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Running head: Automatic Associations and Judgment

**When do associations matter?:**

**The use of automatic associations towards ethnic groups in person judgments**

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## Abstract

Previous studies have reported weak correlations between automatic associations towards ethnic minorities and social judgments. The present paper argues that automatic associations are more strongly related to social judgments when the amount of processing is low rather than high. The study reported here examined whether automatic associations and self-reported attitudes towards Turkish immigrants in Germany predict judgments about a specific exemplar of this group when need for cognition (NFC) is considered as a moderator. As expected, the relationship between automatic associations and the target judgment increased when NFC decreased. Moreover, the relationship between automatic associations and the target judgment was independent of the self-reported out-group evaluation. Instead, automatic associations contributed significantly to the prediction of the self-reported out-group evaluation when NFC was low. These findings suggest that individuals base their judgments on automatic associations, especially when they are less prone to engaging in effortful cognitive processing.

## When do associations matter?:

## The use of automatic associations towards ethnic groups in person judgments

An important research area in social psychology is concerned with the question of how and when prejudices affect judgment of and behavior towards members of ethnic minorities (Hilton & von Hippel, 1996). However, when researchers ask about prejudices directly, one problem is that respondents may provide socially desired answers to avoid being labeled racist (Gaertner & Dovidio, 1986) or to comply with “politically correct” standards (Plant & Devine, 1998). Moreover, individuals may not necessarily be aware of their “true” feelings (Bassili, 1996; Greenwald & Banaji, 1995; Nisbett & Wilson, 1977).

In the last two decades, various measures have been employed to assess automatic associations<sup>1</sup> towards ethnic groups that are beyond cognitive control (e.g., Devine, 1989; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Gaertner & McLaughlin, 1983; Fazio, Jackson, Dunton, & Williams, 1995; Greenwald, McGhee, & Schwartz, 1998; for an overview see Greenwald & Banaji, 1995). Despite the diversity in methods used, most studies have revealed a clear ethnic bias which could not be found using self-report attitude measures (e.g., Dovidio et al., 1997; Fazio et al., 1995; Greenwald et al., 1998; Wittenbrink, Judd, & Park, 1997): The ethnic in-group is more strongly associated with positive attributes and less strongly with negative attributes than ethnic out-groups. For example, Greenwald et al. (1998) asked white participants to map items of a dichotomous target concept (black names and white names) and a dichotomous attribute dimension (positive and negative) onto two response keys. Responses were facilitated when participants used one response key for white names and positive words, and the other key for black names and negative words. These tendencies to prefer the in-group over the out-group were

much weaker or even absent in self-report attitude scales, a finding which lends support to the assumption that automatic associations are less susceptible to social norms and impression management. Similar results were obtained using priming techniques (e.g., Fazio et al., 1995; Dovidio et al., 1997).

However, the divergence of automatic associations and self-report measures raises the question of whether we can expect a relationship between automatic associations and social behavior at all. In fact, there is considerable controversy over whether individual differences in automatic associations are or might be related to social judgments or behavior. Recent studies provide inconsistent results concerning this relationship. While some authors (e.g., Devine, 1989; Dovidio et al., 1997; Greenwald et al., 1998) found low or even zero correlations, other studies (e.g., Lepore & Brown, 1997; Wittenbrink et al., 1997) have reported substantial correlations between automatic associations and self-report measures of prejudice. In light of these inconsistencies, it seems desirable to clarify the circumstances under which one might expect strong versus weak relationships between automatic associations and self-report attitude measures.

Greenwald and Banaji (1995) mentioned several conditions for effects of automatic associations on social judgments. They assumed that such implicit effects would decrease when attention is focused on the source of an implicit effect. In contrast, implicit effects should increase when individuals are less attentive, for example, due to time pressure or distraction. In his MODE-model ("motivation and opportunity as determinants"), Fazio (1990; cf. Fazio & Towles-Schwen, 1999) distinguished deliberative from spontaneous processing, with the latter being determined to a greater degree by automatically activated attitudes. During deliberative processing, individuals are supposed to take specific information into

account and to weigh their behavior towards subjective norms. The motivation to engage in deliberative reasoning and the opportunity to process information in an effortful manner are considered preconditions for deliberative processing.

Similarly, Smith and DeCoster (1999; 2000) differentiate between rule-based and associative processing in their connectionistic model. With reference to Sloman (1996), they argue that associative processing is fast, intuitive, and effortless. In contrast, rule-based processing includes the application of socially learned logical reasoning. Again, the suggestion is made that the impact of automatic associations on social judgments depends on the allocated amount of processing. Automatic associations should affect social judgments more strongly if only a few rather than many information units are processed. Extensive information processing should attenuate the weight of automatic associations, because in this case the information processor takes into account information other than automatic associations and may tend to behave more in line with subjective norms.

Indirect support for these assumptions can be found in various fields of application (e.g., Bodenhausen, 1990; Chaiken, 1980; Gilbert & Hixon, 1991; Macrae, Hewstone, & Griffith, 1993; Petty & Cacioppo, 1979; Petty, Wells, & Brock, 1976). In a study pertaining to processing capacity, Kruglanski and Freund (1983), for example, showed that ethnic stereotypes are more likely to affect social judgments under pressure of time. In a study pertaining to processing motivation, Sanbonmatsu and Fazio (1990) demonstrated that decreased motivation to process information leads to an increased use of overall attitudes and a neglect of more detailed information. Although the cited studies reveal that processing motivation and capacity may affect the use of stereotypes or activated attitudes, they leave open the question of whether individuals use or do not use common stereotypes, and whether

there are meaningful differences in individual attitudes which have a stronger impact on social judgments when motivation and capacity are low.

In contrast to the models mentioned above, Devine (1989) argued that because of a common socialization, individuals are equally knowledgeable about cultural stereotypes. These social stereotypes should be activated in the presence of an out-group member. This assumption implies that the difference in judgments does not depend on the activated association or stereotype, but on individuals' motivation to inhibit the influence of the activated stereotype.

Fazio and his colleagues (Dunton & Fazio, 1997; Fazio et al., 1995; Fazio & Towles-Schwen, 1999) have articulated a different view. They assume that judgments of ethnic minorities or members of such minorities are affected by both the motivation to control prejudiced responses as well as individual differences in attitude activation. In their view, there are meaningful differences in the evaluations that are activated from memory automatically. However, whether these evaluations determine social judgments or behavior should depend on the motivation to control prejudice. Fazio et al. (1995; Experiment 4) and Dunton and Fazio (1997) provide strong support for their model. In two experiments, the authors examined the relationship between an unobtrusive measure and several self-report measures of prejudice. They found that the relationship between explicit and implicit measures grew stronger as the motivation to control prejudice decreased. Thus, it would appear that some people did not care about being prejudiced and used the activated evaluation to construct their judgment.

However, the motivation to control prejudice is a factor that is content-specific to a certain type of judgment. As we have pointed out above, the models of Fazio (1990) and Smith and DeCoster (1999; 2000) suggest that the underlying process is

more general and that factors determining the amount of deliberation should also have an influence on the use of activated attitudes or associations. One of these variables, which in different contexts affects the motivation to deliberate, is need for cognition (for an extensive overview see Cacioppo, Petty, Feinstein, & Jarvis, 1996). Need for cognition (NFC) is described as an “individual’s tendency to engage in and enjoy effortful cognitive processing” (Cacioppo, Petty, & Kao, 1984, p. 306). Previous research has shown that the judgments or decisions of individuals low in NFC were more affected by stereotypical cues or heuristics than the judgments or decisions of those high in NFC (e.g., Crawford & Skowronski, 1998, Experiment 4; Epstein, Pacini, Denes-Raj, & Heier, 1996). However, we are not aware of any research that has examined the moderating role of need for cognition in light of the relationship between automatic associations and social judgments. Our study was therefore intended to extend this line of research by investigating whether the relationship between (implicitly measured) automatic associations towards an ethnic minority and (explicitly measured) social judgments of a member of this group depends on individual differences in the propensity to deliberate. We expected our findings to show that this is indeed the case.

### The Study

To test our predictions, we examined attitudes of Germans towards Turkish immigrants and their judgment of a member of the Turkish minority. Specifically, German students completed a task intended to measure automatic associations to the Turkish group (implicit association test: IAT; Greenwald et al., 1998), and were asked to evaluate the Turkish minority in general on self-report items. Participants then received a fictitious newspaper article describing a juvenile Turkish offender. After participants had read the article, they judged the target’s guilt and assessed the

target according to a few traits. Finally, we measured NFC in order to assess the propensity of individuals to engage in effortful cognitive processing. We hypothesized that judgments of participants high in NFC would reflect automatically activated associations to a lesser degree than would judgments of participants low in NFC.

## Method

### Procedure and Participants

The participants were 68 students from the University of Münster who received course credit and a chocolate bar in exchange for their participation. After arriving, participants were told that they would take part in a study about social information processing in which they had to manage several tasks. Next, participants were seated in front of a computer screen and given instructions for the IAT tasks. Upon completing the IAT, participants answered a questionnaire which included items to measure attitudes towards Turks and Germans explicitly. Then participants were asked to read the newspaper article and to answer questions about the target. Finally, participants filled out the German version of the NFC scale (Bless, Wänke, Bohner, Fellhauer, & Schwarz 1994).

### Material

A newspaper article about a 16 year-old Turkish offender named Ismet was presented to the participants. The article was allegedly taken from the newspaper "Berliner Zeitung" and, on the whole, drew a negative picture of the young Turk. As a member of a street gang, he threatened pupils and committed several property offences. In court he was uncooperative and showed no remorse for his crimes. Participants were requested to read the article carefully and subsequently write down the thoughts that had occurred to them while reading the article. Finally, they answered several questions pertaining to Ismet.

## Measures

Automatic associations. The associations between the groups and positive and negative attributes were measured with an adapted version of the IAT of Greenwald et al. (1998). The adapted IAT consisted of five steps in which participants, using two response keys, had to assign words presented on a computer screen to certain attribute categories (positive vs. negative) or group categories (Turks vs. Germans). The words representing the attribute categories were adjectives with a positive (e.g., beautiful, joyful) or negative meaning (e.g., angry, sad). The adjectives were selected from a study by Hager, Mecklenbräuker, Möller, and Westermann (1985). The selected adjectives were equal in length and of unambiguous valence. The words representing the group categories were German first names (e.g., Rudi, Dieter) and Turkish first names (e.g., Özal, Muhammat). Altogether, 72 words (18 for each category) were selected for presentation. Within the most critical steps<sup>2</sup>, adjectives and first names were presented at random and participants had to map the presented items onto the response keys in a prejudice-consistent manner (right key: positive words and German names; left key: negative words and Turkish names) or prejudice-inconsistent manner (right key: positive words and Turkish names; left key: negative words and German names). To prepare the data for analyses that require a normal distribution, we followed the procedures of Greenwald et al. (1998). Responses slower than 300 ms were regarded as guesses and responses faster than 3000 ms as controlled responses and were therefore eliminated. Furthermore, the first two trials from each step were dropped because of typically delayed responses at the beginning of a new step (cf. Greenwald et al., 1998). Finally, a difference score was computed on the basis of the log-transformed and averaged latencies of the prejudice-consistent and the prejudice-inconsistent

mode. The mean latency for the prejudice-inconsistent mode was subtracted from the mean latency for the prejudice-consistent mode. Thus, higher values indicate that Turks were more strongly associated with positive attributes and that Germans were more strongly associated with negative attributes.

Self-report attitude measure. Participants were asked to indicate on a 6-point scale (1= not at all; 6= very much) the degree to which five positive attributes (pleasing, enriching, sympathetic, attractive, good) and five negative attributes (negative, dangerous, unpleasant, unwanted, forbidding) apply to Germans or Turks. For each target group, the self-reported attitudes towards Turks (Cronbach's Alpha = .88) and Germans (Cronbach's Alpha = .82) were summed up into single scales. Next, the score for the attitude towards Germans was subtracted from the score for the attitude towards Turks in order to establish a self-report measure comparable to the IAT, which is simultaneously based on attitudes towards Germans and Turks. Below, we will refer to this measure as self-reported out-group evaluation. High values indicate a preference of the out-group over the in-group.

Need for Cognition (NFC). To assess NFC, the German version (Bless et al., 1994) of the Need for Cognition scale was used (Cronbach's alpha = .78).

Target judgments. Participants indicated on a 9-point scale (1 = not at all; 9 = very much) the degree to which several attributes applied to Ismet (pleasant, affable, criminal, friendly, threatening, spoiling, aggressive, likeable). To assess the responsibility of Ismet for the crimes, participants indicated their agreement with the following statements (1 = agree; 9 = do not agree): "I think that Ismet himself is to a great degree responsible for his situation."; "I think that Ismet would not have been a criminal in a different social setting."; "I think that the verdict on Ismet should be 'not guilty'."; "I believe that the friends of Ismet bear the greatest degree of guilt."; "I

believe that Ismet has chosen his way deliberately and has to accept responsibility for his deeds.” Taking the item poles into consideration, the assessment of Ismet was averaged across the eight trait attributes (Cronbach’s alpha = .87) as well as across the items assessing the responsibility attribution (Cronbach’s alpha = .70). Because the two scales were correlated,  $r[68] = -.56$ ,  $p < .001$ , they were summed up into a single scale (Cronbach’s Alpha = .86). High values indicate a positive evaluation of Ismet.

### Results

In line with previous studies using the IAT, participants responded faster when attributes and first names were mapped onto the response keys consistent with the prejudice ( $M = 735.80$  ms) than when the usage of the response keys did not correspond to the prejudice ( $M = 990.16$  ms),  $t(67) = -16.88$ ,  $p < .001$ ,  $d = 2.08^3$ . In contrast, self-reported attitudes towards Germans and Turks did not differ,  $t(67) < 1.5$ ,  $ns$ ,  $d = .15$ .

Hierarchical regression analyses were carried out to test whether automatic associations and NFC would predict the overall judgment of the target person. In a first step, the main effects of automatic associations, self-reported out-group evaluation, and NFC were entered (see the last column of Table 1). This resulted in a significant main effect for NFC,  $t(64) = 2.34$ ,  $p < .05$ , and a marginally significant main effect for the self-reported out-group evaluation,  $t(64) = 1.83$ ,  $p < .08$ , reflecting the fact that participants high in NFC and participants with a high self-reported preference for the out-group evaluated Ismet more positively. In contrast, automatic associations did not predict the judgment of the target,  $t(64) < 1$ .

Insert Table 1

When the two-way interactions were entered in the second step, a significant interaction of automatic associations with NFC emerged,  $t(62) = -2.00$ ,  $p < .05$ . As expected, the correlation between automatic associations and the target judgment were more positive when NFC was low than when NFC was high. However, we could observe not only a positive relationship for participants low in NFC, but also a negative correlation for those high in NFC (see Figure 1). The interaction between self-reported out-group evaluation and NFC was not significant,  $t(62) < 1$ . Similar results were observed when automatic associations and self-reported out-group evaluations were examined in separate regression analyses (see the first two columns of Table 1).

Insert Figure 1

Furthermore, we conducted regression analyses considering the prediction of the self-reported out-group evaluation by NFC and automatic associations. As for the prediction of the target judgment, we found that NFC moderated the relation between automatic associations and the self-reported evaluation of the out-group. In the first step of the regression analysis, the main effects of NFC and automatic associations on the self-reported out-group evaluation were not significant,  $\beta_s < 1$ ,  $t_s(65) < 1$ , while in the second step, the interaction between both variables was,  $\beta = -3.23$ ,  $t(64) = -2.16$ ,  $p < .05$ . As Figure 2 depicts, the self-reported out-group evaluation tended to be consistent with automatic associations when NFC was low, but the two scores tended to be opposed when NFC was high.

Insert Figure 2

### Discussion

In previous studies, weak or even zero correlations between automatic associations and self-report attitude measures were explained predominantly in

terms of normative behavior and social desirability. Indeed, Fazio et al. (1995; cf. Dovidio et al., 1997) found stronger correlations between automatically activated attitudes and self-reported evaluations when participants were less motivated to control prejudice. Extending this line of research, we have argued that, in addition to normative orientations, the amount of elaboration in information processing and, in particular, the predisposition to engage in effortful cognitive processing also have a moderating influence on the relationship between automatic associations and social judgments. The present study provides broad confirmation of this hypothesis. The target judgments of participants who were low in NFC were more likely to be positively correlated with automatic associations than the target judgments of participants who were high in NFC.

Since automatic associations themselves were unrelated to NFC, we conclude that the crucial difference between participants high and low in NFC lies in the use of corrective mechanisms or in the consideration of more individuating information, both of which require cognitive elaboration. We suppose that when the amount of deliberation is low, individuals rely on information that is easy and fast to process (see also Kruglanski & Thompson, 1999). It is obvious that using associations that are activated by the category membership is easier than using individuating information, which – in the present study – was embedded in a newspaper article. Indeed, numerous studies have demonstrated that the impact of category membership on judgments increases as the amount of information processed decreases (Bodenhausen, Macrae, & Sherman, 1999). In contrast to these studies, the present studies showed not only that shared stereotypes are more likely to determine a judgment when people are less likely to deliberate, but also that

individual differences in the activated associations are reflected in the judgment under this condition.

Unexpectedly, we found a converse correlation between automatic associations and the target judgment for participants high versus low in NFC. A similar result was obtained for the relationship between automatic associations and the self-reported out-group evaluation. At first glance, consideration of more information (which implies that individuals are high in NFC) should only attenuate but not reverse the relationship between automatic associations and self-report scores. We assume that the fact that the IAT was always completed first may be responsible for the inversion of the relation. Unlike in other implicit measures, participants may be able to “feel” the IAT-effect and, as a consequence, may be alerted to the degree of bias they are showing in the task. Considering that the existing literature indicates that “when participants were likely to be aware of biasing factors in a judgment setting [...] those high in need for cognition were more likely to correct for these biases than were those low in need for cognition” (Cacioppo et al., 1996, p. 237), perception of a bias in the IAT task might have led individuals high in NFC to attempt to reduce this bias. If we assume that the motivation to correct the judgment increases with the degree to which a bias is felt, this may lead to an over-correction by those individuals who perceive a strong bias (Dunton & Fazio, 1997; Fazio et al., 1995; von Hippel, Sekaquaptewa, & Vargas, 1997; Strack, 1992; Wegener & Petty, 1995). This would provide an explanation for the negative relationship between automatic associations and self-report scores in this case. It is possible that in the setting of the present study (judgments about ethnic minority members) this effect is mediated by more specific motivational orientations to comply with subjective norms to be non-prejudiced (Dunton & Fazio, 1997; Plant & Devine, 1998).

Interestingly enough, individual differences in automatic associations predicted the target judgments independently of the self-reported attitudes. We take this as a hint that, at least to some degree, self-reports and automatic associations map different types of information which have their source in two different memory systems. Smith and DeCoster (1999; see also Epstein & Pacini, 1999) maintain that associations are based on information from a slow-learning memory system that allows preconscious access with high speed and low effort. Self-reported attitudes may be based to a greater degree on context-dependent information from a fast-binding memory system that is also capable of storing unique impressions. Hence, self-reported attitudes, more so than automatic associations, may be a result of context-dependent appraisals, whereas automatic associations may represent more stable parts of the attitude. However, our results have shown that the self-reported out-group evaluation was not independent from automatic associations. In fact, the relationship between automatic associations and self-reported out-group evaluations was moderated by NFC, as well. Thus, self-reported evaluations cannot be taken as an appropriate measure of information which has its source in the fast-binding memory system. Finally, self-reported evaluations as well as target judgments seem to be influenced by both systems, whereas the degree or the direction of the influence depends on the amount of deliberation.

### Conclusion

The present research provides further evidence for the assumption that automatically activated associations may have an impact on social judgments. Specifically, our research suggests that any investigation of the relationship between automatic associations and social judgments should take moderating variables into account. While Fazio et al. (1995) have demonstrated the role of the motivation to

control prejudices, our results suggest that automatic associations are more likely to be used in social judgments when the amount of processing is limited. Despite the correlational data of the present (as well as Fazio's) findings, we believe that they can offer an important step towards a better understanding of how and when automatic associations influence social judgments.

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## Footnotes

<sup>1</sup>Throughout this article we use the terms automatic associations and implicitly-measured associations as synonymous.

<sup>2</sup>Because we were not interested in the implicit in-group favoritism effect itself, but in its amplitude, we decided to do the study without a variation of the order of the five steps within the IAT. We chose the order that usually yielded the strongest in-group favoritism effect (Greenwald et al., 1998). All participants first responded in a prejudice-consistent and after that in a prejudice-inconsistent manner.

<sup>3</sup>The t-test was computed using log-transformed response latencies. However, untransformed latencies were reported to facilitate interpretation.

Table 1: Standardized multiple regression coefficients from regression analyses predicting the target judgment

	Variables in the Regression Equation		
	NFC, Associations	NFC, Self-reported Evaluation	NFC, Associations, Self-Reported Evaluation
Step 1			
Need for Cognition ( $X_1$ )	.29*	.27*	.28*
Automatic Associations ( $X_2$ )	-.04	--	-.03
Self-reported Evaluation ( $X_3$ )	--	.22	.21
Step 2			
$X_1 \cdot X_2$	-3.50*	--	-3.00*
$X_1 \cdot X_3$	--	.43	.19

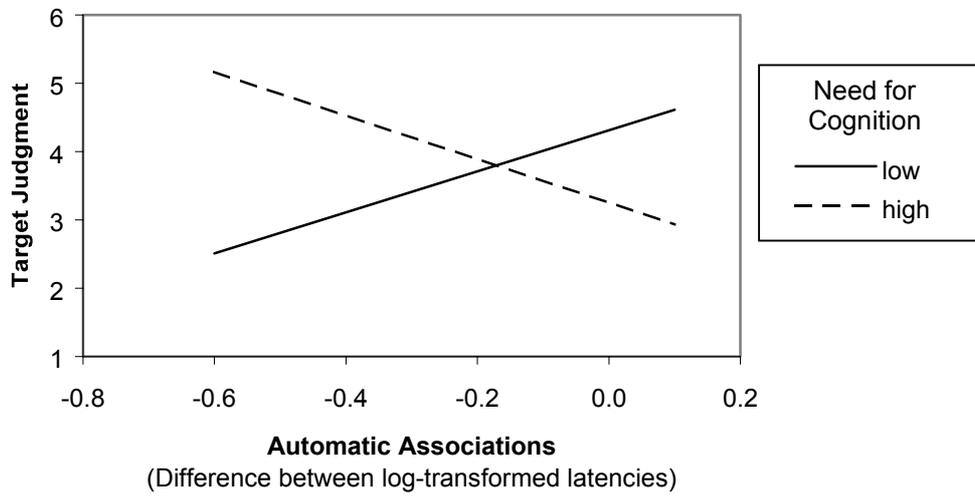
Note: \*  $p \leq .05$ .

## Figure Caption

Figure 1. Regression lines predicting the judgment of the Turkish exemplar as a function of need for cognition and automatic associations. Higher scores reflect a more positive evaluation of the exemplar and more positive associations with Turks. The scale for automatic associations is based on the difference between the mean log-transformed latencies and has a meaningful zero point that indicates absence of preference for Turks compared to Germans. The observed values range from  $-.61$  to  $.06$  ( $M = -.27$ ). The differences between the retransformed latencies range from  $-587.13$  to  $42.14$  ( $M = -228.24$ ).

Figure 2. Regression lines predicting the self-reported out-group evaluation as a function of need for cognition and automatic associations. Higher scores reflect a more positive evaluation and more positive associations with Turks. Both scales have meaningful zero points that indicate absence of preference for Turks compared to Germans. The observed differences between the mean log-transformed latencies range from  $-.61$  to  $.06$  ( $M = -.27$ ). The differences between the retransformed latencies range from  $-587.13$  to  $42.14$  ( $M = -228.24$ ).

**Figure 1**



**Figure 2**

