
Reaction in Action: Intergroup Contrast in Automatic Behavior

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Whereas previous research has shown automatic behavior conforming to outgroup stereotypes, the authors demonstrate automatic behavioral contrast away from a stereotype/trait associated with an outgroup (Study 1 and 2) and point to the importance of an “us-them” intergroup comparison in this process. In Study 1, participants colored pictures more messily when neatness was associated with an outgroup rather than the ingroup. In Study 2, using a different behavior, participants primed with busy business people reacted faster than controls (assimilation) but became slower when their student ingroup identity was activated (contrast). Subliminally priming an “us-them” intergroup comparison set undermined the accessibility of outgroup stereotypic words (Study 3), especially for those higher in prejudice (Study 4). This suggests that people automatically distance themselves from outgroup attributes when intergroup antagonism is cued or chronic. Implications for the role of self and comparison processes in automatic behavior are discussed.

Keywords: *automatic behavior; contrast effects; social comparison; social identity; intergroup relations*

In what has already become a classic study, Bargh, Chen, and Burrows (1996) demonstrated compelling evidence of automatic behavior resulting from mere perception. For example, they showed that people primed with the stereotype of the elderly subsequently walked more slowly down the corridor after leaving the experiment. The disbelief of the research assistants at this result was probably representative of the social psychology community at the time and prompted a replication (duly confirmed). However, one aspect of this finding

that was no less surprising than the automatic nature of the behavior itself passed with little comment at the time. The participants in this study were students, which meant that the group of elderly people could reasonably be considered an “outgroup” for them. In our opinion, just as surprising as the fact of automatic influence is that participants so easily adopted the behavior of an outgroup. By contrast, much of research on intergroup relations demonstrates clear evidence that people often consciously try to differentiate themselves from outgroups in their judgments and their behavior (Brewer, 1979; Hewstone, Rubin, & Willis, 2002; Messick & Mackie, 1989; Tajfel & Turner, 1986). Does this mean that the realm of automatic behavior is governed by different principles than govern the conscious realm? The present research tries to understand the conditions under which automatic behavior is imitative and when it might reverse and produce differentiation from an outgroup stereotype.

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This theoretical and empirical challenge is not insignificant. The results of Bargh et al. (1996) have now been replicated with diverse methods in numerous domains. A considerable body of research suggests that activating group stereotypes or traits leads to behavior that conforms to these constructs (e.g., Bargh, 1997; Chen & Bargh, 1997; Dijksterhuis, Aarts, Bargh, & Van Knippenberg, 2000; Dijksterhuis & Van Knippenberg, 1998; Levy, 1996; see Dijksterhuis & Bargh, 2001; Wheeler & Petty, 2001, for recent reviews). Although the issue of the psychology of these effects (what mediates them) is not entirely resolved, it seems clear that perception can get translated in a fairly direct way into behavior by activating knowledge structures such as traits or stereotypes (Dijksterhuis et al., 2000; Kawakami, Young, & Dovidio, 2002; Wheeler & Petty, 2001).

This does not mean that priming of stereotypes and traits always leads to behavior congruent with these constructs, however. One way to think about these automatic behavior effects is to conceptualize them as “assimilation” effects: Behavior is assimilated to the primed construct (Dijksterhuis et al., 1998). However, social perception does not always lead to assimilation in judgment. It can also sometimes produce contrast effects at the level of quite basic encoding processes (e.g., in perceptual illusions; Stapel & Koomen, 1997). It then follows that social perception links may not always have assimilative effects on behavior. In our earlier research, we (Dijksterhuis et al., 1998) conceptualized automatic behavior in terms of assimilation and contrast and asked whether it was possible to generate behavioral contrast in the same way that social judgment can, under appropriate conditions, lead to contrast effects. Specifically, we built on the interpretation/comparison model developed by Stapel, Koomen, and their colleagues (Stapel & Koomen, 2000, 2001; Stapel, Koomen, & Ruys, 2002; Stapel, Koomen, & Van der Pligt, 1997; Stapel & Spears, 1996) that makes a distinction between priming effects resulting from the priming of abstract constructs (such as traits or stereotypes) and the priming of discrete exemplars (e.g., individuals, icons). According to this model, whereas constructs such as traits and stereotypes create an interpretative framework that colors the judgment of the target, causing judgmental assimilation, priming with an exemplar evokes a social comparison process, resulting in contrast.

Translating this reasoning to the behavioral domain was no small theoretical leap. Shifting our judgments of an indifferent target (e.g., Donald) is one thing; moving the self, quite literally in physical terms, is an altogether bigger ship to budge (and one where people like to think they remain in control). However, this way of thinking of the automatic behavior turns out to be fruitful. Using the same paradigm as Bargh to prime the elderly stereotype,

we showed that activating a specific exemplar of this category in its wake (the Dutch queen mother) actually led people to leave the room with a spring in their step: a contrast effect (Dijksterhuis et al., 1998). Behavioral contrast occurred here, we argued, because people form an implicit comparison between the primed exemplar and the self. Such a comparison process seems to be necessary for the emergence of contrast (Stapel & Koomen, 1997, 2000, 2001), especially in the domain of automatic behavior (see also Aarts & Dijksterhuis, 2002; Schubert & Häfner, in press). We found evidence for this contrastive comparison process. Words associated with the self (I, me) subliminally primed in the company of an intelligent exemplar (Albert Einstein) enhanced the accessibility of terms indicating stupidity in a lexical decision task (“Einstein smart, me dumb”; Dijksterhuis et al., 1998, Study 3). This is consistent with evidence that contrastive social comparison processes involving the self and exemplars seem to occur relatively automatically (Gilbert, Giesler, & Morris, 1995).

Further research on this phenomenon showed that simply adding to the number of exemplars to which perceivers were exposed (five instead of one) was sufficient to convert a behavioral contrast effect into assimilation (Dijksterhuis, Spears, & Lépinasse, 2002). Apparently, creating a group out of a number of exemplars is enough to give the stereotype activation and assimilative interpretation processes the upper hand over exemplar activation and contrastive comparison processes. This is consistent with the view that the most meaningful and efficient way to represent a group of individuals is by means of the stereotype that unites them (e.g., Oakes, Haslam, & Turner, 1994; Sherman, Macrae, & Bodenhausen, 2000).

One reason, then, that people assimilate behavior toward outgroup stereotypes (e.g., walk slower when primed with the stereotype of the elderly) is because stereotype activation is not counteracted by a contrastive comparison process. This idea also provides a clue to circumstances under which automatic behavioral contrast from an outgroup might arise. If an interpersonal comparison produces contrast at the level of individuals (e.g., “Einstein smart, me dumb”), then an intergroup comparison may produce contrast at the level of groups (e.g., “They fast, we slow”). In contexts where an intergroup comparison rather than an interpersonal comparison is salient, then this may lead people to contrast their group from the primed outgroup stereotype and differentiate their behavior accordingly.

This is very similar to the reasoning employed by Brewer and Weber (1994), albeit in the realm of conscious self-evaluations rather than unconscious behavior. In their research, they found that whereas members of nondistinctive majority groups tend to make inter-

personal comparisons within their group, members of numerically more distinctive groups made intergroup comparisons, thereby contrasting themselves from relevant outgroups and assimilating self-evaluations toward the ingroup (see also Schmitt, Silvia, & Branscombe, 2000, for a related demonstration).

Other research provides evidence of evaluative intergroup differentiation for distinctive groups, independent of relative group size (Jetten, Spears, & Manstead, 1998). Once the intergroup context becomes salient, intergroup differentiation can occur for both perceptual reasons (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) and more motivational reasons (Tajfel & Turner, 1986). Social identity theory proposes that intergroup comparison, self-definition in terms of social identity, and intergroup differentiation will all be more likely under conditions of conflict or competition between the groups (Tajfel & Turner, 1986). The phenomenon of ingroup bias in both evaluation and more behavioral domains (e.g., reward allocations) in intergroup contexts is well documented (see Hewstone et al., 2002, for a recent review). The question addressed here, however, is whether such intergroup differentiation can occur unconsciously in the behavioral domain.

Following this line of reasoning, we propose that although exposure to an outgroup stereotype can result in (automatic) imitative behavior assimilated to the stereotype, this may not always be the case. Specifically, when intergroup comparisons become salient, and particularly when there is a perception of group difference and/or some degree of antagonism or rivalry between the groups (giving a reason to differentiate ingroup from outgroup), there may be an unconscious tendency to “distance” oneself from the outgroup and contrast one’s behavior accordingly (we elaborate further on this process in Study 3 below). The importance of intergroup comparison to this analysis might help to explain the absence of outgroup contrast in previous studies. For example, in the research of Bargh et al., participants may simply not have categorized themselves as members of the ingroup “young people” and made the necessary contrastive intergroup comparison with the elderly. Indeed, this is consistent with the findings of Brewer and Weber (1994) that members of large and indistinct categories might not always spontaneously self-categorize at the group level. However, if a battle between young and old generations had been salient for the participants, or attention had been drawn to this social categorization, this may have activated the “us-them” intergroup comparisons that we propose to be necessary for intergroup behavioral contrast. In the following studies, we rely on both explicit and implicit (subliminal priming) means to evoke the intergroup comparisons in an attempt to stimulate unconscious contrast in behavior.

STUDY 1: THE “ILLUSORY COLORATION” PARADIGM

In this study, we chose a relevant and potentially antagonistic comparison outgroup for our participants, who were psychology students at the University of Amsterdam: economics students. Research in our lab has demonstrated that economics students form a sufficiently relevant and different comparison group to psychology students and there is some antagonism between them in terms of values, politics, and competition for facilities within the same complex (Postmes, Spears, & Lea, 2002). In this paradigm, we associate the trait “neatness” with a group by means of a scrambled sentence procedure (Srull & Wyer, 1979) and measure the neatness of participants coloring on an ostensibly unrelated coloring task (presented as a creativity test) compared to a measure of coloring behavior prior to the scrambled sentence test. The crucial comparison is to assess whether participants’ coloring behavior becomes more messy (a contrast effect) when the outgroup (economics students) is associated with neatness compared to when this is associated with the ingroup (psychology students).

Method

Participants and design. Participants were 1st-year psychology students at the University of Amsterdam ($n = 39$) who received course credit. The design consisted of a 2 (condition: ingroup vs. outgroup prime) \times 2 (messiness measure: preprime vs. postprime) factorial design with repeated measures on the second factor.

Procedure, cover story, materials, and dependent measures. After being welcomed to the lab (individual cubicles), participants were told that they would participate in two different studies combined for convenience. All participants then completed a six-item questionnaire measuring identification as a psychology student at the University of Amsterdam (Doosje, Ellemers, & Spears, 1995), which was designed to make their group identity as psychology students at this university salient. They were then presented with the coloring task, described in a written introduction as a creativity test concerned with color combinations. We explained that to get more reliable results it was necessary to complete this twice, punctuated by a filler task from another unrelated piece of research. There was no restriction on the color combinations chosen, which could change between the two colorings. Participants were given 7 min to complete this task. The picture consisted of a still-life drawing of television with a table lamp on it and an abstract painting; participants were asked to leave the background (wall) blank/white.

After completing the first coloring task, a different experimenter came along and presented them with the

filler task consisting of the scrambled sentence task. The introduction page of this test described this as a study investigating the effect of cultural bias on test performance. We explained that some intelligence tests made by White people were easier to answer for White than for Black participants because of cultural bias. The present test was designed to investigate an even more subtle form of this effect, namely, whether tests made by students from a particular study major were easier to complete by students from their same major. We explained that the purpose was to make grammatical sentences from five of the six words provided for each sentence in the allotted time. Depending on condition, we then explained that the sentences were composed by psychology (economics) students and that these sentences were drawn from the daily lives of these students to test the idea that the common student subculture might confer an advantage. On the reverse of this instruction, to check that they had understood the purpose of the study, we asked participants to indicate the study major of the students who made the sentences (psychology vs. economics) and then indicate their own study major from a list of four (including psychology and economics). This was designed to reinforce the salience of ingroup identity and the likelihood of making intergroup comparisons. Participants were then provided with the questionnaire consisting of 30 scrambled sentences (five relevant words with a distractor word), 25 of which contained synonyms or associates of neatness (e.g., old, sorts, Margot, table, reports, her = Margot sorts her old reports). Halfway through the questionnaire, participants had to indicate their study major (psychology or economics). At the end of the questionnaire, participants rated how easy versus difficult they found solving the sentences on a 7-point scale.

Participants then were presented with the second coloring task by the original experimenter (blind to priming condition) with a similar instruction as previously and the same time limit (7 min). Finally, participants were probed for suspicion and given a “funnel debriefing” (Bargh et al., 1996; Orne, 1962) to assess whether they saw any link between the studies. They also completed an exit questionnaire, which contained measures of the perceived neatness of psychology (1 = *not at all neat* to 7 = *very neat*) and economics students and the perceived similarity between these two groups (1 = *not at all* to 7 = *very high*). Participants were debriefed, thanked, and asked not to talk about the study with their fellow students.

Results and Discussion

There was no evidence from the exit interview that participants saw any links between the two studies, and in general, participants registered surprise when the link

between the two was explained. Participants all comfortably completed the coloring task within the time allotted.

The exit questionnaire also revealed that participants thought that economics students ($M = 4.97$, $SD = 0.90$) were neater than psychology students ($M = 3.95$, $SD = 0.89$), $F(1, 37) = 24.98$, $p < .05$, and this was not qualified by prime condition ($F < 1$) and there was not a main effect of prime ($F < 1$). Psychology students did not deviate from the midpoint.

The key dependent variable in this study was the degree to which participants became messier after the prime. To assess this, we measured the degree to which participants overshot the lines of the drawing with their coloring (measured from the perpendicular rounded off to the nearest half mm per measurement) and then calculated the means of the overshoots for the preprime and postprime coloring tasks. These were based on the averaged measurements of two coders who were always blind to condition and whether the drawing was preprime or postprime. The resulting means were subjected to a 2 (condition: ingroup vs. outgroup prime) \times 2 (preprime vs. postprime) ANOVA. This produced the predicted two-way interaction, $F(1, 37) = 4.54$, $p < .04$, which qualified the conceptually uninteresting pre-post main effect, $F(1, 37) = 5.83$, $p < .03$. Specifically for those in the ingroup prime condition, coloring of the picture remained just as neat after the prime in terms of mean mm over the line ($M = 0.946$, $SD = 0.239$) as before ($M = 0.936$, $SD = 0.287$), $F(1, 37) = 0.04$, *ns*, whereas participants in the outgroup neat prime condition became reliably more messy postprime in their coloring ($M = 1.154$, $SD = 0.289$) compared to preprime ($M = 0.951$, $SD = 0.290$), $F(1, 37) = 10.60$, $p < .03$.

To summarize, these results provide the predicted contrast effect (more messiness) after exposure to an outgroup (economics students) exhibiting the trait “neatness.” Trait activation would normally result in automatic behavior in line with the trait (e.g., Bargh et al., 1996), whereas when coupled to an outgroup, in which a relevant intergroup comparison was made salient, we find automatic contrast in behavior. We refer to the process underlying this effect as “distancing” because it involves separating the ingroup self from the outgroup attribute (see Study 3 below for more on this process).

This study suggests that behavioral contrast can occur in intergroup situations, or more precisely in situations where an intergroup comparison is salient. This is conceptually similar to the findings of Stapel and Koomen, who showed that activating person exemplar (trait and person associations) can produce contrast in evaluations of a neutral target (Stapel & Koomen, 1997) and also in self-evaluations (Stapel & Koomen, 2000, 2001). In ear-

lier research, we have applied the reasoning from this interpretation/comparison model to predict behavioral contrast from an individual exemplar (Dijksterhuis et al., 1998). Now in the present case, we activate a specific group behavior (trait and group associations) and find behavioral contrast in an intergroup situation, where there has previously only been evidence for imitative effects. Bargh et al. (1996) may simply not have made the intergroup comparison salient and thus triggered stereotype activation alone.

One might ask why we did not find evidence for an assimilation effect in the ingroup condition. Should we predict that the ingroup would become neater in their coloring after exposure to neatness coupled with the ingroup? Possibly, although Brewer and Weber (1994) argued and found that ingroup assimilation in their studies was primarily driven by outgroup contrast, and in the ingroup condition here, there was no outgroup against which to contrast the ingroup. Another possibility is that the nature of this paradigm is simply unsuited to demonstrating assimilation. If people already begin the first coloring task conscientiously, there may be little scope to improve in neatness, whereas there is always scope to become messier. In any event, the absence of this effect supports our argument that the difference between conditions is due to contrast from the outgroup in the intergroup condition and not due to assimilation to an ingroup stereotype (recall also that psychology students were not rated above the midpoint of the scale on neatness).

Nevertheless, it would be even more convincing if we could demonstrate both assimilation and contrast and, ideally, a reversal from assimilation to contrast within the same participants as the context changes from one that is intragroup (or unspecified) to one that is more clearly intergroup. This was the goal of the next study, in which we used a different paradigm better suited to test both assimilation and contrast and address a different behavioral outcome.

STUDY 2: CONTRAST COMES TO THOSE WHO WAIT

To demonstrate the robustness of our effects, we chose a different paradigm for this study, a variant of the “experimenter interruptus paradigm” developed by Bargh et al. (1996). In this case, however, we did not prime (im)politeness but stereotypes associated with “busyness.” We predicted that activating a group stereotype of busy people (literally, business people) would, other things being equal, lead to a behavioral assimilation such that participants become faster in line with the busy trait activated for that group. However, subsequently making relevant a group identity salient (Amsterdam psychology students) may be sufficient to

evoke the necessary intergroup comparison with this group and thus produce a contrast effect such that participants then slow down. Once again, the intergroup comparison of “us versus them” is central to finding this predicted contrast effect.

Method

Participants and design. Participants were 1st-year psychology students at the University of Amsterdam ($n = 43$) who received course credit for taking part. The design consisted of a 2 (stereotypic prime: busy vs. control) \times 2 (behavioral measure: preingroup vs. postingroup identity activation) mixed factorial design with the second factor within participants. The distribution of men and women across conditions was even.

Procedure, materials, and dependent measures. First, a short pilot question (using a 7-point scale: 1 = *not at all busy*, 7 = *very busy*) confirmed our assumption that psychology students see business people as busier ($M = 5.92$) than psychology students ($M = 4.71$), $F(1, 12) = 64.7$, $p < .05$. Participants for the main study were asked on the sign-up sheets to report to a waiting room where they were collected and taken to another experimental lab. This lab had an observation room behind a mirror obscured by a venetian blind through which the behavior of participants could be observed. Participants were provided with a text describing a group of people. The written instruction asked them to imagine the situation described. It was explained that this was not a memory test but that they should form an impression of the group. Depending on condition, participants then read a text about four business people describing their day. The text was constructed so as to emphasize the busyness of these people with full diaries, rushing from one meeting to another, and so forth. In the control condition, participants read a text about a group of tourists traveling in Europe and described their activities visiting museums, going to restaurants, the disco, and so forth. Although activity was described in this text, there was no emphasis on busyness or haste as in the business people text.

After reading the text, participants then were required to write a short account of the text in their own words and were required to answer five multiple-choice questions about the information they had received. Four of these questions referred to aspects of the busy nature of the lives of the business people in the busy business people condition, whereas they simply referred to aspects of their travels in the control condition. Participants were then required to answer an exit questionnaire on the reverse of this sheet. This contained a number of standard questions, namely, sex, age, their opinion of the research (pleasant, neutral, unpleasant), and two open questions connected to the research (what

they thought the aim of the research was and to what extent they thought the ability to form impressions was important in daily life). Unbeknown to the participants, as soon as they turned the page to answer questions on this sheet (prompted by the experimenter present) another experimenter in the observation room timed the amount of time taken to complete this.

When this questionnaire was completed, the experimenter present then handed out one further questionnaire and said, "Thanks very much. If you just fill in this last questionnaire then we are almost done. Frank is in B18 [the waiting room where the participant was collected at the beginning of the session] right now but he should come and give you your credit slip any minute. If that takes too long just check out B18." All participants were familiar with the waiting room because they had been collected from there. This experimenter then left the room with the completed questionnaire. The new questionnaire was short and consisted of a measure of identification with the group University of Amsterdam psychology students, presented as a measure of the degree of involvement felt with psychology at their university. Once the final questionnaire was complete, the observer started the stopwatch once more and timed how long it took before the participant went looking for Frank. Frank never showed up but intercepted them as they left for B18. He probed them for suspicion, then debriefed and thanked them and gave them their credit.

Results and Discussion

No participants revealed any knowledge of the aims of the study during debriefing. To recap, the key dependent variables in this study are the time taken to complete the exit questionnaire and the time spent waiting for the experimenter after completing the group identification measure. The predicted assimilation effect that participants in the business condition would complete the exit questionnaire faster ($M = 132.71$ s, $SD = 55.43$) than those in the control condition ($M = 165.00$ s, $SD = 72.27$) was in the expected direction but just short of conventional reliability, $t(41) = 1.64$, $p < .055$ (one-tailed). In the second part of the experiment, after making identity salient, we predicted a contrast effect such that those in the business condition would wait longer compared to the control condition before going to search for the experimenter. This is what we found: Participants in the business condition waited longer ($M = 375.05$ s, $SD = 270.87$) than did those in the control condition ($M = 227.00$ s, $SD = 175.79$), $t(41) = 2.14$, $p < .02$ (one-tailed). Although these two sets of time measurements are not directly comparable, when entered into a repeated measures ANOVA, they produced the expected interaction, reflecting the predicted reversal of the effect, $F(1, 41) = 6.14$, $p < .017$.

These results confirm our prediction that the priming of a group stereotype, producing a behavioral assimilation effect, could be reversed into a behavioral contrast effect once a group identity was activated by stimulating an intergroup comparison with the activated outgroup stereotype (busy business people). Thus, within the same participants, we show evidence of the two opposing processes of assimilation and contrast. The critical factor explaining this shift appears to be the activation of a group identity (University of Amsterdam psychology students) that prompted an intergroup comparison with the business people in the scenario. Although intergroup comparison may not be inevitable, they may become more likely when group identities are salient. These conditions may promote spontaneous intergroup comparisons in a similar fashion as for interpersonal social comparisons (e.g., Gilbert et al., 1995). Just as interpersonal comparison is necessary for interpersonal contrast (Dijksterhuis et al., 1998; Stapel & Koomen, 2000, 2001), so we propose is an intergroup comparison necessary for contrast at the intergroup level (see Brewer & Weber, 1994; Stapel & Koomen, 2000).

One remaining question concerns whether the participants in the business prime condition became slower after group identity as a psychology student was made salient or whether in fact people in the control condition became quicker. For example, is it possible that the tourist scenario created the impression of a relaxed and leisurely group against which the psychology students could contrast themselves and see themselves as active and therefore fast? However, if this was the case, then this contrast effect would operate by the exact same mechanism that we are proposing, and any difference between conditions after activating group identity is still best explained by the intergroup contrast mechanism. Finally, the finding in the pilot study that psychology students were judged less busy than business people, but not less so than the midpoint of the scale, again supports our assumption that the effect reflects genuine contrast from the outgroup rather than assimilation toward an opposite ingroup stereotype. In the next study, we try to gain more insight into the processes underlying these contrast effects.

STUDY 3: REACTING AGAINST THE OUTGROUP STEREOTYPE

In the present study, we adapted a method used in our previous research examining the critical role of the comparison process involved in behavioral contrast at the interpersonal level (Dijksterhuis et al., 1998, Study 3). In that study, we primed professors versus an exemplar of that category: Einstein. We then examined the accessibility of traits stereotypic of both targets (e.g., intelligent) and also counterstereotypic traits (e.g., stupid). Preced-

ing these words by a subliminal individual self-prime (I or me) was predicted to facilitate a contrastive interpersonal comparison with Einstein (me vs. Einstein), thereby enhancing the accessibility of contextually applicable words characteristic of the self (e.g., me = stupid). This is what we found. No similar effect was expected or found when the category professors was activated because (also in combination with the I/me primes) this should not elicit an interpersonal comparison.

In the present study, we modified this method from the interpersonal context of the earlier experiment, adapting it to the intergroup context of the current line of research. Analogous to the interpersonal contrast paradigm, we predicted that when an outgroup stereotype is activated, the effect of a subliminal prime designed to stimulate the intergroup comparison process is to activate contrastive comparison away from the outgroup. In this study, we attempted to prime an intergroup comparison mind-set directly to ensure the intergroup comparison is engaged (see Stapel & Koomen, 2001). Specifically, we preprimed participants with (Dutch equivalents of) “us-them” or “we-they” on critical trials with the aim of engaging the intergroup comparison (and making ingroup identity salient in the process). When this intergroup comparison is activated, ingroup members are predicted to distance themselves from stereotypic traits associated with the outgroup. The result should be that traits stereotypic of the outgroup should be rendered less accessible and less quickly recognized in a lexical decision task (traits associated with the ingroup also may become more accessible). Note that this involves a two-step process: The outgroup-relevant traits are made accessible by stereotype activation (as happens for assimilation effects) but the intergroup comparison process acts on the outgroup information causing the ingroup self to distance itself from the outgroup stereotype, rendering the associated trait less accessible (and helping to explain contrast). It is the outcome of this two-step process that we refer to as “distancing.”

Note that this prediction goes beyond the rationale in the interpersonal comparison process described above. In the case of the comparison with Einstein, personal attributes contrasting with Einstein (e.g., stupid) were predicted to be more accessible. Here, we suggest that attributes associated with the outgroup will become less accessible (there was actually no evidence that intelligence became less accessible in the individual self-Einstein condition in the Dijksterhuis et al. [1998], Study 3). Although both effects point to a contrastive differentiation process, there are two reasons for this slight divergence in rationale. First, in the earlier interpersonal comparison study, the prime was related to the individual self (I or me), whereas we use an intergroup comparison mind-set prime (us-them). It is then logical that

respondents in the individual prime study should focus on affirming what the self is (i.e., compared and contrasted to Einstein), whereas here the focus is more on disconfirming what the group self is not (i.e., compared and contrasted to the outgroup). This is consistent with our focus on differentiation from an outgroup stereotype rather than assimilation toward an ingroup stereotype. We are not claiming that people never differentiate themselves from the outgroup by focusing on ingroup stereotypes (this is consistent with the relational and differential nature of intergroup stereotypes) but simply that this differentiation process can be anchored in divergence from the outgroup stereotype (“we” are not like “them”). This is the reasoning underlying the contrast effects in the previous two studies that focus on deviation from an outgroup stereotype rather than conformity to a preestablished ingroup stereotype.

In intergroup contexts, there is often a motivation to differentiate ingroup from outgroup not always evident in interpersonal contexts (e.g., Schopler & Insko, 1992; Spears, 2002; Tajfel & Turner, 1986). Put another way, although individuals may surmise that they are different from Einstein (or Claudia Schiffer; Dijksterhuis et al., 1998), it is less clear that they will be motivated to distance themselves from such individuals (although this may be more true for negative individual exemplars). Much evidence of evaluative ingroup bias in intergroup contexts does suggest, however, that we try to differentiate ourselves from outgroups (Hewstone et al., 2002). In short, there is a stronger case to be made for distancing ourselves from outgroups and their attributes than from other individuals. Evidence of distancing from outgroup attributes would explain why group members display behavior in contrast to the contextually specific traits associated with outgroup (e.g., neatness and speed in the previous studies), whereas differentiating on dimensions more generally stereotypic of the ingroup would not.

Method

Participants and design. Participants were 1st-year psychology students at the University of Amsterdam ($n = 73$) who received course credit for taking part. The design was a 2 (elderly stereotype activation vs. not) \times 2 (elderly vs. young stereotypic words) \times 2 (intergroup comparison activated vs. not) mixed design with repeated measures on the last two factors.

Procedure. The study was run on Apple iMacs in cubicles. Participants were told that they were taking part in a series of unrelated studies. In the stereotype activation condition, the first study was presented as a pilot study concerned with stereotyping. They were led to believe that the researchers were collecting stereotypic information about several groups by asking participants to write

down the typical traits and behaviors of people from these groups. They were further told that in this specific study, the group under consideration was elderly people, and participants were asked to describe the characteristics of elderly people for 5 min. In the no-stereotype-activation condition, the first study was described as being concerned with people's thoughts and associations relating to zoos (no mention was made of stereotypes), and they were asked to write down as many of these thoughts as possible in 5 min.

After the first study, participants were presented with a lexical decision task in which they had to judge as quickly as possible, by means of a key press, whether the letter string in the center of the computer screen was either a word or a nonword. The list of letter strings that had to be identified was composed of 4 words that were stereotypic of elderly people (outgroup: forgetful, old-fashioned, faithful, and wise), 4 words that were stereotypic of young people (ingroup: impulsive, thoughtless, flexible, and sporty), 8 words that were unrelated to age, and 16 nonwords. The stereotypicality of these words was determined by piloting. All target words and nonwords were paired with a subliminally presented prime that consisted of a combination of words that would activate an intergroup comparison (i.e., us-them, we-they) or with a combination of words that should not activate such comparisons (e.g., the-an). As a result, all target words and nonwords, which were randomly presented, appeared twice, leading to 64 lexical decision trials.

To present the primes subliminally, participants were seated at a distance of approximately 50 cm from the computer screen (with a 75 Hz screen-refresh rate) and were asked on each trial to focus on a fixation point (xxxx). The fixation point, the primes, and the target words were presented in the center of the computer screen in 18-point, bold, Geneva Macintosh font. The fixation point appeared for 1,000 ms and was immediately followed by the prime, which was immediately followed by the target word. As a result, the prime appeared about 13 ms on the computer screen. Both lexical decision times (ms) and accuracy of the lexical decisions were recorded by the computer. Lexical decision times with respect to the stereotypic words of elderly and young people were used as an indicator of stereotype accessibility. After the trials, participants were asked to indicate whether they had noticed anything unusual. Then they were told that words had been primed before the target words. They were asked whether they had seen these primes and, if so, what these primes were. Finally, participants were debriefed and thanked.

Results and Discussion

Although several participants said they noticed something unusual about the lexical decision task (flickering

TABLE 1: Response Times Toward Young and Elderly Stereotypes (ms) as a Function of Elderly Stereotype Activation and Intergroup Comparison Prime

	Elderly Stereotype Activation			
	Yes		No	
	Intergroup Comparison Primed			
	Yes	No	Yes	No
Elderly stereotype	732 _b (77)	703 _a (86)	710 _b (107)	730 _b (112)
Young stereotype	751 _b (101)	773 _b (110)	722 _b (83)	733 _b (96)

NOTE: Higher means indicate less accessible stereotypes. Standard deviations are presented in parentheses. Means with different subscripts differ according to simple main effect analyses at $p < .05$ (differences between means are tested within the elderly stereotype activation condition and within the condition in which the elderly stereotype was not activated).

of the fixation point), none of them identified the primes. Trials on which target words were incorrectly identified and response latencies greater than 1200 ms or smaller than 150 ms were removed from the analysis (4.6% of the responses, see Ratcliff, 1993).

The response latencies with respect to the stereotypic words of young people (ingroup) and the elderly (outgroup) were subjected to a 2 (elderly stereotype activated vs. not) \times 2 (elderly vs. young people stereotypic words) \times 2 (intergroup comparison primed vs. not) mixed ANOVA with repeated measures on the last two factors (see Table 1 for the means). This analysis revealed a main effect of words stereotypic of elderly/young people, $F(1, 71) = 11.71, p < .01$, indicating that stereotypic words with respect to the elderly were more accessible ($M = 719$ ms, $SD = 97$) than stereotypic words with respect to young people ($M = 745$ ms, $SD = 98$). This main effect was qualified by an interaction between word type and the elderly stereotype activation (activated vs. not), $F(1, 71) = 5.72, p < .02$. This interaction suggests that when the elderly stereotype was activated, the elderly stereotype was more accessible ($M = 718, SD = 81.5$) than the young stereotype ($M = 762, SD = 105$), $F(1, 71) = 15.39, p < .001$. When the elderly stereotype was not activated, there was no difference in accessibility of the two stereotypes ($M_{\text{young}} = 728, SD = 89$, and $M_{\text{elderly}} = 720, SD = 109$), $F(1, 71) = .40, ns$.

However, this interaction was qualified by the predicted three-way interaction, $F(1, 71) = 4.11, p < .05$. When the elderly stereotype was not activated, no differences are found (all F s < 2.28). When the elderly stereotype was activated, a significant interaction was obtained between the intergroup prime and the two stereotypes, $F(1, 71) = 5.72, p < .02$. Simple effects analyses showed that when an intergroup comparison was activated by the prime, stereotypic words of elderly were less accessible than when the intergroup comparison is not activated,

$F(1, 71) = 4.04, p < .05$. With respect to the stereotypic words of young people, the simple effect was not reliable, $F(1, 71) = 2.10, ns$, although the means suggest the opposite pattern.

Moreover, when the elderly stereotype was activated, simple effects analyses revealed with respect to the neutrally primed stereotypic words that the elderly stereotype was more accessible than the young people stereotype (703 vs. 773), $F(1, 71) = 20.03, p < .0001$. However, when the stereotypic words were primed with an intergroup comparison, the elderly stereotype (732) was not more accessible than the young people stereotype (751), $F(1, 71) = 1.61, ns$.

This study provides further insight into the process proposed to mediate the automatic intergroup contrast effect. Confronted with an outgroup, and provided that an intergroup comparison is concurrently activated, an automatic tendency is evoked to differentiate the ingroup from the outgroup along stereotypic dimensions. In other words, for contrast effects in behavior to occur, we propose that this requires both the activation of one or more relevant traits associated with the outgroup (i.e., stereotype activation) and the activation of an intergroup comparison (i.e., "us vs. them"). In the current experiment, we predicted that these two necessary elements would result in the reduced accessibility of attributes characteristic of the outgroup (consistent with distancing). When the intergroup comparison is absent, however, straightforward stereotype activation should enhance the accessibility of stereotypic terms, as we found (and this differential accessibility was absent when the outgroup stereotype was not primed). The fact that this reversal in accessibility was obtained for subliminal priming of us-them word couples underlines our claim that the contrast reflects the operation of a relatively unconscious and automatic process.

In the following study, we investigate the possibility that those most antagonistic to the outgroup will be most likely to respond by showing automatic differentiation when an intergroup comparison is activated.

STUDY 4: INTERGROUP ANTAGONISM AND INTERGROUP CONTRAST

Having gained some insight into the process involved in automatic intergroup contrast, we now turn our attention to the question of who is most likely to demonstrate this effect. According to our rationale, this should depend on the degree to which group members want to differentiate their groups, at least when they more consciously consider the intergroup comparisons. From this reasoning, it follows that those people most likely to display automatic group contrast are those people with an antagonistic relation to the outgroup. In the present study, we therefore adapted a variant of the lexical deci-

sion paradigm used in the previous study and tested the hypothesis that the accessibility of stereotypes of an ethnic minority group would be most undermined among people prejudiced toward such groups, at least when an intergroup comparison is activated. Moroccans were chosen for this study because this is the ethnic group that elicits the most negative and prejudiced reactions among Dutch people who participated in this research (Gordijn, Koomen, & Stapel, 2001).

Method

Participants and design. Participants were 1st-year Dutch psychology students at the University of Amsterdam ($n = 87$). They received course credit for participation in the research. The design was a 2 (low vs. high prejudice) \times 2 (intergroup comparison activated vs. not) between-subjects design.

Procedure. The study was largely comparable to Study 3. Similar to Study 3, participants were told that the first study concerned a pilot study with respect to stereotyping. However, this time they were told that the specific group under consideration was Moroccans. Participants were asked to describe characteristics of Moroccans during 5 min. It was emphasized that the study did not concern their personal views on Moroccans but their perception of the cultural stereotype.

After this so-called first study, participants were presented with a lexical decision task. The list of letter strings that had to be identified was composed of 12 words that pretesting had shown were stereotypic of Dutch perceptions of Moroccans (aggressive, antisocial, criminal, poorly educated, religious, lazy, group minded, unreliable, traditional, sexist, unemployed, unadjusted), 33 words that were unrelated to the stereotype of Moroccans, and 45 nonwords. All target words and nonwords were paired with a subliminally presented prime (see Study 3 for details) so that half of the participants saw a combination of words designed to activate an intergroup comparison (e.g., us-them), whereas the other half received a combination of words that would not activate such comparisons (e.g., the-an). All target words and nonwords were randomly presented. There were 90 lexical decision trials. After the lexical decision task, feelings toward several groups in the Netherlands were measured. Participants had to indicate how they in general feel with respect to several groups, including ethnic minority groups such as Moroccans, Surinamese people, and Turks (1 = *in general negative feelings*, 9 = *in general positive feelings*). Finally, participants were debriefed and thanked.

Results and Discussion

The answers with respect to feelings about Moroccans, Surinamese, and Turks were combined into a prej-

udice scale¹; $\alpha = .84$, median = 5.33. Participants who scored higher than 5.34 were the low-prejudiced group ($n = 43$) and those with a mean lower than 5.34 were the high-prejudiced group ($n = 44$).

Although several participants said they noted something unusual about the lexical decision task (flickering of the fixation point), none of them identified the primes. Trials on which target words were incorrectly identified and response latencies greater than 1,300 ms or smaller than 150 ms were removed from the analysis (4.2% of the responses; see Ratcliff, 1993).

The average response latency with respect to the stereotypic words of Moroccans was subjected to a 2 (low vs. high prejudice) \times 2 (intergroup comparison activated vs. not) ANCOVA. The average response latency on the words that were unrelated to the Moroccan stereotype was used as a covariate, and the regression was significant, $F(1, 82) = 295.8, p < .0001$. This analysis revealed an interaction between prejudice and the intergroup comparison (activated or not), $F(1, 82) = 4.25, p < .05$. Simple effects analyses showed in the case of high prejudice that when an intergroup comparison is activated by the prime, the Moroccan stereotype is less accessible ($M = 750$ ms) than when the intergroup comparison is not activated ($M = 720$ ms), $F(1, 82) = 4.28, p < .05$. With respect to the low-prejudiced participants, the simple effect was not reliable, $F(1, 82) = .71, ns$ ($M_{intergroup} = 720$ ms; $M_{neutral} = 731$ ms). Moreover, simple effects analyses revealed that when the intergroup comparison was primed, the Moroccan stereotype was less accessible for high-prejudiced participants than for low-prejudiced participants, $F(1, 82) = 5.32, p < .05$. However, in the case of the neutral prime, the Moroccan stereotype was not more accessible for high-prejudiced participants than for low-prejudiced participants, $F(1, 82) = .36, ns$.

This study provides support for the prediction that the (reduced) accessibility of outgroup attributes is moderated by the degree of antagonism toward the outgroup, in this case as measured by prejudice toward ethnic minorities, when an intergroup comparison is activated. Although people scoring higher on prejudice seem to distance themselves from the Moroccan attributes when making an implicit intergroup comparison, those lower in prejudice show no such effect. In short, the factors affecting automatic intergroup comparison processes seem to be quite similar to the factors one might expect to govern more conscious attempts at intergroup differentiation.

GENERAL DISCUSSION

Although the evidence for assimilation in automatic behavior to primed stereotypes is hitherto more common in the literature than contrast (Bargh et al., 1996; Dijksterhuis et al., 2000, 2002; Dijksterhuis & Van

Knippenberg, 1998), this does not mean that this is generally the case (see Mussweiler, 2001; Stapel, 2000). Indeed, it was the oddity of this effect from an intergroup perspective that set us on the trail, both to find evidence of contrast in general and in intergroup contexts in particular. After all, in the field of intergroup relations, the evidence of conscious intergroup differentiation, in both judgment and behavior, is more the rule than the exception (Tajfel & Turner, 1986), and the idea that people conform to an outgroup is certainly more the exception than the rule (e.g., Mackie, Worth, & Asuncion, 1990; Turner, 1991). More generally, in the social comparison literature, contrast is also more common than evidence of assimilation (Stapel, 2000).

In the present research, we have found evidence for unconscious contrast in ingroup behavior (Studies 1 and 2) as well as providing some insight into the processes proposed to underlie these effects (Studies 3 and 4). Specifically, Study 1 demonstrated evidence of behavioral contrast away from an outgroup; Study 2 demonstrated evidence of both assimilation and contrast within the same participants and pointed to the importance of activating group identity and intergroup comparison in producing contrast; Study 3 further demonstrated the importance of an “us versus them” intergroup comparison set, through the use of us-them primes, in distancing the outgroup; Study 4 showed that more chronic antagonism of prejudice toward the outgroup further distances the outgroup when the intergroup comparison is activated.

Although evidence of contrast in automatic behavior has been demonstrated previously (Dijksterhuis et al., 1998), the present studies go beyond the earlier research by showing that contrast also can occur by priming of outgroup stereotypes as well as exemplars (cf. Dijksterhuis et al., 2002). Previous research had shown the importance of an interpersonal comparison process in leading to contrast with an individual exemplar (Dijksterhuis et al., 1998, Study 3). The present studies are among the first to our knowledge to show contrast effects in automatic behavior after priming with a group stereotype rather than exemplars (see also Schubert & Häfner, in press).

Our findings fit well with the interpretation/comparison model of Stapel and Koomen (1997, 2000, 2001; Stapel et al., 1997, 2002; Stapel & Spears, 1996) that we have used to frame our predictions and our earlier work (Dijksterhuis et al., 1998). In that model, the activation of traits led to an interpretation frame and assimilation effects. The activation of an exemplar (or trait + person links) results in an interpersonal comparison leading to contrast. Finally, in the present case, the activation of an outgroup (or trait and outgroup links) leads to contrast at the group level provided that an “us

versus them” intergroup comparison also is activated (see also Brewer & Weber, 1994; Stapel & Koomen, 2001). The main contribution of the present research is to show that such effects can occur unconsciously in the behavioral domain and implicate the group self. One reason that behavioral contrast effects have rarely been found in previous research may result from the fact that a number of conditions need to be fulfilled for this to happen, specifically, (a) the activation of a trait or stereotype associated with the outgroup (that also has clear behavior implications) and (b) the activation of an intergroup comparison with the outgroup (“us versus them”).

Although it was not necessary to make all component processes subliminal to show that the contrast effects in this research were unconscious, a further step would be to see whether contrast can occur when stereotype activation is also subliminal. It is worth noting that there is already some evidence that subliminal priming of outgroups can lead to contrast in affective responses, indicating that this may be possible (Ruys, Spears, Gordijn, & de Vries, 2002; Stapel et al., 2002).

The present research provides perhaps an unwelcome reminder that the intergroup division and differentiation that characterizes conscious intergroup behavior apparently also creeps into those crevices of group life that are less conscious or considered. More positively, however, evidence of automatic intergroup contrast in behavior provides a counter to the perhaps pessimistic idea that we routinely conform to our surroundings. One of the implications in demonstrating contrast as well as assimilation effects in automatic behavior is that it suggests that there is more variety and, paradoxically, that we may have more choice in automatic behavior than previously supposed (which is not to say we necessarily make deliberate decisions about this). This suggests that the unconscious realm may be as rich and as socially structured as the conscious realm—and contains as many behavioral possibilities. Indeed, the idea that automatic behavior may follow the shifting and relational nature of the self suggests a more flexible and functional view of the self than the idea that we are habitually assimilated to our surroundings.

The present research unites two traditions that often have been more isolated from each other than has always been necessary or productive. On one hand, the knowledge accessibility effects that have been at the heart of much social cognition research (e.g., priming studies) are essential ingredients of both the assimilation and contrast effects found here. However, the intergroup comparison process, and the tendency for people to define themselves and others in terms of social identities (us and them), is also a key component of contrast. The present research therefore attempts to transcend the divisions between these traditions and show that both

are necessary to get a complete understanding of the resulting behavioral effects. Just as self-definition and social comparison processes are important to social cognition, so are automatic processes important to social identity and intergroup relations, not just conscious and strategic ones. Although we have focused here on processes of intergroup differentiation, hopefully this research goes some way to unifying these research traditions rather than emphasizing the differences between them.

NOTE

1. Results are largely comparable when only feelings toward Moroccans are used as a measure of prejudice. However, because there is only one statement concerning prejudice toward Moroccans, a median split results in unequal group sizes. Therefore, we decided to use feelings toward other ethnic minority groups to determine prejudice because this combined measure is highly reliable and results in a similar pattern of results.

REFERENCES

- Aarts, H., & Dijksterhuis, A. (2002). Category activation effects in judgment and behaviour: The moderating role of perceived comparability. *British Journal of Social Psychology, 41*, 123-138.
- Bargh, J. A. (1997). The automaticity of everyday life. In R. S. Wyer, Jr. (Ed.), *Advances in social cognition* (Vol. 10, pp. 1-61), Mahwah, NJ: Lawrence Erlbaum.
- Bargh, J. A., Chen, M., & Burrows, L. (1996). The automaticity of social behavior: Direct effects of trait concept and stereotype activation on action. *Journal of Personality and Social Psychology, 71*, 230-244.
- Brewer, M. B. (1979). Ingroup bias in the minimal intergroup situation: A cognitive-motivational analysis. *Psychological Bulletin, 86*, 307-324.
- Brewer, M. B., & Weber, J. G. (1994). Self-evaluation effects of interpersonal versus intergroup social comparison. *Journal of Personality and Social Psychology, 66*, 268-275.
- Chen, M., & Bargh, J. A. (1997). Nonconscious behavioral confirmation processes: The self-fulfilling nature of automaticity-activated stereotypes. *Journal of Experimental Social Psychology, 33*, 541-560.
- Dijksterhuis, A., Aarts, H., Bargh, J. A., & Van Knippenberg, A. (2000). On the relation between associative strength and automatic behavior. *Journal of Experimental Social Psychology, 31*, 410-436.
- Dijksterhuis, A., & Bargh, J. A. (2001). The perception-behavior expressway: Automatic effects of social perception on behavior. *Advances in Experimental Social Psychology, 33*, 1-40.
- Dijksterhuis, A., Spears, R., & Lépinasse, V. (2002). Impression formation and assimilation and contrast in automatic behavior. *Journal of Experimental Social Psychology, 37*, 286-299.
- Dijksterhuis, A., Spears, R., Postmes, T., Stapel, D.A., Koomen, W., Van Knippenberg, A., et al. (1998). Seeing one thing and doing another: Contrast effects in automatic behavior. *Journal of Personality and Social Psychology, 75*, 862-871.
- Dijksterhuis, A., & Van Knippenberg, A. (1998). The relation between perception and behavior or how to win a game of Trivial Pursuit. *Journal of Personality and Social Psychology, 74*, 865-877.
- Doosje, B., Ellemers, N., & Spears, R. (1995). Perceived intragroup variability as a function of status and identification. *Journal of Experimental Social Psychology, 31*, 410-436.
- Gilbert, D. T., Giesler, R. B., & Morris, K. A. (1995). When comparisons arise. *Journal of Personality and Social Psychology, 69*, 227-236.
- Gordijn, E. H., Koomen, W., & Stapel, D. A. (2001). Level of prejudice in relation to knowledge of cultural stereotypes. *Journal of Experimental Social Psychology, 37*, 150-157.

- Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup bias. *Annual Review of Psychology*, 53, 575-604.
- Jetten, J., Spears, R., & Manstead, A. S. R. (1998). Defining dimensions of distinctiveness: Group variability makes a difference to differentiation. *Journal of Personality and Social Psychology*, 74, 1481-1492.
- Kawakami, K., Young, H., & Dovidio, J. F. (2002). Automatic stereotyping: Category, trait and behavioral activations. *Personality and Social Psychology Bulletin*, 28, 3-15.
- Levy, B. (1996). Improving memory in old age through implicit self-stereotyping. *Journal of Personality and Social Psychology*, 71, 1092-1107.
- Mackie, D. M., Worth, L. T., & Asuncion, A. G. (1990). Processing of persuasive ingroup messages. *Journal of Personality and Social Psychology*, 58, 812-822.
- Messick, D. M., & Mackie, D. M. (1989). Intergroup relations. In M. R. Rosenzweig & L. W. Porter (Eds.), *Annual review of psychology* (Vol. 40, pp. 45-81). Palo Alto, CA: Annual Review.
- Mussweiler, T. (2001). Focus of comparison as a determinant of assimilation versus contrast in social comparison. *Personality and Social Psychology Bulletin*, 27, 38-47.
- Oakes, P. J., Haslam, S. A., & Turner, J. C. (1994). *Stereotyping and social reality*. Oxford, UK: Blackwell.
- Orne, M. T. (1962). On the social psychology of the psychological experiment: With particular reference to demand characteristics and their implications. *American Psychologist*, 17, 776-783.
- Postmes, T., Spears, R., & Lea, M. (2002). Intergroup differentiation in computer-mediated communication: Effects of depersonalization. *Group Dynamics: Theory, Research and Practice*, 6, 3-16.
- Ratcliff, R. (1993). Methods for dealing with reaction time outliers. *Psychological Bulletin*, 114, 510-532.
- Ruys, K., Spears, R., Gordijn, E., & de Vries, N. (2002). *Automatic contrast: Evidence that unconscious social categorization affects affective reactions*. Unpublished manuscript, University of Amsterdam.
- Schmitt, M. T., Silvia, P. J., & Branscombe, N. R. (2000). The intersection of self-evaluation maintenance and social identity theories: Intragroup judgment in interpersonal and intergroup contexts. *Personality and Social Psychology Bulletin*, 26, 1598-1606.
- Schopler, J., & Insko, C. A. (1992). The discontinuity effect in interpersonal and intergroup relations: Generality and mediation. *European Review of Social Psychology*, 3, 121-51.
- Schubert, T., & Häfner, M. (in press). Contrast from social stereotypes in automatic behavior. *Journal of Experimental Social Psychology*.
- Sherman, S. J., Macrae, C. N., & Bodenhausen, G. V. (2000). Attention and stereotyping: Cognitive constraints on the construction of meaningful social impressions. *European Review of Social Psychology*, 11, 145-175.
- Spears, R. (2002). Four degrees of stereotype formation: Differentiation by any means necessary. In C. McGarty, V. Yzerbyt, & R. Spears (Eds.), *Stereotypes as explanations: The formation of meaningful beliefs about social groups*. Cambridge, UK: Cambridge University Press.
- Srull, T. K., & Wyer, R. S., Jr. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social Psychology*, 37, 1660-1672.
- Stapel, D. A. (2000). Moving from fads and fashions to integration: Illustrations from knowledge accessibility research. *European Bulletin of Social Psychology*, 12, 4-27.
- Stapel, D. A., & Koomen, W. (1997). Social categorization and perceptual judgment of size: When perception is social. *Journal of Personality and Social Psychology*, 73, 1177-1190.
- Stapel, D. A., & Koomen, W. (2000). Distinctness of others and malleability of selves: Their impact on social comparison effects. *Journal of Personality and Social Psychology*, 79, 1068-1087.
- Stapel, D. A., & Koomen, W. (2001). I, we, and the effects of others on me: How self-construal moderates social comparison effects. *Journal of Personality and Social Psychology*, 80, 766-781.
- Stapel, D. A., Koomen, W., & Ruys, K. I. (2002). The effects of diffuse and distinct affect. *Journal of Personality and Social Psychology*, 83, 60-74.
- Stapel, D. A., Koomen, W., & Van der Pligt, J. (1997). Categories of category accessibility: The impact of trait versus exemplar priming on person judgments. *Journal of Experimental Social Psychology*, 33, 44-76.
- Stapel, D., & Spears, R. (1996). Event-accessibility and context effects in causal inference: Judgment of a different order. *Personality and Social Psychology Bulletin*, 22, 979-992.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds.), *The psychology of intergroup relations* (pp. 7-24). Chicago: Nelson-Hall.
- Turner, J. C. (1991). *Social influence*. Milton Keynes, UK: Open University Press.
- Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Oxford, UK: Basil Blackwell.
- Wheeler, S. C., & Petty, R. E. (2001). The effects of stereotype activation on behavior: A review of possible mechanisms. *Psychological Bulletin*, 127, 797-826.

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