words and symbols, and not necessarily ingroup and outgroup individuals themselves, may be linked with the self and activate relevant identities.

Based on this literature we predict that subtle shifts in social identity will occur to the greatest extent when an ingroup is made salient and an outgroup is also made salient to create an intergroup context (Turner, Oakes, Haslam, & McGarty, 1994). Not all research is uniform in leading to this prediction, however. For example, some studies have shown that mere thought about an outgroup (but not necessarily an ingroup) is sufficient to activate associated social identities and identity-related responses (e.g., McGuire & Padawer-Singer, 1976; Morrison, Fast, & Ybarra, 2009). Findings like this suggest that the presence of an outgroup alone might be sufficient to increase identification with an ingroup. In addition, positive ingroup evaluations can emerge in the absence of an intergroup comparison (Gaertner, Iuzzini, Witt, & Oriña, 2006) and ingroup primes have been shown to be automatically linked to positive affect (Otten & Moskowitz, 2000). Furthermore, ingroup bias appears to be driven by favoritism for an ingroup, not derogation of outgroups (Brewer, 1979, 1999), suggesting that outgroups might not be necessary for ingroup identification. Thus, there is sufficient research in the social identity literature to propose that either the presence of an ingroup alone, or the presence of an outgroup alone, would lead to increased social identification. Our studies (particularly Study 2), will allow us to test these competing predictions.

CURRENT RESEARCH

The primary purpose of this research is to extend our understanding of subtle influences on the self. Specifically, we aim to examine the conditions under which subtle exposure to certain ingroup and outgroup stimuli will result in increased conscious identification with a specific social identity. The current research also advances our understanding of social identity and social cognition in other ways. For example, this research is among the first to examine automatic influence on social identity. Existing research has used automatic measures of social identity (e.g., Knowles & Peng, 2005) and examined automatic consequences of social identity (e.g., Otten & Wentura, 1999), but we are aware of no research that has examined nonconscious factors that facilitate conscious identification with specific social groups. Furthermore, research examining automatic influences on the self has generally not used ecologically valid priming stimuli. Mirroring research that

primed situational construals (Kay, Wheeler, Bargh, & Ross, 2004), we sought to use stimuli that were more likely to resemble those that people encounter in their daily lives.

To examine the conditions under which subtle exposure to group primes influences conscious social identity, ingroup and outgroup stimuli were presented through a subliminal priming procedure across two studies. In these studies, ingroup salience was activated through the presentation of ingroup symbols, including nonspecific word primes (e.g., we, us) and specific photo primes (e.g., ingroup photos, visual symbols). Outgroup salience was activated through the presentation of outgroup symbols, including nonspecific word primes (e.g., they) and specific photo primes (e.g., outgroup photos, visual symbols). Presence or absence of outgroup salience was manipulated orthogonally to presence or absence of ingroup salience, to allow an examination of their individual and joint effects on social identification. After exposure to the subliminal priming procedures, participants completed an explicit measure of social identification with the ingroup. Drawing from social identity perspectives, we predicted that individuals would show the strongest identification with a relevant ingroup when two conditions were met: The ingroup was made salient *and* an outgroup was made salient. Importantly, the effects of primes on identification should occur outside of conscious awareness.

STUDY 1

As an initial test of our predictions, all participants had their ingroup made salient by being subliminally primed with generic ingroup words (e.g., we) and ecologically valid ingroup pictures selected based on careful pretesting.[1] We manipulated the presence or absence of outgroup salience through the subliminal presentation of generic outgroup words (e.g., them) and outgroup pictures. The outgroup pictures were pretested using the same method employed to select the ingroup pictures. Thus the study was a one-way (ingroup salience vs. ingroup and outgroup salience) between subjects design. Following the priming procedure, we measured the impact of these variables on explicit identification. If identification is driven by the differentiation of one's ingroup from an outgroup, then this manipulation should differentially impact explicit ingroup identification (cf. Spears, Gordijn, Dijksterhuis, & Stapel, 2004); specifically, we predicted that increased identification with the ingroup would occur to the greatest extent under conditions where both the ingroup and outgroup were made salient (Brewer, 1991; Turner et al., 1987).

METHOD

Participants. Seventy-six Texas Tech University undergraduate students participated in exchange for partial credit in their general psychology course. Six par-

1. All participants were Texas Tech University students. The rival university chosen was the University of Texas. Both universities are in the same athletic conference and Texas Tech students see the University of Texas as one of their biggest sports rivals. The 15 ingroup photos were rated as most representative (out of 30 photos) of Texas Tech University by Texas Tech participants ($N = 22$). The 15 outgroup photos were rated as most representative (out of 30 photos) of University of Texas by a separate set of Texas Tech participants ($N = 22$). The photos depicted popular symbols and sporting events from the respective universities.

ticipants were excluded from analyses because they showed awareness of the photograph primes (N = 3), did not follow directions (N = 2), or were subject to experimenter error (N = 1), leaving 70 participants (50 women, M_{age} = 18.91).

Materials and Procedure. When participants entered the laboratory, the experimenter explained that they would be taking part in two unrelated studies. All participants completed the study in separate cubicles via a computer and were randomly assigned to conditions. Experimenters were blind to condition assignments.

Participants were informed that the purpose of the first study was to examine estimation skills. Their task ostensibly was to estimate the number of large or small Xs that appeared on the computer screen on several trials. The real aim of the first task was to subliminally expose participants to the primes. The basic procedure for the priming task was adapted from Cesario, Plaks, and Higgins (2006). In total, participants received 60 trials, consisting of four randomized blocks of 15 randomized trials each. In the ingroup-only condition, in four blocks, the 15 ingroup photos (images and symbols representing their university) were randomly paired with ingroup words (e.g., us, we). In the ingroup and outgroup condition, in two blocks, the 15 ingroup photos were randomly paired with ingroup words (e.g., us, we), while in the other two blocks, outgroup words (e.g., them, they) and the 15 outgroup photos (images and symbols representing a rival university) were randomly paired together.[2] The specific priming parameters described below were chosen on the basis of pilot testing (N = 32) in which participants reported their awareness of the primes directly after being presented with the primes using a variety of presentation lengths. The longest presentation time for which 95% of the participants did not provide evidence of any awareness of the primes was selected.

Participants were instructed to complete each trial as quickly and accurately as possible. All stimuli were presented on an LCD monitor with a 60 hz refresh rate through the computer program DirectRT. On each trial, a forward mask of a string of Xs were presented together in the middle of the computer screen for 100 ms, followed by the appropriate word prime presented for 16.5 ms, and then the appropriate photo prime presented for 16.5 ms. Finally, a backward mask was presented, that also served as the target screen. The backward mask contained black and red scribble patterns in the background, with a random pattern of small and large red Xs appearing in the foreground. The target screen remained on the monitor until participants decided if there were more large Xs than small Xs by pushing the "YES" or "NO" buttons on the keyboard.

Immediately following the priming manipulation, participants were introduced to the "second study" which was described as a survey used to measure various attitudes. To ensure that the results were not due to the prime's influence on mood (see Perdue, Dovidio, Gurtman, & Tyler, 1990), immediately following the priming manipulation, participants were asked to rate their current mood on a 7-point

2. In addition, for exploratory purposes, we also included a manipulation of ingroup words (i.e., "we" vs. "X") orthogonal to the manipulation described. Therefore, the full experimental design was a 2 (outgroup pictures: present vs. absent) × 2 (ingroup words: present vs. absent) between-subjects factorial. The second manipulation, ingroup words, did not have a significant impact (all ps > .53), most likely because all participants were already being repeatedly exposed to ingroup pictures. Thus, unlike Study 2, Study 1 did not manipulate both ingroup and outgroup presence.

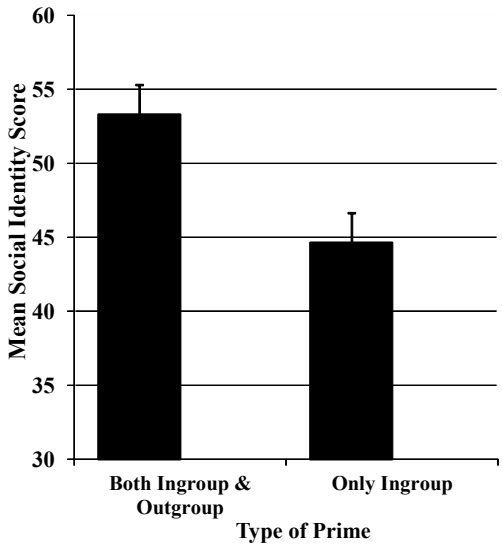

FIGURE 1. Mean social identity score as a university student as a function of type of prime, Study 1. Error bars reflect standard errors of the mean.

scale from "very negative" to "very positive" (adapted from Stapel & Koomen, 2000). Next, participants completed a 12-item dependent measure of their social identity as a member of their own university, patterned after a measure used by Luhtanen and Crocker (1992) and Ouwerker, de Gilder, and de Vries (2000; example items include: "I identify with other Texas Tech University students"; "I feel committed to other Texas Tech University students"; "I am similar to other Texas Tech University students"; "I am a person who is proud to say that I am a Texas Tech University student"). Participants indicated their agreement or disagreement with each statement on a 7-point scale, with higher numbers indicating greater social identification. Finally, a funnel debriefing was conducted (adapted from Bargh & Chartrand, 2000), during which participants were given several opportunities to disclose awareness of the prime and of the purpose of the study.

RESULTS AND DISCUSSION

Awareness. Based on the funnel debriefing, no participants reported awareness that their self-reported social identification was influenced by anything in the study. Although 3 participants did report seeing an image being presented to them, and thus were dropped from the data analysis (as described in the participant section above), these participants were not able to correctly identify what image they saw and inclusion of them in the data analysis did not significantly change the results reported below. Although care was taken in ensuring that the primes were presented subliminally, it is still possible that participants may have seen some of the primes. However, based on the results of the funnel debriefing from the current study, there was no evidence that any of the participants were aware of how the initial priming task they completed may have influenced their responses on the explicit measure of social identity.

Social Identification. A one-way ANOVA was conducted on participants' summed social identity scores (α = .80). Consistent with expectations, results indicated a significant effect, $F(1, 68) = 4.44$, $p = .039$, $\eta^2 = .063$, such that participants for whom the outgroup was made salient identified more strongly as a member of their university ($M = 51.71$, $SD = 12.98$) than those not exposed to the outgroup primes ($M = 44.95$, $SD = 13.13$; see Figure 1).

Ancillary Analysis. We also conducted a one-way ANOVA on participants' mood, $F(1, 68) = 2.92$, $p = .092$, which failed to support the idea that the primes differentially influenced participants' moods, and that mood variations, in turn, could explain the social identity findings. To further explore the potential role of mood, an ANCOVA (between-subjects factor: ingroup salience, ingroup and outgroup salience; covariate: mood) was conducted. The results revealed that the significant effect of condition reported above remained, $F(1, 67) = 3.80$, $p = .05$, $\eta^2 = .065$.

The results of Study 1 provided initial evidence that factors thought to be important in determining social identity according to self-categorization theory can shift a conscious sense of social self. That is, salience of an ingroup in conjunction with salience of an outgroup, which enables an intergroup comparison to be made, can enhance identification with the ingroup, in comparison to ingroup salience alone. This study also provides the first known direct evidence that participants may be unaware of the influences upon their conscious social identity. However, because the ingroup was made salient for all participants, the design did not allow for a test of whether outgroup salience alone can influence social identity.

STUDY 2

The purpose of Study 2 was to determine whether making both the ingroup and outgroup salient would enhance conscious social identification in comparison to only ingroup salience, which would conceptually replicate the findings of Study 1, and in comparison to only outgroup salience, which would extend Study 1.

In this study, we manipulated the subliminal presence of ecologically valid ingroup or outgroup symbols. Orthogonal to this, we also manipulated an ingroup or outgroup context by subliminally presenting words associated with one's own group (e.g., we), another group (e.g., they), or no group (i.e., "X"). Unlike the previous study, this design allowed us to examine the influence of presenting ingroup or outgroup symbols alone. If ingroup (outgroup) salience alone is sufficient to boost identification with the relevant ingroup, then lower levels of social identification should occur in conditions in which there is an absence of ingroup (outgroup) salience relative to all other conditions. Consistent with self-categorization theory, we predicted the highest level of social identification to occur when both ingroup and outgroups were activated, either by the presentation of ingroup symbols in an outgroup context, or the presentation of outgroup symbols in an ingroup context.

METHOD

Participants. Ninety-nine undergraduate students participated for partial credit in their general psychology course. Participants were randomly assigned to one of six conditions in a 3 (Word prime: ingroup salience vs. outgroup salience vs. con-

trol) × 2 (Photo prime: ingroup salience vs. outgroup salience) between-subjects factorial design. Nine participants were excluded for awareness of the photograph primes ($N = 4$), for not following directions ($N = 3$), or due to experimenter error ($N = 2$), leaving 90 participants (64 women, $M_{age} = 19.80$).

Materials and Procedure. The procedure and priming method were similar to Study 1, except that the combination of primes presented in the 60 (4 blocks of 15) trials was altered. In two blocks, participants were presented with ingroup words (e.g., we, us), outgroup words (e.g., they, them), or just "X." In the other two blocks, participants were presented with ingroup photos or outgroup photos. As in Study 1, participants then rated their current mood, completed the 12-item measure of their social identity as a member of their university, and participated in a funnel debriefing.

RESULTS AND DISCUSSION

Awareness. Similar to Study 1, no participants reported awareness that their self-reported social identification was influenced by anything in the study. Also, as in Study 1, including the 4 participants that reported seeing objects flash onto the screen did not significantly change the results reported below.

Social Identification. A Word prime (ingroup vs. outgroup vs. control) × Photo prime (ingroup vs. outgroup) ANOVA was conducted on participants' self-reported social identity scores ($\alpha = .80$). Results showed no significant main effects for word or photo primes, but the predicted interaction between photo and word primes was found, $F(2, 84) = 7.65$, $p = .001$, $\eta^2 = .154$ (see Figure 2). To further explore the interaction, the simple main effects of photo prime at each level of word prime were examined. When participants were primed with ingroup words, $F(1, 27) = 11.08$, $p < .01$, $d = 1.46$, or outgroup words, $F(1, 28) = 4.76$, $p < .05$, $d = 1.02$, the simple main effect of photo prime was significant, although in opposite directions; however, when primed with "X," no effect of photo prime was found, $F < 1$. When the ingroup was made salient through word primes, participants identified themselves more strongly as members of their university when the photo primes made the outgroup salient ($M = 54.92$, $SD = 4.00$) than when the photo primes made the ingroup salient ($M = 42.75$, $SD = 11.06$). When the outgroup was made salient through word primes, participants more strongly identified themselves as members of their university when the photo primes made the ingroup salient ($M = 54.33$, $SD = 3.74$) than when the photo primes made the outgroup salient ($M = 46.53$, $SD = 10.18$).

These results suggest that when both ingroup and outgroup were salient, participants' self-identification with the ingroup was enhanced compared to when only an ingroup or an outgroup were made salient. To more directly examine this conclusion, and to allow for a direct comparison to Study 1, the two conditions in which only ingroup stimuli were presented were collapsed together, the two conditions in which only outgroup stimuli were presented were collapsed together, and the two conditions in which both ingroup and outgroup stimuli were presented were collapsed together. Next, a one-way ANOVA on participant's social identity scores was conducted. Results showed a significant effect, $F(2, 87) = 9.68$, $p < .001$, $\eta^2 = .182$. Replicating and extending the results of Study 1, a Tukey HSD showed that the condition in which participants received both an ingroup and out-

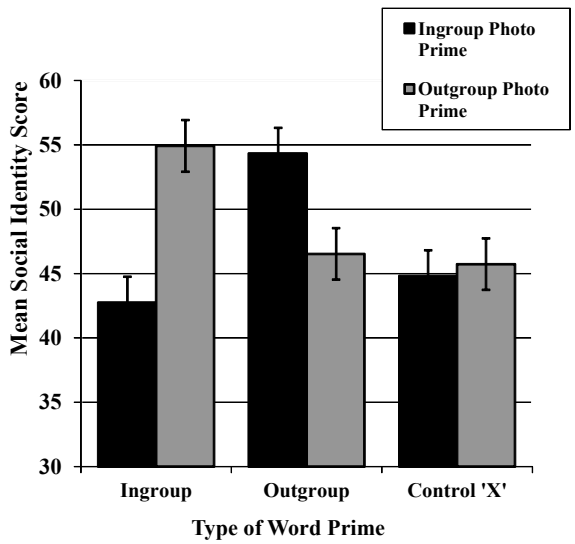

FIGURE 2. Mean social identity score as a university student as a function of type of prime, Study 2. Error bars reflect standard errors of the mean.

group prime (M = 55.59, SD = 10.60) was significantly higher than the conditions that only received ingroup primes (M = 44.78, SD = 11.35, $p < .001$) or that only received outgroup primes (M = 47.42, SD = 11.25, $p = .005$). No significant difference was found between the ingroup-only and outgroup-only conditions, $p = .529$.

Ancillary Analysis. A two-way ANOVA on participants' mood was conducted and no effects were significant, all Fs < 1. These findings provided no evidence that the primes differentially influenced participants' moods, and that mood variations, in turn, could explain the social identity findings.

The results of Study 2 (see Figure 2) provide evidence that ingroup salience and outgroup salience combine to play an important role in determining a conscious sense of social identification. This conclusion is consistent with the tenets of self-categorization theory. Importantly, the results go beyond previous findings to show that the effects of ingroup salience and outgroup salience on conscious identification with the ingroup do not depend on conscious awareness of the relevant cognitive processes or even of the ingroup/outgroup stimuli. When subliminal primes designed to make the ingroup salient were used in conjunction with subliminal primes designed to make the outgroup salient, self-reported identification with the ingroup was significantly higher than when ingroup salience primes were used alone or when outgroup salience primes were used alone.

These results demonstrate that the combination of ingroup salience and outgroup salience is necessary to influence participants' conscious sense of social identity. This finding is consistent with previous theory suggesting that group identities can become automatically linked with the self and others over time (Amiot et al., 2007) and provides important implications for other research areas in which prime pairing is used (e.g., Is it necessary to link I/me with positive self-descriptors, or are positive self-descriptive words alone enough to boost implicit self-esteem?; see Dijksterhuis, 2004).

GENERAL DISCUSSION

Across two studies, participants that had both their ingroup and outgroup made salient more strongly identified themselves as a member of their ingroup than did participants who only had their ingroup (Studies 1 & 2) or outgroup (Study 2) made salient. Thus, even with subliminal influences, these two factors in combination produced the greatest shift in participants' social identification with their own group. This is quite different from other research examining subtle influences on the self (e.g., DeMarree et al., 2005; Gardner et al., 1999) which typically has shown that the mere activation of relevant concepts can produce assimilative shifts in self-views, and speaks to the relative uniqueness of social identity more broadly. Therefore, the present findings, that individuals' conscious sense of connection or identification with an ingroup can be influenced by sources outside of awareness, are consistent with the growing body of research indicating that seemingly complex processes can occur nonconsciously (for a review, see Andersen, Moskowitz, Blair, & Nosek, 2007).

One assumption of the current research was that participants coming into the experiment had the potential to identify themselves as students of their university. Given that all participants were students of the respective university, this assumption was probably met; nevertheless, participants may have varied in the degree to which they chronically identified as a student of their university. Individuals' chronic level of ingroup identification could further moderate these results in a number of possible ways. For example, people high (versus low) in chronic identification with their university might have more prime-congruent self-content available for activation (see Wheeler et al., 2007). A number of other possibilities exist, and the behavioral priming literature is full of examples of people's chronic self-views moderating the impact of primes on subsequent judgment and behavior (e.g., Smeesters, Yzerbyt, Corneille, & Warlop, 2009; for a review, see Wheeler et al., 2007). However, because the current study is unique in that the presence of ingroup and outgroup symbols interacted to produce the greatest levels of identification, it is unclear the extent to which other research on automatic influences on the self generalizes to shifts in identification. For example, because of a greater number of experiences with the relevant ingroup and outgroup symbols, high chronic identifiers might increase their conscious identification with their ingroup with the mere presentation of either symbol, whereas low chronic identifiers might need the joint presence of ingroup and outgroup symbols to shift their identification. Such questions merit further research. Importantly, the current studies demonstrated that the basic result—increased identification following the joint nonconscious activation of ingroup and outgroup symbols—was sufficiently powerful to overcome these potential alternative influences.

Could nonconscious shifts in social identity play a role in prime-to-behavior effects? Previous research has considered chronic self-reported social identification with the ingroup as a moderator of the influence of covert group primes on relevant automatic attitudes and behaviors (Hugenberg & Bodenhausen, 2004; Ledgerwood & Chaiken, 2007; Spears et al., 2004). However, it is also possible that the group primes used in this research could be inadvertently influencing participants' momentary degree of identification with their ingroups, which in turn may influence attitudes and behaviors. Specifically, the influence of group primes on current social identification could mediate the automatic influence of group primes on atti-

tudes and behaviors. For example, when "elderly" is primed in an experiment and a young participant is surrounded by other college students, social identification as a young person may be enhanced, and may lead to the contrastive behavioral effect of walking faster (cf. Spears et al., 2004). Therefore, in real world environments, people may be unaware of the factors (e.g., national flags, political advertising, corporate branding) that enhance their identification with a given group at a particular moment and unaware of the influence this conscious identification can in turn have on their attitudes and behaviors. Such lines of reasoning may shed additional light on recent work showing the mediating role of interpersonal perceptions in automatic prime-to-behavior effects (see e.g., Kay, Wheeler, & Smeesters, 2008; Smeesters, Wheeler, & Kay, 2009; Wheeler et al., 2007; Wyer, Perfect, Neilens, Mazzoni, & Roper, 2011).

In the current studies, our dependent measure was limited to self-reported social identification. However, identification with an ingroup clearly has important implications for downstream attitudes and behaviors. It is important to follow up the current research with studies that examine how exposure to ingroup and outgroup cues outside of awareness can affect attitudinal and behavioral outcomes relevant to group identification, such as ingroup bias, attitudinal consensus, and behavioral commitment. One implication to explore is that individuals' lack of awareness of factors that affected their current sense of identification with a group may make it relatively difficult to correct or adjust for such influence.

The current research provides a unique test of self-categorization theory and the results support and extend the theory. Given that extremely subtle factors can influence our conscious sense of self, the circumstances under which social identification processes play an important role in group (e.g., ethnocentrism, organizational behavior) and interpersonal (e.g., prejudice, helping behavior) phenomena may be broader and more complex than previously thought (for a recent example see Cikara, Botvinick, & Fiske, 2011). Examining the mediating role of conscious social identity may further bring to light the nonconscious antecedents of such phenomena.

This research supports a growing trend in investigations of automatic processing by seeking to understand the complex relationship between conscious and nonconscious processes. One's own definition of the self is thought to be reflective of consciousness itself (e.g., Kihlstrom, 1993). Nevertheless, the current research suggests that the self (or social self) may shift according to subtle, identity-relevant cues that are not available to conscious awareness. These shifts may help people to adapt seamlessly and effortlessly with their social environments, without needing to draw on deliberate conscious resources. As a result, a seemingly functional and adaptive way of dealing with an extremely complex social world is produced (see Brewer, 2004). It seems then that humans do in fact owe their sense of self to their society, as the beginning quote by Adorno (1951/1974) suggests, for the social connections they maintain can influence their very identity in both subtle and obvious ways.

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