

Us and Them: Social Categorization and the Process of Intergroup Bias

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Three studies tested the hypothesis that the use of words referring to in-group or out-group status (such as *us* or *them*) may unconsciously perpetuate intergroup biases. In Experiment 1, nonsense syllables unobtrusively paired with in-group designating pronouns (e.g., *we*) were rated as more pleasant than syllables paired with out-group designators (e.g., *they*). In Experiment 2, in-group and out-group designators presented briefly to Ss as masked primes were found to influence the time required for Ss to evaluate subsequently presented trait adjectives, even though Ss were unaware of the group-designating primes. In Experiment 3, the masked prime *we* facilitated S reaction times to positive person descriptors, as compared to the effects of the masked prime *they* and the masked control prime xxx. The pronoun *they*, however, did not significantly facilitate S decisions concerning negative person descriptors.

Several researchers have proposed that ethnocentrism and prejudice have their origins in the process of social categorization, when people subjectively classify others as members of their own group (in-group) or as members of another group (out-group; e.g., Allport, 1954; Hamilton & Trolie, 1986; Hogg & Abrams, 1988; Tajfel, 1969; Tajfel & Turner, 1986; Turner, 1985; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Wilder, 1986). People come to believe that in-group members (*us*) are more similar to them in ways other than the criterion used for categorization (Allen & Wilder, 1975; Brown & Abrams, 1986; Doise, 1978; Hogg & Turner, 1985). Perceivers also appear to view out-groups (*them*) as relatively less complex, less variable, and less individuated than are in-groups (Brigham & Barkowitz, 1978; Judd & Park, 1988; Linville & Jones, 1980; Park & Rothbart, 1982; Quattrone & Jones, 1980; Simon & Brown, 1987). The present research examined how common collective pronouns used to designate in-group or out-group membership (e.g., *us* or *them*) can play a role in the process of intergroup bias.

Social identity theory (see Tajfel & Turner, 1986) suggests that a basic need for positive self-esteem will induce perceivers

to favor their in-groups in most comparisons with out-groups; in addition, self-categorization theory (Turner et al., 1987) proposes that the attractiveness of an individual varies as a function of in-group or out-group membership and that, specifically, "self-categories tend to be evaluated positively" (p. 57). Indeed, consistent with these theoretical positions, in-group members are generally allocated more rewards (e.g., Tajfel, 1970; Wilder, 1986), are more likely to be helped (Piliavin, Dovidio, Gaertner, & Clark, 1981), and are believed to possess more positive attributes (Brewer, 1979; Gaertner, Mann, Murrell, & Dovidio, 1989) in relation to out-group members. It is less clear, however, whether these differences are primarily the product of out-group devaluation or of in-group enhancement. Brewer (1979) suggested that whereas in-groups are often evaluated in an exaggeratedly favorable manner, it is less common to find out-group derogation (see Gaertner et al., 1989); such devaluation has been observed in some studies, however (e.g., Holtz, 1989; Rosenbaum & Holtz, 1985).

Language is a major determinant of perceptions of the social world; names and labels applied to other persons subtly sculpt impressions of those persons in directions suggested by those labels (see Taylor, 1981). Because of their ability to imply the in-group or out-group status of people, collective pronouns such as *we*, *us*, and *ours* or *they*, *them*, and *theirs* are likely to be especially powerful influences in social cognition and perception. When these terms are used in reference to people, they are linked to one of the most basic decisions in person perception: the cognitive categorization of people into one's in-group or out-group (Allport, 1954; Brewer, 1979; Tajfel, 1970; Turner et al., 1987; Wilder, 1981).

Studies of associative learning (e.g., Das & Nanda, 1963; Di Vesta & Stover, 1962; A. W. Staats & Staats, 1958; C. K. Staats & Staats, 1957; Zanna, Kiesler, & Pilkonis, 1970) have demonstrated that when words are consistently paired with other stim-

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uli having strong affective characteristics or consequences, through classical conditioning these words will acquire strong evaluative properties of their own. Words referring to in-group categorization (*us, we, ours*) may therefore over time accumulate primarily positive connotations; out-group-referent words (such as *them, they, or theirs*) are, by comparison, more likely to accumulate less favorable connotations (Brewer, 1979) or even outright negative associations (Holtz, 1989; Rosenbaum & Holtz, 1985).

We further propose that because of their differentially conditioned associations, in-group and out-group pronouns (words such as *us* and *them*) may introduce evaluative biases automatically into the perception of even new and unfamiliar people. In automatic information processing, the mere presence of a stimulus activates a concept or response, even if the person attempts to ignore the stimulus (Shiffrin & Dumais, 1981). Some types of social judgments appear to be automatic, occurring spontaneously early in the process of encoding information about other people (e.g., Winter & Uleman, 1984; Winter, Uleman, & Cunniff, 1985); at times, these judgments seem to involve little effort, intention, awareness, or conscious control (see Bargh, 1984; Posner & Snyder, 1975; Shiffrin & Schneider, 1977). According to Fazio, Sanbonmatsu, Powell, and Kardes (1986), "The implication [of automatic processing] for attitudes is that upon presentation of an attitude object, an individual's attitude would be activated despite the lack of any reflection whatsoever on his or her part" (p. 229). Thus, simply using an in-group designator (e.g., *we*) in thought or speech to refer to a person may automatically establish a positive predisposition toward that person, whereas use of an out-group designator (e.g., *they*) may elicit a less positive or even a negative predisposition.

The present research, involving three experiments, investigated how in-group and out-group descriptors could systematically affect the way information was processed and how new evaluative associations were formed. Experiment 1 examined the mechanism of classical conditioning. In Experiment 1, which used a procedure adopted from A. W. Staats and Staats (1958) and C. K. Staats and Staats (1957), nonsense syllables were paired with in-group designators (e.g., *we*) and out-group designators (e.g., *they*) over a series of trials in a lexical decision task. In this task, subjects were presented with a pair of letter strings consisting of one word and one nonsense syllable and were then asked to indicate, by pressing a key, whether the real word was the left or the right member of the pair. At the end of the task, subjects rated the pleasantness of the nonsense syllables. Experiments 2 and 3 investigated the mechanism of semantic priming. Specifically, in Experiment 2, which used the procedure of Perdue and Gurtman (1990), in-group and out-group designators were presented briefly and then visually masked by positive or negative trait adjectives. The dependent measure was the latency to decide whether the trait was positive or negative. In Experiment 3, which used a method adapted from Dovidio, Evans, and Tyler (1986), in-group (*we*), out-group (*they*), and control (*xxx*) primes were masked on critical trials by the letter string *PPPPPP*, representing *persons*, and followed by a positive or negative characteristic (e.g., *good*). This study examined how long it took subjects to decide whether the positive or negative characteristic could ever describe a person.

Experiment 1

In Experiment 1, we proposed that through classical conditioning, in-group and out-group descriptors (e.g., *us* and *them*) could function to establish evaluative responses to novel, unfamiliar targets. The principles of higher order conditioning predict that if a word with emotional meaning "is paired a number of times with a neutral stimulus, like a nonsense syllable, the meaningless word will in the process come to elicit the meaning response" (A. W. Staats, 1968, p. 25). Words such as *us* or *them* used consistently and contiguously with names for novel groups or target persons may therefore produce classically conditioned affective responses to those names (and, by extension, those persons). Thus, merely encountering the word *us* in association with a group label or with the name of a group member may, with repetition, condition a positive predisposition toward that group or person—even if the person or group is novel or was previously evaluatively neutral. The word *them* co-occurring with the name of a group or person could establish many less positive associations (and perhaps even some negative responses) to that group or person.

It is well documented that once words have acquired the ability to evoke positive or negative affective responses (i.e., words such as *good* and *bad*), they can then act as higher order conditioning stimuli themselves. Pairing these words with other, affectively neutral words over time will eventually establish a positive or negative response to the previously neutral words as well (e.g., Das & Nanda, 1963; Di Vesta & Stover, 1962; A. W. Staats & Staats, 1958; C. K. Staats & Staats, 1957). For example, A. W. Staats and Staats conditioned evaluative responses to national labels (*Swedish, Dutch*) by pairing them with either positive words (*sacred, happy*) or negative words (*ugly, failure*). Semantic differential ratings of the nationalities were more evaluatively positive when they had been paired with the positive words. In a related study by the same researchers, a nonsense syllable (such as *xeh* or *yof*) was presented simultaneously with an actual word (such as *good* or *bad*) in the guise of an experiment supposedly focusing on the learning of word pairs. C. K. Staats and Staats found that a meaningless syllable was rated as more pleasant if it had been consistently paired with real words having positive connotations; conversely, pairing with real words having strong negative connotations eventually produced an unpleasant rating of a nonsense syllable.

In the present study, subjects were repeatedly exposed to pairings of collective pronouns and neutral (nonsense) syllables embedded in the context of a lexical decision task. (As in the earlier semantic conditioning studies of C. K. Staats and Staats, nonsense syllables with no a priori denotative or connotative meaning were chosen as target stimuli to better detect effects of the conditioning procedure.) Specifically, nonsense syllables were systematically paired over trials with in-group and out-group designators (e.g., *we* and *they*). On each trial, the subject was asked to indicate, by pressing a key, which of the two letter strings was an actual word. We predicted that subjects would develop, perhaps without conscious awareness, conditioned positive responses to a syllable when it was frequently accompanied by in-group designators (*us, we, ours*) or conditioned negative responses when it was paired with out-group designators

(*them, they, theirs*). These new associations should be reflected in the semantic differential ratings of pleasantness obtained for each syllable; ratings should be relatively more positive when the targets are paired consistently with in-group pronouns.

Method

Subjects. Twenty-three undergraduate students (17 women and 6 men) participated in the experiment in partial fulfillment of a requirement in their introductory psychology class.

Procedure. The procedure was modeled on the semantic conditioning and generalization studies of A. W. Staats and Staats (1958). Subjects were presented with 108 trials of apparently randomly paired letter strings on a computer cathode-ray tube CRT screen. Each pair of letter strings consisted of a nonsense syllable (*xeh, yof, laj, giw, wuh, or qug*) presented with either one of the in-group-designating pronouns (*us, we, or ours*), one of the out-group-designating pronouns (*them, they, or theirs*), or, on the control trials, one of eight other pronouns (*he, she, his, hers, me, you, mine, or yours*). The nonsense syllables were adopted from those used in one of the original A. W. Staats and Staats studies of semantic conditioning.

Subjects believed themselves to be engaged in a lexical decision task, purportedly gauging their verbal skills, in which they were required to indicate as quickly as possible which word of the presented pair was a real word. For one half of the subjects, presentations of the syllable *xeh* were controlled so that it always appeared on the screen with an in-group-designating pronoun (either *us, we, or ours*); 20 such displays were randomly interspersed throughout the other presentations. For that half of the subjects, conversely, the syllable *yof* was selectively paired on the screen with only out-group-designating pronouns (*them, they, or theirs*) for 20 interspersed presentations. To guard against the possibility that one syllable was intrinsically more pleasant than the other, this pattern was reversed for the other half of the subjects: *yof* was paired with in-group pronouns, and *xeh* with out-group pronouns. Pairings of the remaining pronouns and nonsense syllables were made randomly for each subject by computer.

After responding to the 108 trials, subjects were asked to rate each of the six nonsense syllables used in the study on a single semantic differential scale with endpoints of *pleasant* and *unpleasant*, an evaluation procedure adopted directly from C. K. Staats and Staats (1957). As a cover story, subjects were told that prior research had indicated that the perceived pleasantness of even a nonsense syllable could influence a person's ability to respond to it quickly. For each subject, then, a pleasantness rating was obtained for (a) the nonsense syllable (either *xeh* or *yof*, depending on the condition) that had been consistently paired with in-group pronouns, (b) the nonsense syllable (either *xeh* or *yof*, depending on the condition) that had been consistently paired with out-group pronouns, and (c) the four nonsense syllables (*qug, giw, wuh, and laj* for all subjects) that were randomly presented in combination with one of the other eight pronouns.

Pleasantness ratings of the six nonsense syllables were standardized (converted to scores with a mean of 0 and a standard deviation of 1.00) for each subject so that variability because of individual differences in scale usage (e.g., central tendency errors; see Guilford, 1954, pp. 263–301) might be minimized. Positive standard scores thus indicated above-average rated pleasantness, whereas negative standard scores indicated below-average estimates of pleasantness. Subject evaluations of the syllables that had co-occurred with in-group designators could then be compared with evaluations of those syllables paired consistently with out-group designators, as well as with the mean rating given the control syllables (*qug, giw, wuh, and laj*) paired with the other eight pronouns.

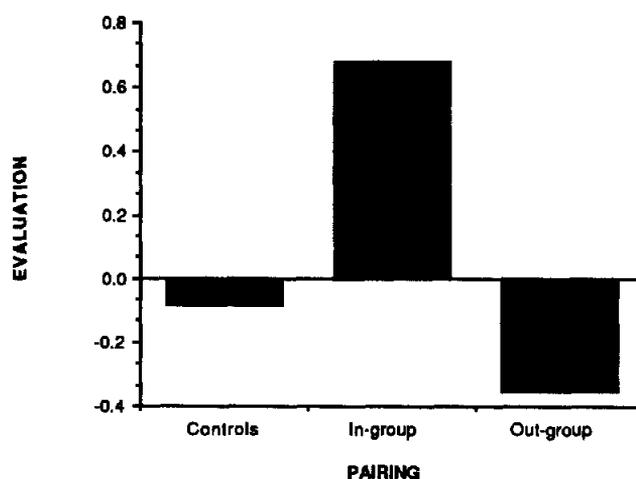


Figure 1. Standardized ratings of target syllables as a function of pronoun pairing. (Higher standardized ratings indicate more positive [pleasant] evaluations; the control evaluations consist of the mean standardized evaluation for the four syllables paired with non-group-designating pronouns.)

Results and Discussion

For each subject, the stimulus syllables were coded according to the type of pronouns with which they had been paired: in-group, out-group, or control. Standardized evaluations of the syllables were analyzed in a repeated measures analysis of variance (ANOVA) with pairing (in-group vs. out-group vs. control) as the single within-subject variable.¹ The perceived relative pleasantness of the target nonsense syllables proved to be significantly determined by the pronouns with which they had been associated, $F(2, 44) = 9.25, p < .0004$. Planned comparisons (using Fisher's least significant difference (LSD) method) confirmed that the syllables paired with in-group-designating pronouns tended to be rated as more pleasant ($M = .68$) than those paired with out-group designators ($M = -.35$), $t(44) = 5.06, p < .001$. Being paired with in-group pronouns significantly elevated the rated pleasantness of syllables in relation to the evaluations of the control syllables as well ($M = -.08$), $t(44) = 3.75, p < .001$. Pairing with out-group pronouns, however, did not cause target syllables to be rated as significantly less pleasant than the control syllables, $t(44) = 1.31, p < .20$ (see Figure 1).

When debriefed, subjects showed no awareness of the actual contingency between the selected nonsense syllables and the group-designating pronouns paired with them. At the experimenter's urging, a few subjects made guesses as to the patterns of co-occurrence during debriefing, but no subject correctly identified the association between group-designating pronouns and the selected nonsense syllables. In this instance, the co-occurrences of group-designating pronouns and nonsense

¹ No statistically significant effects were associated with subject sex in this study or in the second and third experiments. Consequently, subject sex has not been included as an independent variable in the analyses that are reported.

syllables were not obvious enough to enable subjects to articulate the contingency between them, making it unlikely that demand characteristics significantly influenced their later ratings of the syllables (cf. Page, 1969; see also Kimble, 1962, A. W. Staats, 1969, and Worthington, 1966).

In general, in-group-designating pronouns appeared to possess strongly positive evaluative and affective associations as gauged against a set of control nonsense syllables, whereas out-group-designating words were relatively less likely to elicit such positive responses. In-group words demonstrated the potential to imbue neutral stimuli with positive connotation by simply being concurrently presented. Association with out-group pronouns generated relatively negative responses when compared to in-group pronouns but yielded no statistically significant devaluation of associated stimuli when compared to control evaluations.

Experiment 2

Whereas Experiment 1 investigated classical conditioning of evaluative responses, Experiment 2 examined the hypothesis that exposure to in-group and out-group designators (e.g., *us* and *them*) could bias the processing of any subsequently encountered information because of the effects of semantic priming (see Meyer & Schvaneveldt, 1971). Systematic activation of positive or negative characteristics has been demonstrated with specific ethnic group labels, such as the words *Black* and *White*, in lexical decision tasks (Gaertner & McLaughlin, 1983) and in a modified semantic priming paradigm (Dovidio et al., 1986). Dovidio et al., for example, found that White subjects processed negative trait information more quickly after exposure to the prime *Black* than after the prime *White* and positive information more quickly after exposure to the prime *White* than after the prime *Black*.

Experiment 2 used a masked priming procedure. In this masked priming paradigm, priming words are presented only very briefly before being obscured or masked by a second word; subjects only consciously perceive the latter stimulus, yet their responses to it may be facilitated if it is semantically related to the initial masked prime (e.g., Marcel, 1983). Specifically, in-group and out-group designators were presented briefly on a computer screen and then masked by positive or negative trait adjectives in such a way that the subjects had no conscious awareness of the presentation of the designators (see Perdue & Gurtman, 1990). Subjects were asked to decide as quickly as possible whether each trait adjective was positive or negative, with decision latencies as the dependent measures. The advantages of using essentially subliminal manipulations when studying bias or stereotyping are manifold: Practically, subject reactivity and possible demand characteristics are minimized; theoretically, this procedure enables the separation of automatic from controlled information processing (Bargh & Pietromonaco, 1982; Devine, 1989; Posner & Snyder, 1975).

Priming words presented outside of awareness have been demonstrated to temporarily increase the cognitive accessibility of semantically related constructs for the perceiver (Fowler, Wolford, Slade, & Tassinari, 1981). Furthermore, trait descriptors presented too quickly to be consciously perceived can still influence subsequent person perception (Smith, Spence, &

Klein, 1958). More recently, this nonconscious priming effect was demonstrated in a study by Bargh and Pietromonaco (1982) in which subjects were asked to identify the location of stimuli on a computer screen. In this supposed vigilance task, the stimuli were actually words presented in the parafoveal visual field too rapidly for conscious identification. Despite the inability of subjects to identify these words, the proportion of hostility-related terms presented was found to directly affect the subject's perceptions of a subsequently introduced stimulus person. Experiments using similar strategies have replicated this effect with primes related to honesty and meanness (Erdley & D'Agostino, 1988) as well as racial stereotypes (Devine, 1989). In a paradigm more directly analogous to that used in our present study, nonconscious priming effects on construct accessibility were obtained in a study of culturally conditioned "ageism," in which the labels *young* and *old* were used as priming stimuli: College-age subjects made faster decisions about positive traits after subliminal exposure to the prime *young* and displayed faster responses to negative traits after being subliminally primed by the term *old* (Perdue & Gurtman, 1990).

In the present experiment, we hypothesized that priming with in-group and out-group designators would automatically activate other highly associated constructs in memory (Collins & Loftus, 1975; Devine, 1989; Fazio et al., 1986; Foss, 1982; Neely, 1977; Perdue & Gurtman, 1990). For example, Fazio et al. found that attitude objects with strong evaluative associations automatically facilitated responses to similarly valenced (positive or negative) target adjectives. If in-group-referent terms (e.g., *ours*) elicit more evaluatively positive associates, then the effect of such prior activation should be to prime subsequently encountered positive constructs, facilitating response times to positive trait information in relation to those for negative trait information. That is, we predicted that subjects would recognize and categorize positive traits more quickly when they followed in-group designators than when they followed out-group designators. This priming of positive traits should be attenuated (Brewer, 1979), and perhaps negative traits should be actively primed (Holtz, 1989; Rosenbaum & Holtz, 1985), following the initial presentation of an out-group pronoun. Thus, we also expected that when perceivers were primed with out-group pronouns, they would respond relatively faster to negative words. A Prime Type \times Trait Evaluation interaction was therefore anticipated.

Method

Subjects. Thirty undergraduate students (17 women and 13 men) participated in the experiment in partial fulfillment of a research requirement in their introductory psychology class.

Procedure. The cover story given the subjects was that they were participating in a study of verbal skills in which the ability to quickly recognize and evaluate various trait descriptors was the topic of interest. Each subject was asked to evaluate 36 trait adjectives, randomly ordered for each subject and presented sequentially on a microcomputer display screen. Specifically, subjects were asked to decide whether each trait was essentially positive or negative in connotation (i.e., "was overall a 'good' or 'bad' trait for someone to possess") and to indicate their choice by pressing an appropriately labeled key. Each trait remained on the computer screen until the subject made this decision. Eighteen evaluatively positive trait adjectives and 18 negative

adjectives were taken from Anderson's (1968) list of personality descriptors and their associated "likeableness" ratings (see Perdue & Gurtman, 1990). The positive adjectives used were *helpful, clever, tolerant, observant, skillful, competent, obedient, persuasive, inquisitive, careful, thrifty, systematic, sentimental, courteous, studious, entertaining, logical, and practical*. The negative adjectives used were *disagreeable, prejudiced, conforming, chummy, sarcastic, possessive, wasteful, inconsistent, impolite, touchy, gullible, irresponsible, forgetful, indecisive, envious, stubborn, sloppy, and irritable*. The key labeled *good* was on the left side of the keyboard, approximately 10 in. from the key labeled *bad* on the right side. Subjects were informed that their responses and reaction times (RTs) for each decision would be recorded by the computer.

One of six in-group or out-group designators (*us, we, ours, them, they, theirs*) was randomly selected and presented as a prime immediately prior to each target trait on the computer display. The group designator words were presented for only 55 ms before being overwritten on the CRT screen (masked) by one of the target trait adjectives; the short exposure duration was intended to prevent conscious recognition of the priming word. The procedure was the same one used in Perdue and Gurtman's (1990) study of the automaticity of ageism; it was essentially a modified version of the visual masking technique introduced by Marcel (1983) to demonstrate nonconscious semantic priming effects on lexical decisions. Although exposure durations as long as 100 ms have been demonstrated to produce priming effects outside of awareness when the stimuli are presented parafoveally (Bargh & Pietromonaco, 1982), shorter (55-ms) priming exposures were chosen for our study (as in Perdue & Gurtman, 1990) because the stimuli were presented in the center of the subject's visual field. Additionally, terminating exposure of the initial prime by the onset of the subsequent target traits themselves (meaningful, salient stimuli, not merely random letter strings or patterns) increased the probability that subjects would rapidly allocate attention to the second stimulus, thus potentiating the masking effect.

Deciding whether a stimulus is truly subliminal has long been problematic (see Cheesman & Merikle, 1986; Dixon, 1971; Holender, 1986), but sophisticated strategies for assessing awareness of our priming stimuli were not used in this first investigation. For the purposes of this study, if subjects failed to report detection of the initial priming word during the procedure and denied any awareness of it during later questioning, the prime was assumed to have been subjected to very little intentional, effortful, or controlled processing. Any influence on information processing produced by these stimuli was thus considered an automatic effect (see Klatsky, 1984, for a discussion of awareness and automaticity). In pretesting, even perceivers who were instructed to look for the priming words could not report their content. Perceivers expecting only the supraliminal target trait words, such as the subjects in our study, claimed in debriefing to have been totally unaware of the priming words. In addition, no subject in Experiment 2 reported being aware of the in-group or out-group primes being displayed at all, even when prompted afterwards to report any unusual, unclear, or unexpected features of the trait presentations. It seemed apparent from the debriefings that subjects believed themselves to be responding to the trait adjectives only. Because subjects only perceived the trait adjectives, and not the pronoun primes, the need for a cover story explaining the presence of the priming words was eliminated.

Results and Discussion

Subject evaluations of the presented traits, as indicated by the key pressed, were generally quite consistent with the a priori classification of the adjectives (as positive or negative) that was based on Anderson's (1968) ratings. Of the 36 trait adjectives evaluated by each subject, an average of 3.86 were classified as positive or negative in a manner that was inconsistent with their

initial experimental designation. Although these discrepancies could be interpreted as errors, it was equally likely that they reflected valid but idiosyncratic evaluations of those traits.² In consideration of this, in the analyses reported next, it is the positive or negative evaluation of the trait by the subject that constituted the trait evaluation variable.

Subject RTs for trait judgments were analyzed in a 2×2 repeated measures ANOVA with prime type (in-group vs. out-group designator) and trait evaluation (positive vs. negative) as within-subject variables. Prime type by itself did not significantly influence subject RTs, $F(1, 29) = 0.02, p < .90$. There was, however, a main effect of trait evaluation on subject RTs; target traits with positive connotations for the subject were apparently more accessible (mean RT = 1,063.97 ms) than were negatively evaluated traits (mean RT = 1,121.79 ms), $F(1, 29) = 6.15, p < .02$.

The predicted interaction between the type of designator used as a prime and the evaluative character of the target trait adjective was found to be significant, $F(1, 29) = 12.32, p < .001$ (see Figure 2). Planned comparisons (using Fisher's LSD multiple comparison procedure) revealed that subjects were able to make decisions concerning positive traits more swiftly after exposure to the masked words *us, we, and ours* than after being primed by the words *them, they, and theirs*, $t(29) = 2.34, p < .03$ (mean RT = 1,020.06 ms and 1,108.19 ms respectively). Conversely, traits with negative connotations were processed more quickly when preceded by out-group designators than when primed by in-group designators: $t(29) = 2.62, p < .02$ (mean RT = 1,069.73 ms and 1,174.26 ms, respectively). The pattern of decision latencies appears to reflect a significantly enhanced access to positive trait information (in relation to negative information) subsequent to the presentation of in-group-related words: $t(29) = 3.97, p < .001$. Out-group-related priming, however, produced no significant difference in subject RTs to positive or negative material, $t(29) < 1$.

The results of this study indicate that in-group- and out-group-designating pronouns at least transiently influence social information processing by altering the relative accessibility of constructs with similar evaluative connotations. Such differential construct accessibility has been determined in a number of studies to influence person perception (see Higgins & King, 1981); categories recently activated in the perceiver's cognitive system are more likely to be used when describing a target person (e.g., Bargh & Pietromonaco, 1982; Erdley & D'Agostino, 1988; Higgins, Rholes, & Jones, 1977; Srull & Wyer, 1979). Be-

² To determine if these errors of evaluation might be influenced by the effects of the priming stimuli, they were analyzed as the dependent variable in a 2×2 repeated measures analysis of variance with prime type (in-group vs. out-group designator) and trait evaluation (positive vs. negative) as within-subjects variables. Error rates were not affected by the priming stimuli at all; the Prime Type – Trait Evaluation interaction did not approach significance ($p < .84$). The only (marginally) significant difference in error rate was observed between positive traits and negative traits: Subjects made an average of 2.46 misclassifications when evaluating negative adjectives but made only 1.40 misclassifications on average when responding to positive adjectives, $F(1, 29) = 3.96, p < .056$. Subjects seemed to give negative traits the benefit of the doubt more often than they derogated positive traits.

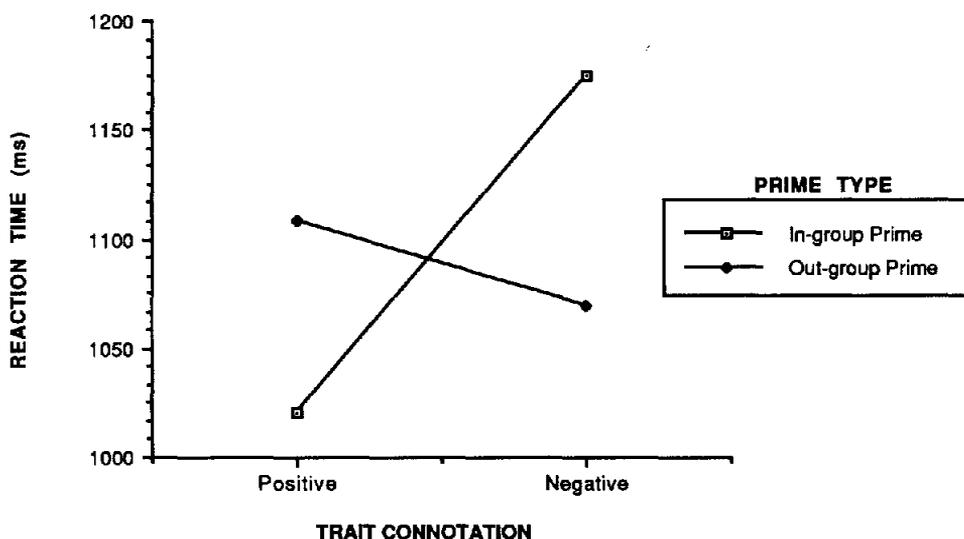


Figure 2. Reaction times to positive- and negative-trait descriptors as a function of prime type (in-group pronoun versus out-group pronoun).

cause the use of in-group or out-group designators has been found to influence the relative accessibility of positive and negative constructs, it would then follow that the process of impression formation would be similarly affected. Use of an in-group-indicative term such as *we* to describe a target person could thus positively bias the constructs used to construe that person.

Note that the differential activation of evaluative constructs by these words was an effectively automatic process in the sense that it was achieved without awareness of the priming stimuli. Automatic cognitive processes have been defined as those that are not effortful, intentional, or consciously controlled by the perceiver (e.g., Bargh, 1984; Shiffrin & Schneider, 1977). In the context of normal language use, then, people might not be conscious of the evaluative or affective associations elicited by group-designating terms or of the effects that these designators might have on person perception; to consciously inhibit such an automatic response may even be difficult.

Experiment 3

Although Experiment 2 demonstrated that in-group- and out-group-designating terms influenced the relative accessibility of positive and negative constructs, it remains unclear whether in-group designators facilitate positive associations or inhibit negative associations, whether out-group designators facilitate negative associations or inhibit positive associations, or whether some combination of these effects occurs. Thus, Experiment 3 was designed to examine the automatic effects of an in-group designator and an out-group designator in relation to that of a no-prime baseline condition, in which the target trait words were preceded by a semantically null control string (*xxx*) (see Fazio et al., 1986).

In Experiment 3, as in Experiment 2, subjects were required to make decisions concerning positive and negative adjectives after the presentation of a masked priming stimulus. The subject's task, however, was quite different. In this study, two

group-related primes were selected (*we* and *they*) as well as a neutral control string (*xxx*). Additionally, using a procedure modeled after Dovidio et al. (1986), we cued subjects, following the masked prime, to think about a specific category of targets (either persons or houses) and then asked them to decide if the subsequently presented word could be used to describe members of that category. The responses of interest in this study were the subject's decision times for relating positive and negative traits to people as a function of the type of prime used (in-group designator, out-group designator, or control string). The house primes and the use of words that could describe houses but not people (e.g., *drafty*) were used to ensure that the correct answer was not always yes.

Method

Subjects. Thirty-two (17 men and 15 women) undergraduate students participated in this study in partial fulfillment of their introductory psychology course requirements.

Procedure. The procedure for Experiment 3 combined the method used by Dovidio et al. (1986), who studied evaluative associations of racial categories, with the method of Bargh and Pietromonaco (1982), who investigated nonconscious influences on impression formation. Specifically, as in Dovidio et al. (1986), subjects were informed that the study examined "how quickly and accurately people categorize objects and persons." They were told that either the string *PPPPPP*, which represented the category *person*, or *HHHHHH*, which symbolized the category *house*, would be presented on a computer screen and followed by an adjective.

As in Dovidio et al. (1986), the responses to the person category were of primary theoretical interest; the house category was used as a type of control condition so that subjects would not always respond affirmatively following the test words. The adjectives of central importance for the present research were three positive characteristics (good, kind, and trustworthy) and three negative characteristics (bad, cruel, and untrustworthy), which have previously been found in impression formation research to load on an evaluative factor (Dovidio & Gaertner, 1981, 1983). On Anderson's (1968) list of 0–6 likability ratings, the

mean rating was 5.39 for trustworthy, 5.20 for kind, 4.80 for good, 0.65 for untrustworthy, and 0.40 for cruel. The term *bad* was not included on Anderson's list.

Pilot research also demonstrated that these test words are commonly judged (i.e., with over 95% agreement) to be reasonable descriptors of a person, whereas the other six test words used (e.g., *roomy*) do not commonly describe a person (see Dovidio et al., 1986). Subjects were then asked to indicate, by pressing the appropriate key, whether the adjective trait (e.g., *trustworthy*) could ever be true of the category (e.g., *person*). This task was originally developed so that the appropriate, or correct, response to all person-descriptive words following the P P P P P (person) prime would be yes. To maintain active decision making among subjects, some of the test words (e.g., *cruel*) described people but not houses; other test words (e.g., *drafty*) described houses but not people; and still other test words (e.g., *good*) described either people or houses.

Incorporated into this method were procedures, adapted from Bargh and Pietromonaco (1982) and subsequently used by Erdley and D'Agostino (1988) and Devine (1989), for nonconscious priming using an in-group designator (*we*) and an out-group designator (*they*). In particular, the words *we* or *they* or the control prime xxx preceded the person category, P P P P P. (For the house category, H H H H H, the primes *brick*, *wooden*, and *xxx* were used.) As Devine noted, because nonconscious priming procedures allow the activation of a category without conscious identification of the prime, the effects of automatic processes can be studied independently of controlled processes.

As in Bargh and Pietromonaco (1982), the subject's chair was located at a fixed distance from the CRT, where the stimuli were presented. The distance from the subject's eyes to the center of the CRT screen, where the fixation point (*) was situated, was 56 cm so that the stimuli would be presented outside of the subject's foveal visual field. For the critical trials, the in-group designator (*we*), out-group designator (*they*), or the control prime (xxx) was presented for 75 ms at a location on the screen so that the center of the word was 3.6 cm from the fixation point. This prime was immediately followed in the same location by P P P P P, representing the category *person*, which was presented for 250 ms and visually masked the initial prime. Then, after a 250-ms delay, the test word appeared for 250 ms in the same location on the screen. The subject's task was then to decide whether the test word could ever describe a member of that category, a person. The interstimulus interval was 2–7 s. The same basic procedure was used for the control trials involving the H H H H H (house) prime. Sequentially, then, subjects were (a) initially presented with the prime *we*, *they*, or *xxx* (for person trials) or *brick*, *wooden*, or *xxx* (for house trials), (b) given a target category cue, P P P P P for a person or H H H H H for a house, (c) presented with a positive or negative person-descriptive test word or a word that did not commonly describe a person (e.g., *drafty*), and (d) asked if the test word could ever describe a member of the cued category (i.e., a person or a house).

Each combination of initial prime (e.g., *we* or *brick*), cued category (i.e., P P P P P or H H H H H), and test word (e.g., *kind* or *drafty*) appeared once to the left of the fixation point and once to the right of the fixation point. Thus, the main experiment consisted of 120 trials in one of two random arrangements. (Subjects also received 24 practice trials using the categories B B B B B, for boat and M M M M M for man and test words that were not used in the main study). For the conditions involving the person category, on half of the trials, the correct response to the test word was yes. The locations of the yes and no keys were counterbalanced across subjects. The dependent measures were the accuracy of the response and the average RT to the two pairings of each initial prime–category–test word combinations. For the primary analyses, the average RTs for positive and negative person-descriptive words were computed separately. An error was scored if the subject gave a no response to one of the person-descriptive test words following the P P P P P

cue or if, after seeing the P P P P P cue, the subject gave a yes response to a test word that did not commonly describe a person.

In this study, additional procedures were introduced to determine more precisely whether the conditions for demonstrating automatic activation through attentionless processes (Greenwald, Klinger, & Liu, 1989) were met; subjects in this experiment were probed in greater detail during debriefing about the content of the masked primes (e.g., *we*). Attentionless processing involves stimuli that are detectable but that cannot be recalled. First, subjects were asked to recall, in writing, the procedure of the study, including listing as many stimuli as they could. No subject listed any of the initial primes among the stimuli. Second, subjects were informed that words did in fact appear on the screen immediately before the cued category. Subjects were asked to recall these words; if subjects responded that they could not recall the words, they were asked to guess. Only two subjects correctly identified a prime: One subject identified *brick* and the other identified *xxx*. Neither subject, however, was aware of the range of primes presented or of the fact that they were presented repeatedly.

To further ensure that our procedure produced conditions that were similar to those in previous studies of this type, a pilot guessing study (see Bargh & Pietromonaco, 1982) was conducted in which 10 subjects were run through a 40-trial procedure similar to that of the main experiment but were asked on each trial to guess what the initial prime was. The primes used in this pilot study consisted of the 5 primes used in the main experiment, the words *black* and *white*, and 13 of the primes used by Bargh and Pietromonaco, each presented twice. Comparable to the rates obtained by Bargh and Pietromonaco and Devine (1989), only 7 of the 400 guesses (1.75%) were correct. The rate of correct guesses for the 5 primes used in our main study was comparable, at 2%. These data suggest that subjects were generally unable to identify the content of the initial primes during encoding, thus satisfying a criterion for attentionless, thus automatic, processing.

Results and Discussion

The overall error rate in this study was 4.5%, comparable to that obtained by Dovidio et al. (1986) using a similar task. The percentage of no answers in response to person-descriptive test words that followed the person cue (P P P P P) was 2.9%. These errors were not a function of the independent variables. A 3 (prime: *we*, *they*, *xxx*) \times 2 (trait connotation: positive, negative) ANOVA performed on these error rates revealed no main effects or interaction. The percentage of times that subjects inappropriately gave a yes response to words that did not describe people was 6.2%. This rate did not differ as a function of prime.

Subjects' RTs were analyzed as the dependent variable in a 3 (prime) \times 2 (trait connotation) repeated measures ANOVA.³ There was a significant main effect for trait connotation, with positive traits being responded to more quickly (mean RT = 786.97 ms) than negative traits (mean RT = 885.97 ms), $F(1, 31) = 26.83$, $p < .0001$. There was no significant overall effect for prime, $F(2, 62) < 1$.

As in Experiment 2, the Prime \times Trait Connotation interaction was significant, $F(2, 62) = 4.34$, $p < .02$ (see Figure 3). Additional tests using Fisher's LSD procedure, comparing the effects of the *we* and the *they* primes, demonstrated that RTs for

³ Preliminary analyses revealed no significant effects associated with presentation order or subject sex. Consequently, these independent variables were not included in the analysis of variance reported here.

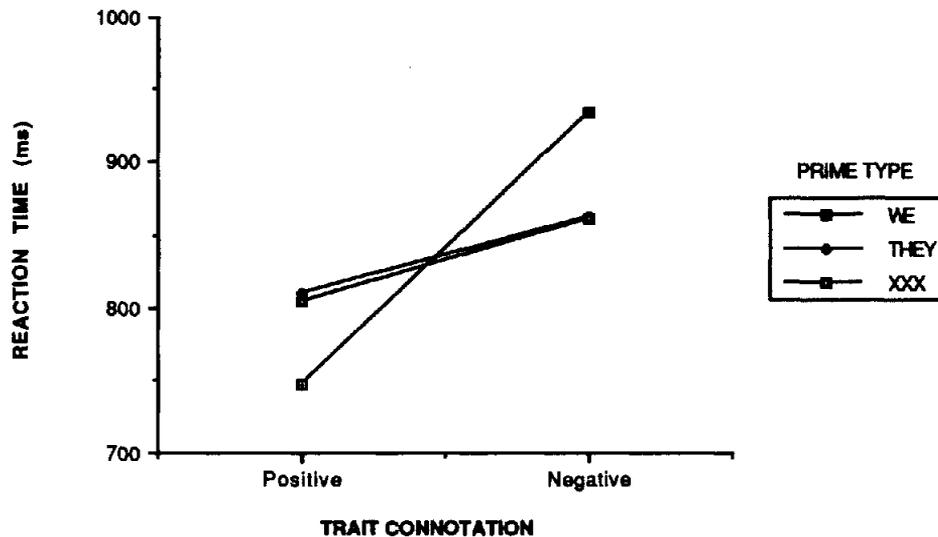


Figure 3. Reaction times to positive and negative trait descriptors as a function of prime type: we, they, or xxx.

positive traits were faster following the *we* prime than following the *they* prime (mean RTs = 747.10 ms vs. 809.53 ms), $t(31) = 2.45$, $p < .02$. For negative traits, RTs were somewhat, but not significantly, faster following the *they* than following the *we* prime (mean RTs = 861.93 ms vs. 934.61 ms), $t(31) = 1.44$, $p < .16$. In addition, as seen in Figure 3, RTs following the control (xxx) prime closely tracked the responses following the *they* prime (RTs = 804.27 ms for positive traits and 861.44 ms for negative traits). In general, then, the masked presentation of the prime *we* compared to the control prime xxx facilitated decisions concerning positive descriptors and somewhat inhibited decisions concerning negative descriptors.⁴

As in Experiment 2, an in-group-designating word (*we*) presented outside the perceiver's conscious awareness facilitated access to positive constructs in semantic memory in relation to the effects of an out-group-designating word (*they*). A critical, additional finding in Experiment 3 was that the effects of an out-group-designating prime were not substantially different from those produced by a simple string of letters (xxx) in the control condition. This finding suggests that the out-group prime was not actively promoting negative construct accessibility but instead that it was more neutral in priming consequences than was the in-group designator. This interpretation is consistent with Brewer's (1979) conclusion that intergroup biases, at least in the minimal intergroup situation, are more a product of in-group favoritism than of out-group devaluation. In this view, out-groups are only relatively derogated, devalued only in contrast to the enhancement of the in-group and not in relation to undifferentiated (i.e., uncategorized) others.

General Discussion

Epidemiologists who study the spread of communicable diseases commonly refer to agents that carry and distribute microorganisms (e.g., insects, animals, and food) as "vectors" for the transmission of that disease. In an analogous fashion, in-group-

and out-group-associated words may function as linguistic vectors that establish an evaluative predisposition toward targets previously uninfected by prejudice. Thoughts and speech concerning in-groups and out-groups are rarely evaluatively neutral (see Brewer, 1979; Tajfel & Turner, 1986); over a period of time, even common parts of speech used in reference to these groups may cease to be evaluatively neutral as well. These words and their acquired evaluative connotations are then likely, along with other factors, to mediate judgments and conceptions of others in subtle ways—perhaps by the processes (semantic priming and higher order semantic conditioning) implicated in these studies. Our three experiments indicated that this type of mediation is possible; *us* and *them*, together with other collective pronouns, may perpetuate and possibly transfer in-group-related biases to evaluations of other people.⁵

Experiment 1 demonstrated that the mere co-occurrence of

⁴ Fazio, Sanbonmatsu, Powell, and Kardes (1986) noted that there is considerable discussion in the cognitive literature about the appropriate use of stimuli for baseline priming trials. In an observation that is relevant to our investigation, Fazio et al. (1986) acknowledge, "In recognition of this difficulty, we use these terms [facilitation and inhibition] in a relative sense. . . . Facilitation refers to faster responding to a target word when it is preceded by a prime than when it is preceded by a letter string, and inhibition refers to slower responding" (p. 233). Fazio et al. (1986) further argue that letter strings may involve a lesser memory load than do attitude objects, thus overestimating the true baseline and underestimating the facilitation effect.

⁵ It is not clear from these studies whether group-designating words have a special status or priming ability beyond that afforded by their affective associations; that is to say, presentation of the word *good* may facilitate judgments of positive traits to the same or greater degree than of words such as *us*, *we*, and *ours*. Indeed, previous studies of semantic conditioning, semantic priming, and automatic attitude activation (e.g., Erdley & D'Agostino, 1988; Fazio et al., 1986; A. W. Staats, 1968) would suggest that many verbal stimuli with strong affective valences should produce such spreading activation phenomena.

these group-designating words with previously neutral stimuli is sufficient to bias affective responses towards those stimuli. Referring in speech or thought to their actions versus our actions or what we believe versus what they believe may establish different evaluative predispositions toward those actions and beliefs by a simple process of classical conditioning. In-group designators produced positive responses: In relation to control syllables, target syllables paired with in-group pronouns were evaluated as more pleasant. Syllables paired with out-group designators, although evaluated as more unpleasant than in-group-paired syllables, failed to generate evaluations significantly more negative than those given control syllables.

The results from Experiment 2 indicated that exposure to words such as *us* and *them* may bias the retrieval of evaluatively congruent material from semantic memory, in an automatic process apparently outside the awareness of the perceiver. Positive traits were made more accessible (in relation to negative traits) by in-group-designating words; negative traits seemed to be comparatively more accessible after exposure to an out-group-designating word. Because the current accessibility of a construct has consistently been found to partially determine the extent to which it is used to construe other people, in-group-associated words may bias person perception by facilitating access to greater numbers of positive constructs, which then become more likely to be used in encoding the behavior of a target person (e.g., Bargh & Pietromonaco, 1982; Higgins & King, 1981; Srull & Wyer, 1979; Wyer & Srull, 1981).

Experiment 3 demonstrated the same effect in a different type of cognitive task that included comparisons to a baseline control condition as well as more extensive methods for assessing subject awareness of the priming words. The results of these procedures verified that the influence of the group-related primes was automatic, occurring without awareness on the part of the perceiver. The control primes used in Experiment 3 allowed comparisons that indicated that whereas in-group pronouns activated more positive semantic associates in relation to a neutral prime, out-group pronouns did not. Thus, in two distinct paradigms (semantic conditioning and semantic priming) that included baseline control groups, support was generated for the position that intergroup discrimination, at least in minimal intergroup situations, is predominantly the result of in-group enhancement (positive semantic generalization from in-group pronouns) rather than out-group derogation (negative semantic generalization from out-group pronouns; Brewer, 1979; Gaertner et al., 1989; Gaertner & McLaughlin, 1983). This finding supports Turner's (1975) conclusion that intergroup differentiation may often result from social identity processes (e.g., social competition) rather than from realistic group conflict (see Sherif, Harvey, White, Hood, & Sherif, 1961). In particular, Turner (1975) argued that realistic group conflict theory predicted that out-group devaluation would occur during intergroup competition, particularly when the in-group loses; thus he proposed that any instance of intergroup bias without out-group devaluation was evidence against a realistic group conflict theory of ethnocentrism. Although our study was not designed as a test of social identity versus realistic group conflict theories, it does provide further evidence of intergroup differentiation that does not necessarily involve out-group derogation.

The present research demonstrated that in-group- and out-group-designating pronouns possess different evaluative valences and, as a consequence, may differentially facilitate automatic responses to positive and negative information. However, our studies do not conclusively identify the mechanisms by which these pronouns may have originally acquired their evaluative connotations. For example, these experiments do not demonstrate whether it is the in-group and out-group terms themselves or whether it is the cognitively represented social entities that they signify that are the source of these attitudinal biases. In studies of the minimal group categorization effect (Tajfel, 1970), it is possible to create group distinctions, hence group labels (e.g., *overestimators* and *underestimators*), that are unrelated to existing social schemata. In contrast, studies of automatic reactions rely on strong attitude-object associations (Fazio et al., 1986), and because of their common meanings, to separate the effects of the collective pronouns from the groups they represent may not be possible. Indeed, to the extent that the effects of in-group and out-group pronouns are tied to cognitively represented social entities, the use of these terms could transform a nonsocial, or interpersonal, situation into one involving group-level identities (Turner et al., 1987). As Turner et al.'s (1987) self-categorization theory proposes, the impact of in-group- and out-group-designating terms may depend substantially on the social category associated with *us*, which could vary across situations.

Alternatively, the effects observed in the present research may not be intergroup effects per se but, rather, interpersonal in origin. In English, the pronouns *us*, *we*, and *ours* are almost exclusively used to refer to social entities involving the self and thus implicate the perceiver's self-schema in the processing of information regarding these entities. Because an extensive literature has documented the generally favorable content of the typical self-concept (e.g., Alicke, 1985; Greenwald, 1980; Lewicki, 1983; Paulhus & Levitt, 1987), priming with any first-person pronoun (singular or collective) would be sufficient to facilitate responses to positive attributes in relation to any pronoun signifying others. (This would not, however, alter the main result of these studies: Regardless of the origins of their differential evaluative valences, parts of speech that are commonly used to designate in-group and out-group membership status can be demonstrated to generate further evaluative biases by means of simple, contiguous association and by automatic influences on semantic memory)

Although the present investigation was not designed to resolve this issue, a closer examination of the results from the semantic conditioning procedures in Experiment 1 suggests that self-referential biases are unlikely to be the sole explanation for the differences in connotation observed between in-group- and out-group-referent pronouns. Presumably, if a pronoun's degree of self-reference is the primary attribute determining the extent to which it produces evaluative biases, one would expect to observe greater effects from directly self-referent (first-person singular) pronouns such as *me* and *mine* than from more indirectly self-descriptive terms such as *us* or *ours*. In Experiment 1, however, which included such first-person singular pronouns in a set of control pronouns paired with nonsense syllables, the standardized evaluations of syllables paired with the terms *me* and *mine* averaged only .29, but the mean

evaluation of syllables paired with terms such as *us* and *ours* was .68 (higher values indicating more positive evaluations). Not only did subjects fail to evaluate the syllables associated with *me* and *mine* more positively than those paired with *us* and *ours*, but the reverse actually seemed to be the case—although the difference did not achieve significance, $F(1, 22) = 2.42, p < .13$.

Experiment 1 also yielded a supplemental 2 (self-referent vs. other-referent) \times 2 (singular vs. collective) ANOVA, performed on the pleasantness ratings of syllables paired with the pronouns *me* and *mine* (self, singular), *you* and *yours* (other, singular), *us* and *ours* (self, collective) and *them* and *theirs* (other, collective). The interaction of self-reference versus other reference and singular versus collective pronouns was significant, $F(1, 22) = 5.04, p < .035$, suggesting that collective pronouns (i.e., *us*, *them*) differed from singular pronouns (i.e., *me*, *you*) in their effect on evaluative associations. For collective pronouns, the difference between in-group (*us*) and out-group (*them*) terms was significant ($M_s = .68$ and $-.35$ respectively), $t(22) = 4.38, p < .001$, whereas evaluative associations were not significantly different for syllables paired with singular pronouns that were merely self-referent (*me*) vs. other referent (*you*) ($M_s = .29$ and $.19$, respectively), $t(22) = .40, p < .69$. Thus, although self-referent biases may have some role in generating more positive affect for in-groups (*we*) than for out-groups (*they*; e.g., Crocker & Schwartz, 1985), it may be possible to separate intergroup from interpersonal effects (Turner et al., 1987). For instance, self-schemata should moderate effects at the individual level (e.g., Markus, 1977; Markus, Smith, & Moreland, 1985), whereas collective schemata should moderate effects at the group level (e.g., Crocker & Luhtanen, 1990).

In summary, our research is part of an emerging trend in studies of intergroup phenomena (e.g., Devine, 1989; Dovidio et al., 1986; Gaertner & McLaughlin, 1983; Perdue & Gurtman, 1990) toward specification of the more covert and automatic components of biases in group perception. Furthermore, our findings suggest that in-group- and out-group-referent terms (such as *we* and *they*) can subtly shape evaluative responses toward others. This influence may occur cognitively: Traits that are more easily or quickly accessed in memory are more likely to be used to form impressions of others (Higgins & King, 1981; Wyer & Srull, 1981). The influence may also be mediated by classical conditioning of evaluative or affective associations. Furthermore, because in-group favoritism is often not discouraged (and may, in fact, often be encouraged; see Tajfel, 1970), the conscious, inhibiting processes that may be activated for racial bias by people who have a self-image of being nonprejudiced (Devine, 1989) may not be activated to counteract in-group-out-group bias. Thus, in-group bias may operate more openly and widely than even racial bias.

We believe that the present studies also illustrate the usefulness of alternative methodologies for investigating intergroup bias. In particular, these methodologies may provide less reactive tasks than do traditional approaches to the measurement of attitudes associated with established in-group and out-group terms.⁶ Many previous investigations of biases in group perception have used highly salient, overt manipulations of the perceiver's group identity, attempting to clearly establish social categories or consciously activate group-relevant schemas in the mind of the subject. On the basis of findings regarding the

effects of mere exposure to group-related terms, perhaps it may be possible to bring intergroup biases under a more subtle and less reactive form of stimulus control, such as that demonstrated in studies of instrumental verbal conditioning. For example, previous researchers (e.g., O'Brien & Holborn, 1979; Tafel, 1955) have been able to influence the likelihood of a subject's using specific personal pronouns in conversation (such as beginning sentences with *I*) by verbally reinforcing their use. Perhaps this technique could be adapted to manipulate the relative use of in-group- or out-group-designating pronouns by subjects. Reinforcing subjects for using the term *we* more inclusively (to include both original in-group members as well as persons who would otherwise be categorized as out-group members) may subtly and automatically enhance their attitudes toward these former out-group members. Gaertner et al. (1989), for example, demonstrated that factors that induced the memberships of two groups to conceive of the total aggregate as one group, rather than as separate entities, increased the attractiveness of former out-group members. The results of the current three experiments suggest that one process by which a one-group representation functionally reduces intergroup bias is to change the verbal referents used when thinking of these former out-group members. Conceiving of "them" as "us" can thereby harness influences such as semantic priming and classical conditioning, which have been demonstrated in the current research.

⁶ The usefulness of any methodology is, of course, related to the hypotheses under consideration and the conclusions that the researchers are trying to draw. The procedures used in the present research, because they rely on automatic activation, are appropriate for studying the effects of preexisting intergroup relations and attitudes but may be limited in their applicability to the effects observed in the original minimal social categorization paradigm of Tajfel (1970), in which arbitrary categorization, independent of previous attitudes, produces evaluative biases and discriminatory behavior.

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