



Implicit and explicit interethnic attitudes and ethnic discrimination in hiring

Lieselotte Blommaert^{a,*}, Frank van Tubergen^a, Marcel Coenders^b

^a Department of Sociology/ICS, Utrecht University, Heidelberglaan 2, 3584 CS Utrecht, The Netherlands

^b Department of General Social Sciences/ERCOMER/ICS, Utrecht University, Heidelberglaan 2, 3584 CS Utrecht, The Netherlands

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ABSTRACT

We study effects of explicit and implicit interethnic attitudes on ethnic discrimination in hiring. Unlike explicit attitudes, implicit attitudes are characterised by reduced controllability, awareness or intention. Effects of implicit interethnic attitudes on ethnic discrimination in the labour market remain under-researched. Moreover, previous experiments on the effects of explicit interethnic attitudes on discrimination have important drawbacks. We use data from a laboratory experiment ($n = 272$) consisting of an Implicit Association Test, a questionnaire and a recruitment test in which participants reviewed résumés representing fictitious applicants who varied regarding ethnicity, gender, education and work experience. Participants graded applicants and selected applicants for an interview. Results show that only explicit interethnic attitudes affect discrimination in grades, but both explicit and implicit interethnic attitudes increase discrimination in selection.

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1. Introduction and research problem

A large body of sociological literature has examined prejudiced interethnic attitudes and its causes (Pettigrew and Tropp, 2000; Riek et al., 2006). This emphasis on attitudes is often justified by means of the argument that negative interethnic attitudes and negative intergroup behaviour are closely related. Many studies assume that harbouring negative interethnic attitudes leads to more negative intergroup behaviour. Allport (1954, p. 14), for example, wrote that “It is true that any negative attitude tends somehow, somewhere to express itself in action. Few people keep their antipathies entirely to themselves”. Even more clearly, Levin and Levin (1982, p. 81) stated: “We are interested in prejudice only to the extent that it is related to actual discrimination”.

However, the assumption that negative interethnic attitudes lead to corresponding discriminatory behaviour is not undisputed. On the one hand, there are several studies showing that people’s behaviour towards ethnic out-group members is *not* always in line with their (self-reported) attitudes towards ethnic out-groups (see for example: LaPiere, 1934; Pager and Quillian, 2005). On the other hand, there are studies that *do* find significant effects of interethnic attitudes on interethnic behaviour (e.g., Brannon et al, 1973; Plant and Devine, 2001). Meta-analyses (Dovidio et al., 1996; Schütz and Six, 1996; Talaska et al., 2008) have shown that the average correlation between interethnic attitudes and behaviour is slightly positive.

Social scientists are confronted with the issue of how to make sense of these low correlations. A relatively new line of research that could contribute to gaining a better understanding of this matter is based on the distinction between *explicit and implicit interethnic attitudes*. Explicit attitudes are controllable and expressed with awareness. Implicit attitudes, on the other hand, can be activated without conscious awareness (e.g., Nosek, 2007).

* Corresponding author. Fax: +31 0031 030 253 4405.

E-mail addresses: l.blommaert@uu.nl (L. Blommaert), f.vantubergen@uu.nl (F. van Tubergen), m.coenders@uu.nl (M. Coenders).

Incorporating implicit attitudes in research on interethnic relations circumvents two types of difficulties that plague studies of explicit attitudes. First, explicit attitudes face social desirability problems; respondents may not want to reveal their interethnic attitudes. Second, people may be unable to report their interethnic attitudes accurately because they might not be aware of the attitudes they hold (Nosek, 2005). As such, analysing implicit interethnic attitudes can help us understand when and how attitudes shape behaviour.

The aim of this study is to examine the effects of explicit and implicit interethnic attitudes on discriminatory behaviour towards ethnic minority applicants during hiring procedures. We build upon existing research in several ways. First, studies on ethnic labour market discrimination have largely relied on field experiments (e.g. Bertrand and Mullainathan, 2004; Pager et al., 2009) in which sets of similar résumés or individuals representing fictitious applicants with different ethnic backgrounds are sent to real-life employers in reaction to job vacancies. Differential treatment of the minority and the majority applicant within a set is seen as a case of discrimination. Although these studies provide crucial and convincing evidence regarding whether and to what extent ethnic labour market discrimination occurs, they offer little insight in the mechanisms that lead to discriminatory behaviour. The present study aims to contribute to our understanding of the causes of discrimination by examining the role of interethnic attitudes.

Second, it is generally assumed that both explicit and implicit attitudes may have important implications for actions (e.g., Nosek, 2005; Quillian, 2008). In the past few years, a number of psychological studies have examined the influence of implicit interethnic attitudes on interethnic behaviour (for an overview see: Greenwald et al., 2009). However, these studies dealt with the effect of implicit attitudes on subtle behaviour such as individuals' speech time, speech errors and hesitations, eye contact, smiling, social comments, ignition of conversation, hand and body movements or position and seating distance whilst interacting with an ethnic minority group member, as well as generosity (Dovidio et al., 2002; McConnell and Leibold, 2001; Rudman and Ashmore 2007; Sekaquaptewa et al., 2003; Stepanikova et al., 2011). Together, these studies have shown that people's implicit attitudes and beliefs towards ethnic minorities can indeed affect behaviour (see also Dasgupta, 2004). However, the effects of implicit attitudes on discriminatory behaviour *in the labour market* remain under-researched, despite the fact that scholars have advocated the integration of these attitudes into sociological research on discrimination. For example, sociologist Quillian (2006, p. 299) argued: "research on implicit prejudice, largely developed by psychologists, provides an important new understanding of the basis of discrimination and should be incorporated in sociological accounts". Thus, another way in which the present paper contributes to existing insights is by examining the effect of implicit interethnic attitudes on a type of behaviour which is of key concern to sociologists and economists: discrimination during hiring procedures. So far, only a few studies (Derous et al., 2009; Rooth, 2010; Son Hing et al., 2008) have investigated the effects of explicit and implicit interethnic attitudes on ethnic discrimination in the labour market. In the next session, we elaborate on how we build upon these studies.

Finally, we study discrimination during two phases of hiring procedures: (1) the first evaluation of applicants' résumés upon seeing them for the first time (expressed in grades), and (2) the eventual decision on which applicants to invite for a job interview. Explicit and implicit attitudes may be differently related to these grading and selection processes.

We focus on the Netherlands and in particular on attitudes and discriminatory behaviour towards two ethnic minority groups: Moroccan–Dutch and Turkish–Dutch. These groups form an interesting case because they are the two largest non-Western ethnic minority groups in the Netherlands, and the vast majority (over 95%) of the group members are Muslim. These groups have been the centre of attention in the ongoing debate on the integration of ethnic minorities in the Netherlands. Previous research has shown that attitudes towards immigrants of Moroccan or Turkish origin are more negative than attitudes towards other ethnic minority groups (SCP, 2009; Verkuyten and Kinket, 2000).

2. Previous research, theory and hypotheses

2.1. *Explicit interethnic attitudes and discriminatory behaviour*

As mentioned above, many sociological studies are based on the assumption that prejudiced interethnic attitudes lead to corresponding discriminatory behaviour. This is, however, a much debated issue and has been so for a long time. There are several publications which have shown that people's behaviour towards out-group members is not always in accordance with their self-reported interethnic attitudes. A classical study revealing attitude–behaviour inconsistencies is one by LaPiere (1934), a Stanford sociology professor. In the 1930s, he travelled through the United States with a Chinese couple to see whether they would gain admittance to different types of establishments (e.g., hotels and restaurants). They were accepted in all but one of the 251 businesses that were approached. Six months later, questionnaires asking among other things whether people of the Chinese race would be accepted were sent to the same establishments. Over 91% of them replied that they would not allow Chinese customers to enter.

A more recent demonstration of attitude–behaviour inconsistency is Pager and Quillian's (2005) study in the United States. This study linked employers' attitudes towards Black and White applicants to their hiring decisions in real-life. The authors conducted an experimental audit study of entry-level jobs and matched the information from this field experiment to a telephone survey of the same employers. The results showed that there was no significant correspondence between employers' racial attitudes as expressed in the survey and their actual discriminatory behaviour. Although the survey results showed no difference in the likelihood of hiring Black versus White applicants, results from the field experiment showed large differences by race (Pager and Quillian, 2005). Note that in the LaPiere study respondents discriminated

less than they said they would, conforming to the norm in those days which did not denounce discrimination but instead saw differentiation between individuals of different races as normal or even desirable. By contrast, in the Pager and Quillian study, respondents discriminated *more* than they said they would, which is in line with modern social norms which condemn discriminatory behaviour.

On average the picture which emerges from the body of research on the relations between interethnic attitudes and interethnic behaviour is mixed. Meta-analytical evidence has shown that there are large variations between the effect sizes found in different studies, but overall there is a weak but positive association between interethnic attitudes and interethnic behaviour. Average correlations were found of .32 (Dovidio et al., 1996), .29 (Schütz and Six, 1996), and .26 (Talaska et al., 2008) respectively.

2.2. *Explicit and implicit interethnic attitudes*

Different explanations have been suggested for the fact that the relationship between self-reported interethnic attitudes and interethnic behaviour varies greatly and is generally weak. Well-known theoretical models, for instance, are Ajzen and Fishbein's 'Theory of Planned Behavior' (Ajzen, 1991), and Fazio's 'MODE model' (Fazio, 1990).

In this study however we draw on a new line of research, largely developed by psychologists, which distinguishes between *explicit* and *implicit* interethnic attitudes. Explicit interethnic attitudes are the attitudes that sociologists have long studied by means of items in questionnaires. Explicit attitudes can be controlled and are expressed consciously, with intent and awareness. Over the past years, researchers have increasingly stressed the importance of distinguishing between explicit attitudes and another type of attitude: implicit attitudes (Wittenbrink and Schwartz, 2007). How exactly to interpret implicit attitudes and the way they differ from explicit attitudes is still much debated. Providing a summary of the different interpretations that have been suggested in the literature, Nosek (2007: 65) states that implicit attitudes differ from explicit attitudes "by having at least one of the following characteristics: (a) reduced controllability; (b) lack of intention; (c) reduced awareness of the origins, meaning, or occurrence of a response; or (d) high efficiency of processing".

More specifically, one interpretation is that implicit attitudes reflect accumulated experience that is not available to introspection and may not be wanted or endorsed but is nevertheless attitudinal because of its potential to effect individual perception, judgment, or action (Greenwald and Banaji, 1995). In other words, this explanation entails that people are unaware of their implicit interethnic attitudes and therefore unable to report them accurately. A second interpretation is that explicit self-reports are often affected by social desirability concerns, whereas implicit attitudes are not, or to a much lesser extent (e.g., Fazio and Olson, 2003). A third possible explanation is that explicit and implicit attitudes tap two independent representations that differ with regard to the cognitive effort that is required for their retrieval from memory. The latter interpretation draws upon dual-attitudes models (Wilson et al., 2000; for an application of dual-process theories in sociology of culture see Vaisey, 2008). Finally, some argue that implicit attitudes are influenced by cultural – i.e., extra-personal – knowledge which is distinct from explicit attitudes as such but can still influence behaviour (Karpinski and Hilton, 2001).

A small number of studies examined the soundness of different interpretations regarding implicit attitudes and the way they differ from explicit attitudes (e.g., Gawronski et al., 2006). Although there is not enough evidence to provide definitive support for one of the above explanations, there are some indications as to which of these explanations come closer than the other. First, evidence from several meta-studies supports the idea that implicit and explicit attitudes are distinct but related concepts and both attitudinal. These analyses show that implicit and explicit attitudes were generally positively related, but there is considerable variability in the strength of the correlation (Lane et al., 2007). For example, a meta-analysis by Hofmann and colleagues (Hofmann et al., 2005) reported that implicit–explicit correlations varied between .01 and .47, with a mean correlation of .24. Nosek (2005) and Greenwald et al. (2009) found mean implicit–explicit correlations of .36 and .21, respectively. In addition to this empirical evidence, there is another, intuitively appealing argument which supports the idea that implicit attitudes are distinct from explicit attitudes: participants are often genuinely surprised by their scores on tests measuring their implicit attitudes (c.f., Monteith et al., 2002).

The distinction between explicit and implicit interethnic attitudes could contribute to explaining discrepancies between self-reported interethnic attitudes and interethnic behaviour because implicit attitudes are less susceptible to problems of social desirability or limited accessibility that affect explicit attitudes (Nosek, 2005). If implicit interethnic attitudes are thus able to capture something that explicit attitudes do not, research on implicit attitudes could form a valuable contribution to studies on the relations between interethnic attitudes and discriminatory behaviour. In line with Quillian (2008), we do not expect implicit attitudes to replace explicit attitudes in this regard, but argue that both may influence action.

Since the second half of the 1990s, when psychologists first started publishing about implicit attitudes (e.g., Greenwald et al., 1998), a large body of research on implicit attitudes, their origins and consequences has been accumulating (Wittenbrink and Schwartz, 2007). Studies have repeatedly confirmed that the attitudes that individuals express upon being asked explicitly are not always in line with their attitudes as measured in more indirect, implicit ways (e.g., Greenwald et al., 2009; Hofmann et al., 2005; Lane et al., 2007).

2.3. *Implicit interethnic attitudes and discriminatory behaviour*

Despite the rapidly growing body of research on implicit attitudes, only a few studies have addressed the effects of implicit attitudes on ethnic discrimination in the labour market.

In a pioneering Swedish study, Rooth (2010) examined the effect of implicit and explicit interethnic attitudes on discrimination in real-life hiring situations, by conducting two field experiments and afterwards assessing the employers' attitudes. Results show strong and consistent negative associations between implicit attitudes and the probability that an Arab–Muslim–named applicant was invited for an interview. For explicit attitudes hardly any significant effects were found. Despite forming a major contribution to existing knowledge, this study also has some drawbacks. First, when using field experiment data it is generally difficult to ensure that the measures of discriminatory behaviour and attitudes – collected at different points in time – belong to the same person. Indeed, in Rooth's experiment (as well as in Pager and Quillian's 2005 study) this is an issue. Furthermore, the Rooth study suffered from considerable non-response. Only a small fraction of the recruiters participated in the follow-up study of their explicit and implicit attitudes, because they were never reached, refused or were not able to participate (Rooth, 2010). By contrast, we conducted a laboratory experiment which has some key advantages compared to field experiments (National Research Council, 2004; Falk and Heckman, 2009). In the laboratory setting we can circumvent non-response and ensure that we measure the attitudes and behaviour of the same person. As such, the present research forms a stricter test of the classical hypothesis that attitudes affect discriminatory behaviour in the labour market.

In addition to these field experiments, a few laboratory experimental studies examined effects of implicit and explicit interethnic attitudes on evaluations of fictitious job candidates (Derosus et al., 2009; Son Hing et al., 2008). Derosus and colleagues (2009) studied hiring discrimination against Arab minorities in the United States and the Netherlands. They found no effect of explicit prejudice on job suitability ratings, and only in the Netherlands an effect of implicit prejudice. Son Hing et al. (2008) analysed the effects of explicit and implicit interethnic attitudes on hiring recommendations for a single Asian applicant in Canada. They show that in ambiguous situations participants higher in implicit prejudice gave lower hiring recommendations for the Asian candidate, whereas in non-ambiguous situations implicit prejudice had no significant effect. Again, no effect of explicit prejudice was found.

We build upon these studies in several ways. First, the previous studies were restricted to either job suitability ratings for a limited number of applicants or hiring recommendations of a single applicant. We examine the effects of implicit and explicit attitudes on both grading and selecting applicants, two measures of ethnic labour market discrimination that correspond to different phases in the hiring procedure. In the selection task, subjects are forced to choose between applicants, a setting which not only closely resembles actual hiring procedures, but that may also affect the relationship between explicit and implicit attitudes and discriminatory behaviour.

Secondly, participants in our experiment are exposed to a much larger number of minority and majority applicants which differ systematically in gender, level of education and work experience. Whereas Derosus et al. (2009) used four applicant résumés and Son Hing et al. (2008) used one or two applicant résumés, subjects in our recruitment test have to evaluate 24 different résumés for one job opening, providing a much more realistic setting that corresponds with actual recruitment procedures. Finally, we apply a larger sample size than previous studies.

3. Data and measurement

The laboratory experiment was conducted amongst 288 students in Utrecht, the Netherlands, in February and March 2010. Of these participants, 203 were university students and 85 attended higher vocational education. Students of whom at least one parent was born in Morocco or Turkey or who were born in these countries themselves ($n = 16$) were excluded from the analyses. Thus, 272 respondents were included in the analyses.

The study consisted of three elements: (1) a recruitment test, to measure discriminatory behaviour; (2) a questionnaire, to measure explicit interethnic attitudes; and (3) an Implicit Association Test (IAT), to measure implicit interethnic attitudes. In all cases, the recruitment test was the first element, followed by the other two elements. To overcome design effects, we randomised the order of the survey and the IAT.

In the recruitment test we assessed discrimination of applicants of either Moroccan or Turkish origin, in comparison to native Dutch applicants. We applied a between-subjects design; respondents were either assigned to the condition measuring discrimination of Moroccan–Dutch applicants ($n = 129$) or to the condition measuring discrimination of Turkish–Dutch applicants ($n = 143$). However, because of the small number of subjects in each condition and the resulting lack of statistical power, we combined these two conditions.

3.1. Ethnic discrimination in hiring procedures

The recruitment test measures discriminatory behaviour towards Moroccan–Dutch or Turkish–Dutch applicants during hiring procedures. In this test, participants were presented with descriptions of two fictitious jobs and two sets of 24 fictitious résumés. We presented two types of jobs with different educational requirements. One vacancy was for a position as a customer advisor at a bank, for which either intermediate or higher vocational education was required. The other vacancy was for a position as recruiter of a human resource management organisation. For this job, higher vocational education or a university degree was required.

Participants were asked to read one of the job descriptions and the accompanying set of résumés and assess the applicants in two ways. First they assigned a grade representing the candidates' suitability for the job to each résumé (on a scale

of 0–10) and then they selected three applicants that they would like to invite for a (fictitious) job interview (cf., Derous 2007). Subsequently, participants were asked to read the other job description and accompanying set of résumés and complete the same tasks as for the first set. The order in which the two job descriptions and accompanying sets of résumés were presented to the participants was randomised.

For each job, there was a set of 24 résumés. Within each set, there were 16 résumés in which ethnicity, gender, level of education and work experience were varied systematically. These 16 applicants represent all possible combinations of these four features (see Table A1, Appendix). In other words, eight of these résumés belonged to native Dutch applicants and eight of them belonged to either Moroccan–Dutch or Turkish–Dutch applicants. For each Moroccan–Dutch or Turkish–Dutch applicant, there is one native Dutch applicant who is completely comparable in all respects but ethnicity.

In addition to these 16 completely comparable résumés, another eight applicants were added to the set in order to make the division of ethnic majority and minority applicants more realistic. These last eight résumés included several more native Dutch applicants, as well as minority applicants belonging to a different ethnic group than the previous eight minority applicants in that particular set. The other ethnic minority groups were: Surinamese, Dutch Antillean and (depending on the Moroccan–Dutch/Turkish–Dutch condition) either Turkish–Dutch or Moroccan–Dutch (see Table A1, Appendix). Note that the purpose of adding these résumés was merely to avoid suspicion about the division between minority and majority applicants amongst the participants. They were not considered in the analyses. During the experiment, we presented the majority and minority applicants' résumés to participants in mixed order.

The ethnicity of the applicants was signalled by means of the applicants' names (which were included in the headers of the résumés as follows: "CV first name family name") and their nationality (all applicants had the nationality of the country from which their parents came, although all of them were born in the Netherlands). The only exceptions were the Dutch Antillean applicants. Because people born on the Dutch Antilles automatically receive the Dutch nationality, these applicants' place of birth was a municipality on the Dutch Antilles.

The applicants' educational levels varied between intermediate vocational education and higher vocational education (in case of the advisor job) or between higher vocational education and university (in case of the recruiter job). All of them followed their education in the Netherlands. Work experience varied between none (just completed education) and around one year of work experience after having completed the educational career. Finally, the résumés included information on date and place of birth. The applicants for the advisor job were between 22 and 24 years old; the applicants for the recruiter job were between 23 and 25 years old. All of them were born in the Netherlands, and thus belonged to the 'second generation' (except for the applicants from the Dutch Antilles, as mentioned above).

Before constructing our dependent variables, we checked the data for any possible cases which might disturb our results because of odd answer patterns. For example, participants might have assigned grades or selected résumés on a random basis instead of looking at the résumés features. Alternatively, due to 'fatigue', participants might take their task serious for the first number of résumés but lose their motivation or concentration later on. To identify such cases, we looked at how often participants assigned the same grade during the experiment, the possible effect of the order in which résumés were presented on the average grades and their standard deviation, and the grades that were assigned to résumés that were selected or not. Based on these tests, we found no cases which needed to be removed from the analyses.

Based on the recruitment test, we constructed two measures of discriminatory behaviour towards Moroccan–Dutch or Turkish–Dutch applicants. The first measure was based on the grades that participants assigned to the completely comparable résumés. The variable was constructed by conducting an Ordinary Least Squares regression analysis of the grades on the ethnicity of the 'applicants'. This was done for each participant separately. Because of the design of the résumés (i.e. all combinations of applicant features being represented in each set of résumés), the effects of ethnicity were already controlled for gender, education, and work experience. The coefficients for the Moroccan–Dutch and Turkish–Dutch dummy variables (compared to native Dutch, the reference category) were saved. The variable is coded in such a way that a higher score represents a larger effect of ethnicity on grades or, in other words, more ethnic discrimination.

The second measure of discriminatory behaviour was based on whether or not an applicant was selected for a job interview (in this case, all résumés were taken into account). Per respondent we counted the number of Moroccan–Dutch or Turkish–Dutch applicants that were selected. Because participants were asked to select six applicants in total (three per set of résumés; two sets of résumés) and one-third of the applicants were of Moroccan or Turkish origin, we coded situations in which less than two Turkish–Dutch or Moroccan–Dutch applicants were selected as 'discrimination'. Situations in which two Turkish–Dutch or Moroccan–Dutch applicants were selected were coded as 'no discrimination'. Finally, situations in which more than two Turkish–Dutch or Moroccan–Dutch applicants were selected were coded as 'positive discrimination'.

3.2. *Explicit interethnic attitudes*

We measured explicit interethnic attitudes by means of two sets of questions in the questionnaire. The first measure is based on two questions containing 'feeling thermometers', which are intended as global measures of out-group attitudes (e.g., Verkuyten, 2005). These questions asked participants to indicate how warm or cold they feel towards Moroccans or Turks on a scale from 0 to 100 (0 being very cold or negative; 100 being very warm or positive).

The second measure of explicit interethnic attitudes was computed as the mean score on nine questions which assessed attitudes towards Muslims. Participants were asked to indicate on a 5-point scale (ranging from 'totally disagree' to 'totally agree') to what extent they agree with nine statements about Muslims or Islam (e.g., 'Most Muslims have no respect for gay

Table 1

Descriptive statistics. Source: Laboratory experiments of hiring practices amongst Dutch students 2010.

	Minimum	Maximum	Mean	Std. deviation
Ethnic discrimination in grades	−0.500	2.000	0.095	0.263
Discrimination in selection for job interview	−1.000	1.000	0.044	0.747
Implicit interethnic attitudes	−0.694	1.428	0.499	0.369
Thermometer	0.000	90.000	52.658	19.998
Attitudes towards Muslims	0.220	3.670	1.861	0.668

n = 272.

people', 'Islam is a backward religion', 'Muslim women who wear head scarves do not adjust to our society'). These items form a reliable scale (Cronbach's alpha: 0.85). Considering that the vast majority of the Moroccan–Dutch and Turkish–Dutch population are Muslim (SCP, 2009), this is a relevant measure of explicit attitudes towards Moroccan and Turkish immigrants in the Netherlands (cf. Sniderman and Hagendoorn, 2007).

Note that the feeling thermometer is a more affective measure which reflects respondents' *feelings* towards Turks and Moroccans. By contrast, the attitudes towards Muslims scale is based on stereotypical images. In this respect these two measures of explicit attitudes complement each other.

3.3. Implicit interethnic attitudes

To measure implicit interethnic attitudes we applied an Implicit Association Test (e.g., Wittenbrink and Schwartz, 2007). The IAT is the most widely used method to assess implicit attitudes and has proven to be a valid measure (see e.g., Greenwald et al., 2009). We used a 7-stage version of the test which was translated into Dutch and adapted so that it referred to the ethnic minority groups on which we focus.

As was the case for the recruitment test, there were two versions of the IAT, assessing implicit attitudes towards either Turks or Moroccans. Half of the participants in the study were presented with a native Dutch versus Moroccan–Dutch IAT and the other half with a native Dutch versus Turkish–Dutch IAT.

Implicit Association Tests assess the strengths of associations between concepts by observing response latencies in a (computer-administered) categorisation task. The basic principle of an IAT is that stimuli (words, symbols, or pictures) which are exemplars of contrasted concepts appear on the computer screen. In this case, the contrasted concepts were native Dutch versus Moroccan or Turkish (represented by male names¹), and positive versus negative (represented by words with positive or negative valence). Subjects rapidly classify these stimuli by pressing one of two keys on a computer keyboard.

During the test, participants are presented with several blocks in which the pairings of the concepts differ. In some blocks, the pairings are *stereotype-consistent*, meaning that Moroccan or Turkish stimuli are paired (i.e., share a response key) with negative stimuli, whereas native Dutch stimuli are paired with positive stimuli. In other blocks, the pairings are *stereotype-inconsistent*: Moroccan or Turkish stimuli are paired with positive stimuli and native Dutch stimuli are paired with negative stimuli.

Subjects' responses will be faster and more accurate when categories that are closely associated share a response (key) as compared to when they do not. The IAT measure is based on differences in average latency between stereotype-consistent and stereotype-inconsistent tasks. In our case, faster responses for the *native Dutch + positive* and *Moroccan or Turkish + negative* pairing task than for the *Moroccan or Turkish + positive* and *native Dutch + negative* pairing task indicate a stronger association of Moroccan or Turkish than native Dutch with negative valence, or – in other words – a negative attitude towards Moroccan or Turkish minority group members. We computed a measure of implicit attitudes using the improved scoring algorithm described in Greenwald et al. (2003). Higher scores on this variable indicate a stronger negative attitude towards Moroccans or Turks compared to native Dutch.

Table 1 presents the descriptive statistics for all variables in our analyses. Scores for ethnic discrimination in grades vary between −0.50 and 2.00, with a mean score of almost 0.10. This indicates that ethnic minority applicants on average were given about 0.10 grade point lower than comparable native Dutch applicants. The fact that the minimum score is below zero indicates that there were also respondents who, on average, gave higher grades to minority applicants than to native Dutch applicants. In other words, *positive* discrimination in grading also occurred. For discrimination in selection, no discrimination (0) is the reference category. In addition to respondents who discriminated (and were assigned the value of 1 on this variable), our data showed that there were respondents who favoured ethnic minority applicants over native Dutch applicants. In other words, in addition to discrimination we found evidence of positive discrimination in selection (these cases were assigned a score of −1). In the subsequent analyses, positive discrimination in selection will be treated as a separate outcome, distinct from 'no discrimination' and 'discrimination'. Note that the mean value is about 0.04, indicating that discrimination occurred more often than positive discrimination.

¹ The native Dutch names were: Stijn, Jan, Jaap, Klaas, Joost, Piet, Sander, Maarten, Jeroen, Michiel; the Moroccan names were: Ibrahim, Achmed, Mustafa, Abdul, Mohammed, Aziz, Youssef, Tarik, Rachid, Adil; and the Turkish names were: Ali, Ahmet, Mehmet, Bülent, Hakan, Fatih, Levent, Haydar, Murat, Hasan.

Scores for implicit interethnic attitudes vary between -0.69 and 1.43 , with a mean score of about 0.50 . This indicates that respondents on average showed moderate to strong negative implicit attitudes towards Moroccans or Turks. There were, however, large variations between respondents. Some of them displayed strong *positive* implicit interethnic attitudes; others strong *negative* interethnic attitudes. Moving on to the measures of explicit interethnic attitudes, the descriptive statistics for the feeling thermometer show that scores vary between 0 and 90 , indicating that both extremely negative and rather positive feelings towards Turks and Moroccans were reported. The average score was 52.66 , which represents a somewhat positive attitude. The scores for attitudes towards Muslims vary between 0.22 and 3.67 on a scale ranging from 0 (most positive) to 5 (most negative). The mean score is 1.86 , indicating that on average the respondents' explicit attitudes towards Muslims are neither extremely positive nor extremely negative.

4. Results

Before we turn to the effects of explicit and implicit interethnic attitudes on discriminatory behaviour, we will briefly look at the relationships between explicit and implicit interethnic attitudes.

4.1. The relationship between explicit and implicit interethnic attitudes

Table 2 presents the correlations between explicit and implicit attitudes. The correlation between implicit interethnic attitudes and the (explicit) thermometer is weakly negative (keep in mind that a higher score on the thermometer represents a more positive attitude). The association between implicit interethnic attitudes and negative attitudes towards Muslims is weakly positive. These findings are in line with the modest correlations which have been found in several meta-analytical studies (e.g., Greenwald et al., 2009; Hofmann et al., 2005).

4.2. The effects of explicit and implicit interethnic attitudes on discrimination

Turning to the effects of explicit and implicit interethnic attitudes on discrimination, we will first discuss the results for discrimination in *grades* and subsequently those for discrimination in *selection* for a job interview. To analyse the effects of interethnic attitudes on discrimination in grades, we conducted ordinary least squares regression analyses. The results of these analyses are presented in Table 3, which displays standardised effects.

In Model 1 to Model 3, we included the predictors one at a time. Results show that implicit interethnic attitudes do not have a significant effect on ethnic discrimination in grades.² By contrast, both measures of explicit interethnic attitudes do have a significant effect on ethnic discrimination in grades. Respondents with a lower score on the thermometer (indicating negative feelings towards Moroccans or Turks) are more likely to assign lower grades to ethnic minority applicants than to comparable native Dutch applicants. Similarly, respondents who hold more negative attitudes towards Muslims are more likely to discriminate against ethnic minority applicants in terms of grades.

In Model 4, all predictors were included simultaneously. Results show that only the effect of attitudes towards Muslims remains significant, although the other effects are still in the expected directions. Apparently, implicit interethnic attitudes do not affect ethnic discrimination in this phase of the hiring procedure, whereas explicit attitudes do.³

Regarding discrimination in the *selection* of applicants for a job interview, we analysed the likelihood that respondents discriminated against ethnic minority applicants and the likelihood that they positively discriminated ethnic minority applicants (i.e. favoured minority applicants compared to native Dutch applicants) by means of multinomial logistic regression analyses. The results of these analyses are shown in Table 4.

In Model 1 to Model 3, we included the predictors one by one. Results show that, in contrast to discrimination in grades, both implicit and explicit interethnic attitudes have a significant effect on discrimination in selection. Stronger negative implicit interethnic attitudes increase the likelihood of discrimination, but do not significantly decrease the likelihood of positive discrimination in selection (Model 1). Stronger negative explicit interethnic attitudes (as indicated by lower scores on the thermometer or higher scores on the attitudes towards Muslims measure) increase the likelihood of discrimination and decrease the likelihood of positive discrimination in selection (Model 2 and 3).

In Model 4, we included all attitudinal measures simultaneously. For discrimination, the effects of all three predictors remain significant and in the expected direction. Negative implicit and explicit interethnic attitudes (again, indicated by lower scores on the thermometer or higher scores on the attitudes towards Muslims scale) increase the likelihood of ethnic

² IAT scores confound anti-minority and pro-majority group attitudes. They may therefore affect the grading of minority group members, majority group members or both. To examine this, we conducted an additional analysis in which we estimated the effect of attitudes on grades separately for majority and minority applicants. Results of this analysis provide a similar picture: implicit interethnic attitudes do not have a significant effect on the grades that were assigned to either the majority or the minority applicants.

³ The R-square values in Table 3 (in particular) and Table 4 are rather low. Our models are, however, very parsimonious; we focus solely on interethnic attitudes (explicit and implicit). Furthermore, the differences between participants' scores on both dependent variables are relatively modest, which is most likely related to the fact that our participants form a rather homogeneous group of students in higher education that are generally rather tolerant. This may mean that our results are an underestimation of the differences in discriminatory behaviour as well as the predictive power of interethnic attitudes which one would find amongst the general public.

Table 2

Pearson's correlations between implicit and explicit measures of interethnic attitudes. *Source:* Laboratory experiments of hiring practices amongst Dutch students 2010.

	Implicit interethnic attitudes	Thermometer	Negative attitudes towards Muslims
Implicit interethnic attitudes		–0.154*	0.116*
Thermometer	–0.154*		–0.502**
Negative attitudes towards Muslims	0.116*	–0.502**	

n = 272.

Significance: ***p* < .01; **p* < .05; ~*p* < .10 (2-tailed).

Table 3

Ordinary least squares regression analysis of ethnic discrimination in grades: standardised effects (*t*-values between brackets). *Source:* Laboratory experiments of hiring practices amongst Dutch students 2010.

	Model 1	Model 2	Model 3	Model 4
Implicit interethnic attitudes	0.039 (0.639)			0.007 (0.117)
Thermometer		–0.152** (–2.523)		–0.040 (–0.578)
Negative attitudes towards Muslims			0.242** (4.091)	0.221** (3.220)
<i>R</i> -square	0.002	0.023	0.058	0.060

n = 272.

Significance: ***p* < .01; **p* < .05; ~*p* < .10 (1-tailed).

Table 4

Multinomial logistic regression analysis of ethnic discrimination (D) and positive discrimination (PD) in selection for job interview: odds ratios (Wald statistic between brackets). *Source:* Laboratory experiments of hiring practices amongst Dutch students 2010.

	Model 1		Model 2		Model 3		Model 4	
	D	PD	D	PD	D	PD	D	PD
Implicit interethnic attitudes	2.304* (4.110)	0.705 (0.751)					2.053* (2.843)	0.905 (0.057)
Thermometer			0.979** (8.454)	1.040** (16.228)			0.986* (2.850)	1.036** (10.862)
Negative attitudes towards Muslims					1.842** (7.352)	0.495** (7.817)	1.449~ (2.108)	0.705 (1.549)
Nagelkerke Pseudo <i>R</i> -Square		0.030		0.162		0.100		0.194
Cox and Snell Pseudo <i>R</i> -square		0.027		0.143		0.088		0.171
McFadden pseudo <i>R</i> -square		0.013		0.072		0.043		0.088
Chi-square (df)		7.418 (2)		41.850 (2)		25.190 (2)		51.153 (6)

Reference category: no discrimination.

n = 272.

Significance: ***p* < .01; **p* < .05; ~*p* < .10 (1-tailed).

discrimination in selection for a job interview. For positive discrimination, however, the effect of attitudes towards Muslims – although in the expected direction – is no longer significant; the effect of the thermometer does remain significant.

In sum, when looking at discrimination in selection, there is an important difference between discrimination as such (which is influenced by both implicit and explicit interethnic attitudes) and positive discrimination (which is only affected by explicit attitudes).⁴

⁴ In addition to the analyses that combined the outcomes for the Moroccan-Dutch and Turkish-Dutch condition, we conducted separate analyses in which we checked whether the results are comparable across these ethnic groups. These showed that our findings are robust; the analyses reveal similar patterns for both conditions. There are some minor and non-systematic differences, mainly due to some relationships becoming insignificant when the analyses are conducted for the groups separately. Specifically, the effect of implicit interethnic attitudes is non-significant and the effect of (explicit) attitudes towards Muslims on discrimination in selection is somewhat larger in the Turkish-Dutch condition. These differences are likely the result of the relatively small number of participants in our experiment. Therefore, they should be interpreted with caution.

5. Conclusion

This paper examined the effects of explicit and implicit interethnic attitudes on ethnic discrimination in hiring, by means of a laboratory experiment. We tested the classical hypothesis that interethnic attitudes affect this specific type of interethnic behaviour and improved upon previous research in several ways. First, in contrast to most previous field experiments on ethnic discrimination in the labour market, this study aimed to increase our knowledge about the causes of ethnic discrimination in the labour market, by looking at the influence of interethnic attitudes. Second, in addition to explicit attitudes, we looked at the influence of *implicit* attitudes on ethnic discrimination in hiring decisions in the labour market, a type of discriminatory behaviour which has so far received little attention in psychological studies on effects of explicit and implicit attitudes on behaviour. For explicit interethnic attitudes, we put the above mentioned hypothesis to a more rigorous test than previous studies based on field experiment data had done so far. Third, compared to previous laboratory experiments, our subjects had to evaluate a much larger number of résumés. What is more, we examined discrimination in two different phases of the hiring procedure: in job suitability ratings or *grades* as well as in *selecting* candidates for a job interview. Taken together, these characteristics of our recruitment test provide a more realistic portrayal of an actual recruitment procedure.

Our results showed that discriminatory behaviour towards ethnic minority applicants in terms of grades is influenced only by explicit interethnic attitudes. Implicit interethnic attitudes do *not* play a role at this stage of the hiring procedure. A different pattern emerges when we look at discrimination in a later phase in the procedure: selection for a job interview. Both explicit and implicit negative interethnic attitudes are related to discrimination of ethnic minority applicants in terms of invitations for a job interview.

Remarkably, we also found *positive* discrimination in selection; sometimes ethnic minority applicants were over-represented amongst those who were invited for a job interview. Moreover, we found that positive discrimination in selection was influenced by explicit but *not* implicit interethnic attitudes. The latter result forms an interesting puzzle to focus on in future studies.

Previous studies found little evidence of an effect of explicit interethnic attitudes on discriminatory behaviour in the labour market. Derous et al. (2009) and Son Hing et al. (2008) found no effect of an explicit Modern Racism Scale on respectively job suitability ratings and hiring recommendations. Rooth (2010) found positive, but mostly not significant, effects of employers' explicit attitudes and stereotypes on call-back rates for a job interview. In our study however we found moderate, yet significant effects of explicit attitudes on discrimination, both in grading and selection. These different results across studies may be due to differences in context, the applied measures for explicit attitudes, and sample size.⁵ Additionally, our recruitment test, in which subjects had to evaluate a large number of résumés and thereafter select the best candidates, differs from previous laboratory studies in which subjects had to evaluate only one or two (Son Hing et al., 2008) or four résumés (Derous et al., 2009). When subjects have to grade a single résumé of a minority applicant, or have to compare a few résumés that only differ in ethnicity, subjects may be more inclined to socially desirable behaviour. Hence, their (lack of) discriminatory behaviour may not be in line with their negative attitudes. In our recruitment test subjects also had to evaluate strictly comparable minority and majority applicants, but since we presented subjects with 24 résumés, we were able to systematically vary other applicant characteristics (educational level, work experience, and gender) as well. Social desirability may therefore be less of a concern in our measurement of discriminatory behaviour, which might explain the relationship between explicit negative attitudes and discriminatory behaviour.

Next we turn to the effect of implicit interethnic attitudes. We found no significant relation between implicit attitudes and discrimination in grading of applicants. Derous et al. (2009) likewise found no effect in the United States. They did find an effect in the Netherlands, but only when the job position was a lower social status job with no client contact (i.e. sorter). In our study, the job positions were of intermediate or higher social status. Hence, our results are in line with their findings. Our result is also in line with Son Hing et al. (2008) who found that implicit prejudice is not related to hiring recommendations when the applicant was well qualified for the position, as was the case in our recruitment test. Son Hing and colleagues only found an effect of implicit attitudes when the applicant was neither obviously qualified, nor clearly unqualified.

One of the most interesting results of our study is that implicit attitudes are related to discrimination in selection for a job interview, but not to discrimination in suitability ratings of applicants. Several theoretical models could possibly explain these findings. For example, both the MODE model (Fazio, 1990) and the dual-attitudes model (Wilson et al., 2000) predict that explicit and implicit attitudes will affect behaviour differently because conscious processes only shape the attitude-behaviour relationship if an individual has both the opportunity and the motivation to control his or her behaviour. Support for these predictions has been provided by several laboratory experiments which found that explicit attitudes typically predict more deliberative behaviour such as verbal friendliness whereas implicit attitudes predicted more spontaneous behaviour like nonverbal friendliness (e.g., Dovidio et al., 2002; McConnell and Leibold, 2001). On the other hand, however, there is evidence showing that implicit attitudes also predict more deliberative actions (e.g., Greenwald et al., 2009). One possible reason for this is that complex behaviour may involve both automatic and controlled processes which may interact with each other (c.f., Son Hing et al., 2008). According to this line of reasoning, relatively

⁵ The sample size in the studies of Derous et al. (2009), Son Hing et al. (2008) and Rooth (2010) are smaller. Rooth (2010: 529) reports that the point estimates of some of the effects of explicit measures are large, indicating that explicit attitudes might be important, but the effects were estimated with a low precision.

undemanding deliberate actions may be affected only by explicit attitudes and more complex decisions will be influenced by both explicit and implicit attitudes. We could interpret the difference between discrimination in grades and in selection in our experiment in terms of the complexity of the task. Evaluating applicants' suitability for a job may be seen as a relatively straightforward task in which one has to take a limited amount of information into account (i.e., one applicant's educational level, work experience, gender and ethnicity). Conversely, selecting a small number of applicants from a larger pool of candidates for an interview can be seen as a more complex decision. Comparing a large number of multifaceted résumés involves processing a large amount of information simultaneously. If we follow this line of reasoning, our results neatly follow the prediction formulated above.

In addition, we found interesting differences in the effects of implicit attitudes on discrimination and positive discrimination in selection. Whereas discrimination was related to both explicit and implicit attitudes, positive discrimination was only affected by explicit attitudes. A possible interpretation in line with the abovementioned argumentation is that those who are inclined to positively discriminate consider their behaviour more consciously and deliberately. Despite the fact that negative stereotypes regarding ethnic minorities are rather common in the public and political debate, these subjects chose to favour minority applicants over native Dutch applicants. If we consider this as a more deliberative action, this could explain why positive discrimination was not related to implicit attitudes, but only to (less negative) explicit attitudes.

We see our study as a starting point for more systematic research on the impact of explicit and implicit interethnic attitudes on discriminatory behaviour in the labour market. There are several ways to build upon our research. First, there are still many questions regarding the exact role of explicit and implicit interethnic attitudes. Little is known about under which conditions implicit and explicit attitudes play a role and how explicit and implicit interethnic attitudes may interact in shaping behaviour under different circumstances. Future research should try to derive and test more specific hypotheses about the effects of these two types of attitudes on interethnic behaviour (cf., Son Hing et al., 2008) in order to improve our understanding of the attitudinal mechanisms that underlie discrimination in the labour market.

Second, follow-up studies are needed amongst employers or recruiters. Our data were collected amongst students attending higher education. Previous research (e.g. Coenders and Scheepers, 2003) has shown that higher educated people generally hold less negative attitudes towards minority groups. The fact that we found significant effects of explicit and implicit interethnic attitudes on discrimination in hiring even amongst such a relatively tolerant group provides strong support for our line of reasoning. We expect that research amongst employers or recruiters will yield even stronger effects.

Third, our laboratory experiment had the clear advantage that it enabled us to control and manipulate résumé characteristics and to link an individual's discriminatory behaviour to one's interethnic attitudes. However, the recruitment test took place in an artificial setting without any real-life consequences for employers or organisations. Under these circumstances, respondents may react differently (e.g., in a more tolerant way) than in real life. Given that the researcher addresses the difficulties associated with field experiment designs such as used by Rooth (2010), another option for future research is to conduct a field experiment which combines measures of explicit and implicit interethnic attitudes with behaviour during real-life hiring procedures.

Fourth, in our study, decisions about which applicants to invite for a job interview were made by each participant independently. Yet, in real life such decisions are often made by groups of individuals (e.g. selection committees). Therefore, an interesting addition to our design would be to have participants form small groups which have to reach agreement about which candidates to invite for a job interview. This could shed light on how group decision making processes moderate the effects of personal explicit and implicit attitudes towards ethnic minorities.

Finally, we focused on positions for which either an intermediate or higher vocational degree or a higher vocational or university degree was required. Previous field experiments on labour market discrimination (Bertrand and Mullainathan, 2004; Pager et al., 2009) have mostly focussed on entry-level or manual jobs. A field experiment in the Netherlands (SCP, 2010) indicated that ethnic discrimination occurs more often within the lower levels of the labour market. Our results may thus be regarded as a conservative estimation of the prevalence of ethnic discrimination in the labour market as a whole. Moreover, effects of explicit and implicit interethnic attitudes on discriminatory behaviour may be stronger when lower level jobs are concerned. In the lower level segments of the labour market, the résumés of minority applicants are more in line with the stereotypical image of minorities as lower educated and of lower social class. Therefore, résumés of lower educated ethnic minority applicants provide more stereotype-consistent information which may increase the salience of interethnic stereotypes and attitudes (cf. Wheeler and Petty, 2001). Future research could examine such predictions.

To conclude, our findings support Allport's (1954) statement that attitudes have consequences for actions. However, we are able to draw more specific conclusions with regard to the role of different types of attitudes in shaping behaviour. As Nosek (2005) and Quillian (2006) argued: not only *explicit* interethnic attitudes influence actions; *implicit* attitudes have important behavioural consequences as well. Hence, our results underscore Quillian's (2008, p. 7) statement that "rather than replacing explicit attitudes, implicit attitudes form a second level of attitudes that become manifest in certain behaviours and contexts".

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Table A1

Overview of fictitious applicants and their characteristics.

Nr	Recruiter job					Advisor job				
	Name	Ethnicity	Gender	Education	Experience	Name	Ethnicity	Gender	Education	Experience
1	Sanne de Groot	Dutch	Female	High	Little	Fleur Timmer	Dutch	Female	High	None
2	Marieke Zijlstra	Dutch	Female	High	None	Anke Meijerink	Dutch	Female	High	Little
3	Maartje Janssen	Dutch	Female	Low	Little	Marloes van Dijk	Dutch	Female	Low	None
4	Femke van Leeuwen	Dutch	Female	Low	None	Lotte Smits	Dutch	Female	Low	Little
5	Jeroen Willemse	Dutch	Male	High	Little	Sander Vos	Dutch	Male	High	None
6	Daan Kuipers	Dutch	Male	High	None	Thijs Aalbers	Dutch	Male	High	Little
7	Bas de Wit	Dutch	Male	Low	Little	Maarten De Vries	Dutch	Male	Low	None
8	Michiel van den Broek	Dutch	Male	Low	None	Wouter Brinkman	Dutch	Male	Low	Little
9a	Zeynep Topal	Turkish–Dutch	Female	High	Little	Ayşe Güven	Turkish–Dutch	Female	High	None
10a	Nesrin Ünsal	Turkish–Dutch	Female	High	None	Öslem Karan	Turkish–Dutch	Female	High	Little
11a	Gizem Ayhan	Turkish–Dutch	Female	Low	Little	Nuray Çörtüz	Turkish–Dutch	Female	Low	None
12a	Elvan Oktay	Turkish–Dutch	Female	Low	None	Yildiz Erdem	Turkish–Dutch	Female	Low	Little
13a	Ümit Korkmaz	Turkish–Dutch	Male	High	Little	Emre Çetin	Turkish–Dutch	Male	High	None
14a	Engin Öcalan	Turkish–Dutch	Male	High	None	Serhan Erkin	Turkish–Dutch	Male	High	Little
15a	Mehmet Yalçın	Turkish–Dutch	Male	Low	Little	Erdal Aydogdu	Turkish–Dutch	Male	Low	None
16a	Fatih Okur	Turkish–Dutch	Male	Low	None	Bülent Cosar	Turkish–Dutch	Male	Low	Little
9b	Fatima Haddou	Moroccan–Dutch	Female	High	Little	Hakima Alaoui	Moroccan–Dutch	Female	High	None
10b	Bahar Abdellah	Moroccan–Dutch	Female	High	None	Zainab Alami	Moroccan–Dutch	Female	High	Little
11b	Naima Tahiri	Moroccan–Dutch	Female	Low	Little	Samira Yacoubi	Moroccan–Dutch	Female	Low	None
12b	Safia Bakkali	Moroccan–Dutch	Female	Low	None	Aisha Ben Allal	Moroccan–Dutch	Female	Low	Little
13b	Kamal Idrissi	Moroccan–Dutch	Male	High	Little	Samir Mahmoud	Moroccan–Dutch	Male	High	None
14b	Munir Amrani	Moroccan–Dutch	Male	High	None	Rashid Adlouni	Moroccan–Dutch	Male	High	Little
15b	Driss Bennani	Moroccan–Dutch	Male	Low	Little	Adil Hamdaoui	Moroccan–Dutch	Male	Low	None
16b	Mohammed Yassir	Moroccan–Dutch	Male	Low	None	Murad El Morabet	Moroccan–Dutch	Male	Low	Little
17	RenskeToorenburg	Dutch	Female	High	Little	Roos van Veen	Dutch	Female	High	None
18	Ronda Domacasse	Antillean	Female	High	None	Kathelijne Blom	Dutch	Female	High	Little
19	Jasmijn Hamer	Dutch	Female	Low	Little	Rabiah El Zhar/Emine Uzülmez	Moroccan–/Turkish–Dutch	Female	Low	None
20	Letitia Grootfaam	Surinamese	Female	Low	None	Boukje Kramer	Dutch	Female	Low	Little
21	Roel van den Brink	Dutch	Male	High	Little	Bryan Debisarun	Surinamese	Male	High	None
22a/b	Yunis Ammi/Hakan Buruk	Moroccan–/Turkish–Dutch	Male	High	None	Matthijs Jonkers	Dutch	Male	High	Little
23	Teun Schipper	Dutch	Male	Low	Little	Devon Janga	Antillean	Male	Low	None
24	Joris Ouwehand	Dutch	Male	Low	None	Remco Meijer	Dutch	Male	Low	Little

Note: Participants in the Turkish–Dutch condition were presented with résumés 1–8, 9a–16a and 17–24; participants in the Moroccan–Dutch condition were presented with résumés 1–8, 9b–16b and 17–24.

Appendix A

See Table A1.

References

- Ajzen, I., 1991. The theory of planned behavior. *Organizational Behavior and Human Decision Processes* 50, 179–211.
- Allport, G.W., 1954. *The nature of prejudice*. Addison-Wesley, Reading, Massachusetts.
- Bertrand, M., Mullainathan, S., 2004. Are Emily and Greg more employable than Lakisha and Jamal? A field experiment on labor market discrimination. *The American Economic Review* 94, 991–1013.
- Coenders, M., Scheepers, P., 2003. The effect of education on nationalism and ethnic exclusionism: an international comparison. *Political Psychology* 24, 313–343.
- Brannon, R., Cyphers, G., Hesse, S., Hesselbart, S., Keane, R., Schuman, H., et al., 1973. Attitudes and action: a field experiment joined to a general population survey. *American Sociological Review* 38, 625–636.
- Dasgupta, N., 2004. Implicit ingroup favouritism, outgroup favouritism, and their behavioral manifestations. *Social Justice Research* 17, 143–169.
- Deros, E., 2007. Naamdiscriminatie bij cv-screening [name discrimination in cv-screening]. *Tijdschrift voor Arbeidsvraagstukken* 23, 365–379.
- Deros, E., Nguyen, H.-H., Ryan, A.M., 2009. Hiring discrimination against Arab minorities: interactions between prejudice and job characteristics. *Human Performance* 22, 297–320.
- Dovidio, J.F., Brigham, J.C., Johnson, B.T., Gaertner, S.L., 1996. Stereotyping, prejudice, and discrimination: another look. In: Macrae, C.N., Hewstone, M., Stangor, C. (Eds.), *Foundations of stereotypes and stereotyping*. Guilford, New York, pp. 276–319.
- Dovidio, J.F., Kawakami, K., Gaertner, S.L., 2002. Implicit and explicit prejudice and interracial interaction. *Journal of Personality and Social Psychology* 82, 62–68.
- Falk, A., Heckman, J.J., 2009. Lab experiments are a major source of knowledge. *Science* 326, 535–538.
- Fazio, R.H., 1990. Multiple processes by which attitudes guide behaviour: the MODE model as an integrative framework. In: Zanna, M.P. (Ed.), *Advances in experimental social psychology*, vol. 23. Academic Press, San Diego, CA, pp. 75–109.
- Fazio, R.H., Olson, M.A., 2003. Implicit measures in social cognition research: their meaning and use. *Annual Review of Psychology* 54, 297–327.
- Gawronski, B., Hofmann, W., Wilbur, C.J., 2006. Are “implicit” attitudes unconscious? *Consciousness and Cognition* 15, 485–499.
- Greenwald, A.G., Banaji, M.R., 1995. Implicit social cognition: attitudes, self-esteem, and stereotypes. *Psychological Review* 102, 4–27.
- Greenwald, A.G., McGhee, D.E., Schwartz, J.L.K., 1998. Measuring individual differences in implicit cognition: the implicit association test. *Journal of Personality and Social Psychology* 74, 1464–1480.
- Greenwald, A.G., Nosek, B.A., Banaji, M.R., 2003. Understanding and using the implicit association Test: I: an improved scoring algorithm. *Journal of Personality and Social Psychology* 85, 197–216.
- Greenwald, A.G., Poehlman, T.A., Uhlmann, E.L., Banaji, M.R., 2009. Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology* 97, 17–41.
- Hofmann, W., Gawronski, B., Gschwendner, T., Le, H., Schmitt, M., 2005. A meta-analysis on the correlation between the implicit association test and explicit self-report measures. *Personality and Social Psychology Bulletin* 31, 1369–1385.
- Karpinski, A., Hilton, J.L., 2001. Attitudes and the implicit association test. *Journal of Personality and Social Psychology* 82, 774–788.
- LaPiere, R.T., 1934. Attitudes vs. actions. *Social Forces* 13, 230–237.
- Lane, K.A., Banaji, M.R., Nosek, B.A., Greenwald, A.G., 2007. Understanding and using the implicit association test: what we know (so far) about the method. In: Wittenbrink, B., Schwartz, N. (Eds.), *Implicit measures of attitudes*. The Guilford Press, New York/London, pp. 59–103.
- Lenvin, J., Lenvin, W.C., 1982. *The functions of prejudice and discrimination*. Harper and Row, New York.
- McConnell, A.R., Leibold, J.M., 2001. Relations among the implicit association test, discriminatory behavior, and explicit measures of racial attitudes. *Journal of Experimental Social Psychology* 37, 435–442.
- Monteith, M.J., Ashburn-Nardo, L., Voils, C.I., Czopp, A.M., 2002. Putting the brakes on prejudice: on the development and operation of cues for control. *Journal of Personality and Social Psychology* 83, 1029–1050.
- National Research Council, 2004. *Measuring Racial Discrimination*. In: Blank, R.M., Dabady, M., Citro, C.F. (Eds.). Committee on national statistics, division of behavioural and social sciences and education. Washington, DC: The National Academies Press.
- Nosek, B.A., 2005. Moderators of the relationship between implicit and explicit evaluation. *Journal of Experimental Psychology* 134, 565–584.
- Nosek, B.A., 2007. Implicit-explicit relations. *Current Directions in Psychological Science* 16, 65–69.
- Pager, D., Bonikowski, B., Western, B., 2009. Discrimination in a low-wage labor market: a field experiment. *American Sociological Review* 74, 777–799.
- Pager, D., Quillian, L., 2005. Walking the talk? What employers say versus what they do. *American Sociological Review* 70, 355–380.
- Pettigrew, T.F., Tropp, L.R., 2000. Does intergroup contact reduce prejudice. Recent meta-analytic findings. In: Oskamp, S. (Ed.), *Reducing prejudice and discrimination: the Claremont symposium on applied social psychology*. Lawrence Erlbaum Associates, Inc., Mahwah, NJ, pp. 93–114.
- Plant, E.A., Devine, P.G., 2001. Responses to other-imposed pro-black pressures: acceptance or backlash? *Journal of Experimental Psychology* 37, 486–501.
- Quillian, L., 2006. New approaches to understanding racial prejudice and discrimination. *Annual Review of Sociology* 32, 299–328.
- Quillian, L., 2008. Does unconscious racism exist? *Social Psychology Quarterly* 71, 6–11.
- Riek, B.M., Mania, E.W., Gaertner, S.L., 2006. Intergroup threat and outgroup attitudes: a meta-analytic review. *Personality and Social Psychology Review* 10, 336–353.
- Rooth, D.-O., 2010. Automatic associations and discrimination in hiring: real-world evidence. *Labour Economics* 17, 523–534.
- Rudman, L.A., Ashmore, R.D., 2007. Discrimination and the implicit association test. *Groups Processes & Intergroup Relations* 10, 359–372.
- SCP, 2009. *Jaarrapport Integratie [Year report integration]*. Sociaal en Cultureel Planbureau (SCP), The Hague.
- SCP, 2010. *Liever Mark dan Mohammed? Discriminatie op de arbeidsmarkt [rather mark than Mohammed? Discrimination in the labour market]*. Sociaal en Cultureel Planbureau (SCP), The Hague.
- Schütz, H., Six, B., 1996. How strong is the relationship between prejudice and discrimination? A meta-analytic answer. *International Journal of Intercultural Relations* 3, 441–462.
- Sekaquaptewa, D., Espinoza, P., Thompson, M., Vargas, P., Von Hippel, W., 2003. Stereotypic explanatory bias: implicit stereotyping as a predictor of discrimination. *Journal of Experimental Social Psychology* 39, 75–82.
- Sniderman, P., Hagendoorn, L., 2007. *When ways of life collide. Multiculturalism and its discontents in the Netherlands*. Princeton University Press, Princeton, NJ.
- Son Hing, L., Chung-Yan, G.A., Hamilton, L.K., Zanna, M.P., 2008. A two-dimensional model that employs explicit and implicit attitudes to characterize prejudice. *Journal of Personality and Social Psychology* 94, 971–987.
- Stepanikova, I., Triplett, J., Simpson, B., 2011. Implicit racial bias and prosocial behaviour. *Social Science Research* 40, 1185–1195.
- Talaska, C.A., Fiske, S.T., Chaiken, S., 2008. Legitimizing racial discrimination: a meta-analysis of the racial attitude-behavior literature shows that emotions, not beliefs, best predict discrimination. *Social Justice Research: Social Power in Action* 21, 263–296.
- Verkuyten, M., 2005. Ethnic group identification and group evaluation among minority and majority groups: testing the multiculturalism hypothesis. *Journal of Personality and Social Psychology* 88, 121–138.
- Verkuyten, M., Kinket, B., 2000. Social distances in a multi ethnic society: the ethnic hierarchy among Dutch preadolescents. *Social Psychology Quarterly* 63, 75–85.

- Vaisey, S., 2008. Socrates, skinner, and aristotle: three ways of thinking about culture in action. *Sociological Forum* 23, 603–613.
- Wheeler, S.C., Petty, R.E., 2001. The effects of stereotype activation on behavior: a review of possible mechanisms. *Psychological Bulletin* 127 (6), 797–826.
- Wilson, T.D., Lindsey, S., Schooler, T.Y., 2000. A model of dual attitudes. *Psychological Review* 107, 101–126.
- Wittenbrink, B., Schwartz, N., 2007. *Implicit measures of attitudes*. The Guilford Press, New York/London.