



Behavioural effects of automatic interpersonal versus intergroup social comparison

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Does information about other people automatically affect one's own behaviour as a function of the salience of interpersonal or intergroup contexts? Study 1 revealed that exposure to an intelligent comparison target led to worse performance than exposure to an unintelligent target when an interpersonal context was salient (contrast) whereas the opposite effect was found when an intergroup context was salient. Study 2 showed better performance after exposure to an intelligent in-group target and worse performance when the in-group target was unintelligent (assimilation), whereas opposite effects were found when the target was an out-group member or when no intergroup context was salient. Finally, Study 3 showed better performance after exposure to a group of intelligent targets and worse performance after exposure to a group of unintelligent targets suggesting assimilation; opposite effects were found when the group consisted of out-group targets.

Every day we are confronted with other people who experience some kind of success or failure. The grapevine tells us about a colleague whose article was accepted by a top journal, we hear about a friend who failed an exam or we see a person on television winning a contest. Modern social comparison research shows that even when we are not explicitly comparing ourselves to other people's performances, spontaneous comparison processes may influence how we *feel* and how we *perceive* ourselves (Gilbert, Giesler, & Morris, 1995; Mussweiler & Bodenhausen, 2002; Stapel & Blanton, 2004). However, social comparison research has not really investigated the impact of automatic comparisons (i.e. comparisons that occur spontaneously and are unintended) on behavioural reactions. Moreover, mainstream social comparison research has typically focused on interpersonal rather than intergroup other-self comparisons, that is, on comparisons that concern 'individuals' rather than 'group members' (for exceptions

see Brewer & Weber, 1994; Schmitt, Silvia, & Branscombe, 2000). Specifically, we know of no research that systematically investigates within a single framework the impact of the *type* of other-self relation (i.e. interpersonal vs. intergroup) on the automatic behavioural effects of social comparison processes.

In the current research we attempted to fill this void by testing the hypothesis that the way in which the performance of other people may automatically affect one's own behaviour is a function of whether the comparison context makes interpersonal or intergroup comparisons salient. We argue that whether social comparisons lead to automatic contrast or assimilation effects on behaviour depends on whether the comparison target is categorized as either an in-group or out-group *member* in an intergroup context or as another *individual* in an interpersonal context.

Social comparison research

We use information about other people's opinions and abilities in order to evaluate our own opinions and abilities (Festinger, 1954). Research on social comparison has shown that being confronted with other people's experiences may have profound effects on how we feel and how we see ourselves (Suls & Wheeler, 2000). When it concerns the specific *direction* of such social comparison effects, however, previous research does not provide a consistent picture (Blanton, 2001). Being confronted with someone who does better (upward comparison) is sometimes inspiring (assimilation) but can also be frustrating (contrast). Similarly, someone who is worse-off than oneself (downward comparison) can sometimes raise one's spirits (contrast) but can also have the opposite effect (assimilation).

Whether social comparison results in assimilation or contrast depends on the way the comparison target is categorized in relation to the self (Brewer & Weber, 1994). When a *personal identity* is salient, that is, when you perceive yourself as an individual rather than as a group member, the comparison target is also seen as another individual and people are likely to compare and contrast their abilities to this person. This means that when the comparison target performs exceptionally well, people will evaluate their own capabilities as worse than when the comparison target performs badly. However, this contrast and comparison effect only occurs when people perceive the target of comparison as relatively similar to themselves.

When a *social identity* is salient, that is, when you perceive yourself as a group member rather than as an individual, assimilation should occur when the comparison target is seen as an in-group member (Brewer & Weber, 1994). In this case, the identity level shifts from 'me' to 'us' such that upward comparisons should lead to more positive self-evaluations than downward comparisons. However, when the comparison target is an out-group member, contrast should occur. Then, the salient identity focus is 'us' versus 'them,' such that comparisons to out-group members determine the relative standing of oneself and one's (in)group.

In line with this, Stapel and Koomen (2001) found that exposure to someone who is very successful leads to negative self-evaluations when the personal self is primed, whereas the same person will induce positive self-evaluations after priming of the social self. A negative comparison target leads to the exact opposite results. Moreover, Mussweiler and Bodenhausen (2002) showed that people contrast their self-evaluations with the performance of out-group members. Together, these findings suggest that contrast should emerge when people compare themselves to out-group *members* in an intergroup context or to (non-categorized) *individuals* in an interpersonal context.

Assimilation should occur when the comparison target is seen as an in-group *member* in an intergroup context. Thus, although previous research has given support to separate parts of this hypothesis, an explicit test still awaits empirical validation. Moreover, the consequences of this hypothesis for the impact of automatic social comparisons on behaviour have not been tested.

As noted above, the spontaneous effects of social comparisons on behaviour have not received as much attention (for exceptions see Cervone & Peake, 1986; Mussweiler & Strack, 2000; Seta, 1982). This should not be taken to mean that it is impossible for social comparisons to affect people's behaviour. Mussweiler and Strack (2000), for example, showed that students who received explicit instructions to compare themselves to the average student concentrated better or performed more intelligently when a high standard was given and did worse when a low standard was given. Thus, explicitly comparing oneself to an average person who does well may increase performance in relation to comparing oneself to someone who does badly.

However, social comparison does not occur only when people are explicitly instructed to do so. Social comparison is a process that often occurs spontaneously and unintentionally. Perhaps the most fascinating idea behind social comparison research is the idea that simply seeing a person is enough to exert an effect (Gilbert *et al.*, 1995; Stapel & Blanton, 2004). An important question is thus whether social comparisons may spontaneously affect people's behaviour. Will simply perceiving another person influence behaviour? Research on automatic behaviour and stereotyping indicates it might.

Automatic behaviour research

Bargh, Chen, and Burrows (1996) showed that people who had been primed with the stereotype of the elderly subsequently walked at a slower speed. Since this seminal study, many studies have replicated the finding that assimilative behaviour occurs after stereotype priming (e.g. Dijksterhuis & Van Knippenberg, 1998; Levy, 1996). However, behavioural contrast has also been found. For example, Dijksterhuis *et al.* (1998; for similar findings see Haddock, Macrae, & Fleck, 2002) showed that whereas priming the stereotype of a group (e.g. 'intelligent' in the case of the stereotype about professors) led to assimilation in behaviour (solving more questions in a general knowledge task), priming a specific exemplar of such a group (e.g. 'Einstein') led to behavioural contrast (solving fewer questions). The reasoning was that a distinct person exemplar would be used more readily as a standard to which one compares oneself than a more general stereotype (see Stapel & Koomen, 2001).

Further evidence for the notion that stereotype activation leads to behavioural assimilation, whereas activation of a specific stereotype exemplar leads to behavioural contrast comes from a study by Dijksterhuis, Spears, and Lepinasse (2001). They showed that exposure to one specific elderly exemplar led to faster response latencies, indicating a contrast with the stereotype of the elderly, while exposure to a group of elderly exemplars resulted in slower response latencies, thus revealing assimilation of the stereotype of the elderly. The idea is that the group of exemplars just activates the stereotype of that group, leading to assimilation.

Similar to Brewer and Weber's (1994) perspective, Spears, Gordijn, Dijksterhuis, and Stapel (2004) recently argued that exposure to stereotypical group information should not always lead to assimilation (see also Haddock *et al.*, 2002). That is, when an intergroup context is salient, people should show contrast with a stereotypical

out-group. That is exactly what Spears and colleagues demonstrated (see also Schubert & Haefner, 2003). They showed that - only when the intergroup context is salient - priming of an out-group stereotype (e.g. busy businessmen) leads to behavioural contrast with the out-group stereotype (e.g. slower behaviour). Spears *et al.* (2004) did not show that exposure to an in-group target in a salient intergroup context actually leads to assimilative automatic behaviour, as Brewer and Weber (1994) suggest.

The current research

Our review shows that both social comparison studies and automatic stereotyping studies are relevant for the question of whether automatic social comparisons influence behavioural reactions and to what extent this is influenced by the impact of the *type* of other-self relation (i.e. interpersonal vs. intergroup). Interestingly (or unfortunately), none of the previous research efforts have addressed this question in full. Social comparison research has focused mainly on self-evaluation and paid hardly any attention to intergroup comparisons. Furthermore, research on automatic behaviour focused mainly on the influence of (out-group) stereotypes. That is, these studies mainly showed that priming of stereotypes can lead to automatic effects on behaviour.

However, it could be argued that Spears *et al.* (2004) did not really prime a stereotype but influenced behaviour by associating specific traits with the target. Is it possible to influence automatic behaviour just by informing people of specific traits about a target who, by simply varying the salient social relation to the target, can be seen as an in-group member, an out-group member or just another individual within the group? In this case, confrontation with the target does not automatically activate a well-learned stereotype that leads to automatic behaviour. However, we argue that, as a function of the salient relationship with the target, information about the target may be automatically incorporated into the self-concept (leading to behavioural assimilation) or excluded from the self-concept (leading to behavioural contrast).

In the current research we examined the full picture. Our hypotheses are that people will assimilate their behaviour with in-group members in an intergroup context, whereas they contrast their behaviour with in-group members in an interpersonal context and with out-group members in an intergroup context. In Study 1 our aim was to show that (a) when an interpersonal context is salient, behavioural contrast should occur such that exposure to an upward comparison target leads to worse performance than a downward comparison target, and (b) when an intergroup context is salient and the target is categorized as an in-group member, behavioural assimilation should occur such that exposure to an upward comparison target should lead to better performance than a downward comparison target. In Study 2, we intended to show that when the intergroup context is salient, assimilation only occurs when the target is categorized as an in-group member. Contrast should be more likely when the target is an out-group member. In Study 3, we presented participants with a group of exemplars. Our goal was to replicate findings by Dijksterhuis *et al.* (2001), as well as show that behavioural assimilation should occur when neither an interpersonal nor intergroup context is made salient. However, in addition to Dijksterhuis *et al.* (2001), we predicted that assimilation should occur in a salient intergroup context when the group consists of in-group exemplars and contrast should occur when the group consists of out-group exemplars.

STUDY I

Method

Participants and design

Twenty-one male and 50 female undergraduate psychology students from the University of Amsterdam participated in the study for which they received course credit. Participants were randomly assigned to one of the experimental conditions of a 2 (focus: interpersonal vs. intergroup) × 2 (intelligence of comparison target: high vs. low) factorial design.

Procedure

In order to manipulate focus, the title of the questionnaire was varied. In the *interpersonal focus* condition, the title was 'Persons as individuals: Perception and processing'. Participants in this condition had to first fill out their name, birth date and place of birth. Then they had to write down four traits that described their character. The letterhead in this condition was 'individuals and persons'. In the *intergroup focus* condition the title was 'Groups and categories: Perception and processing'. The subtitle was 'A study among students, teachers, nurses and unemployed people'. In this case they had to fill out whether they were a student, a teacher, a nurse or unemployed. The letterhead in this condition was 'groups and categories'.

After filling out the first page of the questionnaire, participants read a story about a young man. The content of the story varied in order to manipulate the intelligence of the comparison target. In the *intelligent comparison target* condition, the target was described a young psychologist who, after graduating with distinction, now works at a prestigious advertising agency where he is seen as the new 'superstar'. It was further mentioned that his rapidly rising career came as no surprise to those who know him since he was a top student whose dissertation was published and who had found time during his studies to be a manager in different student organizations. Furthermore, it was said that everybody had always been impressed by his motivation, intelligence and creativity, and that the people he now works for should count themselves lucky to have him.

In contrast, in the *low intelligent comparison target* condition, the target is described as a young psychologist who works for a small employment agency. It was further stated that he would be fired soon because of the recession and that he expected it would be very difficult to find a new job. He is not functioning well and is not somebody with initiative. For those who know him it is no surprise that he will be fired since he was not a good student. He failed many exams and his dissertation project was not very successful. Moreover, he used to spend more time in bars than studying and would be very lucky if he were able to find a new job and keep it.

After answering a few filler questions, participants were given an apparently unrelated knowledge test with 15 trivial-pursuit type multiple choice questions. The *number of correct answers* was the dependent variable. Finally, participants had to answer a few questions about the target. In order to check the manipulation of intelligence, participants had to indicate how intelligent, attractive and friendly they found him. Answers were given on 7-point Likert scales (from 1 = 'absolutely not' to 7 = 'absolutely'). If this manipulation were successful, then a difference should only be found on the measure of intelligence. Finally, participants were debriefed and thanked.

Results

Manipulation check of intelligence of comparison target

As expected, the 2 (intelligence of target) \times 2 (focus) ANOVA (ANOVA) revealed a main effect of target intelligence, $F(1, 67) = 49.86, p < .01, \eta^2 = .43$, with the target rated as more intelligent in the high intelligent conditions ($M = 5.47, SD = 0.99$) than in the low intelligent conditions ($M = 3.78, SD = 1.00$). No other effects were significant (all $F_s < 1.4$). We also examined whether the manipulation influenced the perceived attractiveness and friendliness of target. As expected, no differences were found for target intelligence ($F_s < 1$), focus ($F_s < 1.9$) or the interaction between these variables (all $F_s < 1$).

Number of correct answers

As expected, the 2 (intelligence of target) \times 2 (focus) ANOVA only revealed a significant interaction between intelligence of target and focus, $F(1, 67) = 8.07, p < .01, \eta^2 = .11$. Means are reported in Table 1. Simple effects analyses revealed that in the interpersonal focus condition the story about the intelligent comparison target led to fewer correct answers than the story about the less intelligent target, $F(1, 67) = 4.90, p < .05, \eta^2 = .07$. However, in the intergroup focus condition, the story about the intelligent comparison target tended to lead to more correct answers, $F(1, 67) = 3.31, p = .07, \eta^2 = .05$, than the less intelligent comparison target. Moreover, the story about an intelligent comparison target, tended to lead to fewer correct answers when the focus was interpersonal rather than intergroup, $F(1, 67) = 3.31, p = .07, \eta^2 = .05$. A story about a less intelligent comparison target led to more correct answers when the focus was interpersonal rather than intergroup, $F(1, 67) = 4.86, p < .05, \eta^2 = .07$.

Table 1. Number of correct answers as a function of the focus and the intelligence of the comparison target (Study 1)

	Highly intelligent target	Less intelligent target
Interpersonal focus	6.18 _a ^x (1.19)	7.44 _b ^y (2.31)
Intergroup focus	7.24 _a ^y (1.35)	6.21 _a ^x (1.69)

Note. Means with different subscripts differ at least at $p < .05$. Means with different superscripts differ at $p < .07$.

Discussion

In line with predictions, we found that exposure to an intelligent target lead to worse performance than exposure to an unintelligent target when an interpersonal context was made salient by participants focusing on their personal characteristics. On the other hand, exposure to the intelligent target led to better performance than exposure to the unintelligent target when an intergroup context was made salient by focusing on being a member of a group in comparison to other groups. This finding shows that automatic behavioural effects can occur, even when people have only just been informed of specific traits about a target. In addition, we showed that behavioural effects can be quite flexible. A simple priming task that activates either an interpersonal context or an intergroup context is sufficient to completely turn behaviour around. Automatic behavioural effects can thus be very flexible, even though they occur unintentionally and without awareness.

STUDY 2

In Study 1, we did not examine a situation in which an intergroup context is salient and the target represents an out-group member. Therefore, in Study 2, our aim was to show that when an intergroup context is made salient, assimilation only occurs when the target is categorized as an in-group member. Contrast should be more likely when the target is an out-group member. When the identity of the target is not salient, the situation is comparable to the interpersonal context of Study 1 and, therefore, contrast should occur. Moreover, as in Study 1, our aim was to show that mere exposure to a comparison target is sufficient to automatically affect behaviour.

Method

Participants and design

Twenty-nine male and 66 female undergraduate students of the University of Groningen voluntarily participated in the study and were randomly assigned to one of the experimental conditions of a 3 (identity of comparison target: out-group vs. in-group vs. control) × 2 (intelligence of comparison target: high vs. low) factorial design.

Procedure

The study was introduced as a study about impression formation. In the two intergroup conditions participants were told that the goal of the study was to investigate social perception and judgment of students in big cities. In order to activate the intergroup context it was said that students from Groningen are likely to describe each other better than students from Amsterdam because Groningen students are more likely to have met each other due to the smaller size of the city. It was further said that the psychology department of the University of Amsterdam was running the same study in order to compare the findings from the two studies. Students in the control condition did not receive this information.

In the remaining part of the study all participants were asked to form an impression of a person. This person was described as either very intelligent or not intelligent in order to manipulate the *intelligence of the comparison target*. For example, in the highly intelligent condition participants were told that M, age 21, only received As for his exams. In the less intelligent condition, participants were told that M, age 28, needed extra lessons and had already studied for 8 years. In total the participants received 20 such descriptions about this person. In order to manipulate the *identity of the comparison target*, M was described as a Groningen student in the in-group condition. In the out-group condition M was described as a Groningen student. The control condition received information about M without any reference to a city.

After this, participants were asked to judge M on several personality traits, some of which were related to the way we manipulated intelligence (i.e. intelligent, ambitious, competent, self-assured and dedicated: Cronbach's $\alpha = .89$) and some of which were not (i.e. extroverted and attractive). This measure, for which we used 7-point Likert scales (from 1 = 'absolutely not' to 7 = 'absolutely'), was taken in order to check the manipulation of intelligence as well as to strengthen the cover story. After this, participants were given an apparently unrelated knowledge test with 15 trivial-pursuit type multiple choice questions. As in Study 1, the number of correct answers in this test was the dependent variable.

Results

Manipulation check of intelligence of comparison target

As expected, the 2 (intelligence of target) \times 3 (identity of target) ANOVA on the combined items that were related to intelligence showed that M is rated as more intelligent in the high intelligent target conditions ($M = 6.10$, $SD = 0.43$) than in the low intelligent target conditions ($M = 3.48$, $SD = 0.79$), $F(1, 89) = 396.7$, $p < .01$, $\eta^2 = .82$ (other F s < 1.1). The other items that were not related to intelligence (attractive [$M = 3.96$; $SD = 1.35$] and extroverted [$M = 4.26$; $SD = 1.28$]) did not show significant effects of the manipulation of intelligence (F s < 1). This suggests that the manipulation of intelligence was successful.

Number of correct answers

As expected, the 2 (intelligence of target) \times 3 (identity) ANOVA only revealed a significant interaction between intelligence of target and identity of the target, $F(2, 89) = 8.50$, $p < .01$, $\eta^2 = .19$. Means are reported in Table 2. Simple effects analyses revealed that in the in-group condition, forming an impression of the intelligent comparison target led to more correct answers than forming an impression of the less intelligent target, $F(1, 89) = 5.68$, $p < .05$, $\eta^2 = .06$. However, in the out-group condition, forming an impression of the intelligent comparison target led to fewer correct answers than forming an impression of the less intelligent target, $F(1, 89) = 6.03$, $p < .05$, $\eta^2 = .06$. Similarly, in the control condition, forming an impression of the intelligent comparison target led to fewer correct answers than forming an impression of the less intelligent target, $F(1, 89) = 5.68$, $p < .05$, $\eta^2 = .06$.

Table 2. Number of correct answers as a function of the identity and intelligence of the comparison target (Study 2)

	Highly intelligent comparison target	Less intelligent comparison target
In-group comparison target	7.31 _b (.95)	5.94 _a (1.24)
Out-group comparison target	6.27 _a (1.22)	7.69 _b (2.36)
Control comparison target	5.86 _a (1.31)	7.25 _b (1.77)

Note. Means with different subscripts (both within rows and columns) differ at $p < .05$.

Discussion

As predicted, we found that the participants performed better when the in-group target appeared to be intelligent and worse when the in-group target appeared to be unintelligent. However, when the comparison target was an out-group member or when no intergroup context was salient, participants performed worse when the target appeared to be intelligent and better when he appeared to be unintelligent. In line with Study 1, the findings show that automatic behavioural effects can occur, even when people have only just been informed of specific traits about a target. Again, we showed that these behavioural effects are quite flexible (as behavioural comparison effects can be diametrically opposite) simply by varying the social identity of a comparison target.

STUDY 3

In the final study our goal was to investigate assimilation and contrast in behaviour when people are presented with a group of comparison targets rather than a single target. Dijksterhuis *et al.* (2001) showed that assimilation occurs when people are confronted with a group of stereotypic exemplars. They reasoned that in this case, exemplars are not used as a standard to which people compare themselves. On the other hand, Haddock *et al.* (2002) showed that a dissimilarity focus leads to a contrast effect when confronted with a group of exemplars. We argue that in this case people might perceive the group of exemplars as an out-group. This means that *when an intergroup context* is salient and the group comprises out-group exemplars, contrast effects in line with Haddock *et al.* (2002) should be obtained. Assimilation should occur when no intergroup context is salient (replicating Dijksterhuis *et al.*, 2001) or with a group of in-group exemplars.

Method

Participants and design

Twenty-eight male and 68 female undergraduate students of the University of Groningen voluntarily participated in the study and were randomly assigned to one of the experimental conditions of a 3 (identity of comparison targets: out-group vs. in-group vs. control) \times 2 (intelligence of comparison targets: high vs. low) factorial design.

Procedure

The procedure was similar to Study 2 with one difference. Now participants were asked to form impressions of a group of five students rather than just one person. The 20 descriptions from Study 2 were used to describe the group of five students.

Results

Manipulation check of intelligence of comparison target

As expected, the 2 (intelligence of target) \times 3 (identity of target) ANOVA on the combined items that were related to intelligence revealed that M is rated as more intelligent in the high intelligent target conditions ($M = 5.85$, $SD = 0.52$) than in the low intelligent target conditions ($M = 3.56$, $SD = 0.74$), $F(1, 90) = 300.5$, $p < .01$, $\eta^2 = .77$ (other F s < 1). The other items that were not related to intelligence (attractive [$M = 3.89$; $SD = 1.17$] and extroverted [$M = 4.27$; $SD = 1.07$]) did not show significant effects of the manipulation of intelligence (F s < 1). This suggests that the manipulation of intelligence was successful.

Number of correct answers

The 2 (intelligence of targets) \times 3 (identity) ANOVA only revealed a significant interaction between the intelligence of targets and the identity of the targets, $F(2, 90) = 7.85$, $p < .01$, $\eta^2 = .15$. Means are reported in Table 3. Simple effects analyses revealed that in the in-group condition, forming an impression of the intelligent target group led to more correct answers than forming an impression of the less intelligent target group, $F(1, 90) = 5.14$, $p < .05$, $\eta^2 = .05$. Similarly, in the control

Table 3. Number of correct answers as a function of the identity and intelligence of the comparison targets (Study 3)

	Group of highly intelligent comparison targets	Group of less intelligent comparison targets
In-group comparison targets	7.43 _b (1.32)	5.81 _a (2.48)
Out-group comparison targets	6.07 _a (1.10)	7.94 _b (1.95)
Control comparison targets	7.53 _b (2.63)	5.88 _a (2.13)

Note. Means with different subscripts (both within rows and columns) differ at $p < .05$.

condition, forming an impression of the intelligent comparison target led to more correct answers than forming an impression of the less intelligent target group, $F(1, 90) = 5.46$, $p < .05$, $\eta^2 = .06$. However, in the out-group condition, forming an impression of the intelligent target group led to fewer correct answers than forming an impression of the less intelligent target group, $F(1, 90) = 6.70$, $p < .05$, $\eta^2 = .07$.

Discussion

As expected, performance was better after exposure to an intelligent group of targets and worse after exposure to a group of unintelligent targets. However, when the group consisted of out-group exemplars, contrast occurred. That is, performance was worse after exposure to an intelligent group of targets and better after exposure to a group of less intelligent targets. As in the previous studies, this study also shows the importance of the salience of the social context in which targets are perceived. Moreover, exposure to the group of targets influenced automatic behaviour even though participants had only just learned about the specific trait of that group.

GENERAL DISCUSSION

The main purpose of this research was to test the hypothesis that the way in which exposure to specific traits or performances of other people automatically affects behaviour is a function of what comparison context (interpersonal or intergroup) is salient. We predicted that when an intergroup context is salient, behavioural assimilation should occur after exposure to in-group members and behavioural contrast should occur after exposure to out-group members. Furthermore, we also predicted behavioural contrast when the comparison context was interpersonal.

In three studies we found evidence for these ideas. Study 1 revealed that exposure to an intelligent target led to a worse performance than exposure to an unintelligent target when an interpersonal context was made salient by focusing people on their personal characteristics. However, exposure to an intelligent target led to a better performance than exposure to an unintelligent target when an intergroup context was made salient by focusing attention on being a group member in relation to other groups. In line with this, Study 2 showed that exposure to an in-group target led to better performance when the target was intelligent than when this target was unintelligent. On the other hand, when the target was an out-group member or when no intergroup context was salient, performance was better after exposure to an unintelligent rather than intelligent target. And finally, Study 3 showed better performance after exposure to a group of intelligent rather than unintelligent in-group targets. However, contrast occurs when the group

consists of out-group exemplars, as evidenced by worse performance after exposure to an intelligent group of targets and better performance after exposure to a group of less intelligent targets.

Together, these findings suggest that even when merely learning about some traits of a target, automatic behaviour can be influenced as a function of how this target is categorized in relation to oneself. When the target is an in-group member, information about the target or the group of targets seems to be automatically incorporated into the self-concept, leading to behavioural assimilation. On the other hand, information about out-group members seems to be excluded from the self-concept and therefore functions as a standard to which one compares oneself, leading to behavioural contrast. Similarly, information about other individuals in an interpersonal context appears to be excluded from the self-concept, leading to behavioural contrast.

This research supports and extends findings by Brewer and Weber (1994) who argued that social comparison research should take the influence of social contexts into account. In line with their ideas, we found that identity is rather flexible (see also Onorato & Turner, 2004) and, therefore, the outcome of social comparison processes is flexible as well. Everyone we compare ourselves to can be viewed in a multitude of ways, depending on which 'identity' is salient at the time the comparison process takes place. If the people we compare ourselves to are categorized as in-group members, then in-group-defining traits will be ascribed to the self (Haslam, Oakes, Reynolds, & Turner, 1999; Pickett, Bonner, & Coleman, 2002; Simon & Hamilton, 1994). Interestingly, our research shows that these in-group-defining traits do not necessarily have to be well-learned stereotypes to have an influence on automatic behaviour. In other words we showed that even when people simply learn about characteristics of a target, their own behaviour can be influenced.

The present research is also relevant with respect to studies on automatic behaviour (for a review, see Wheeler & Petty (2001)). Most of these studies concern the influence of stereotypes on automatic behaviour. The idea behind this type of research is that the perception of stereotypical exemplars automatically activates well-learned and well-rehearsed stereotypical knowledge, which influences automatic behaviour. However, research by Spears *et al.* (2004) suggested that contrast might be possible when people are primed with traits that are associated with the out-group but are not clearly stereotypical for this group (e.g. busy businessmen, neat economy students). However, Spears *et al.* (2004) could not find assimilation to activated constructs. Yet, our research suggests that assimilation is indeed possible. Simply learning about characteristics of a target at the time of the comparison process is enough for assimilative or contrastive behaviour to occur.

Even though we used different manipulations for priming target characteristics, one possible limitation of our research is that we only focused on intelligence. It could be possible that in other domains different findings are obtained. One might, for example, argue that merely comparing oneself to other groups on any domain could make people either secure or insecure, which could influence their performance. If so, our effects on performance are not necessarily linked to the activated construct but could be the result of feeling (in)secure. It should be noted that many studies with respect to automatic behaviour have used intelligence as the main dependent variable. In order to stay in line with these studies, we decided to use this characteristic as well. However, future research should examine automatic behaviour in other domains as well.

To conclude, our research adds to both social comparison research and research on automatic behaviour. By integrating ideas of these two types of research we argued and

found within a single experimental framework that the mere perception of specific trait-person links may influence, without us being aware of this influence, how we behave. Moreover, the direction of such influence appears to be a function of the type of relationship that is salient when we perceive potential comparison targets: assimilation occurs when we see them as fellow in-group members but contrast occurs when we think of them as other individuals or as members of an out-group. Together, this research shows the importance of taking the fabric of our lives – social relations – into account when examining social comparison processes and automatic behaviour.

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