JENS AGERSTRÖM, FREDRIK BJÖRKLUND, RICKARD CARLSSON & DAN-OLOF ROOTH
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Warm and Competent Hassan = Cold and Incompetent Eric: A Harsh Equation of Real-Life Hiring Discrimination

Abstract

Little is known about how individuating information about job applicants influences ethnic discrimination. In the present field experiment, we sent out 5,636 job applications varying how Swedish (in-group) and Arab (out-group) applicants presented themselves in terms of two fundamental dimensions of social judgment: warmth and competence. Results indicate substantial discrimination where Arab applicants receive fewer invitations to job interviews. Furthermore, conveying a warmer or more competent personality increases invitations. However, appearing both warm and competent seems to be especially important for Arab applicants. In conclusion, the results show that Arab applicants need to appear warmer *and* more competent than Swedish applicants to be invited equally often. The practical importance of signaling warmth and competence in labor market contexts is discussed.

Contact information

Jens Agerström
Linnaeus University
Department of psychology
SE- 391 82 Kalmar
jens.agerstrom@lnu.se

Fredrik Björklund
Lund University
Department of psychology
SE-221 00 Lund
Fredrik.Bjorklund@psychology.lu.se

Rickard Carlsson
Lund University
Department of psychology
SE-221 00 Lund
Rickard.Carlsson@psychology.lu.se

Dan-Olof Rooth
Linnaeus University
Centre for Labour Market and Discrimination Studies
SE- 391 82 Kalmar
dan-olof.rooth@lnu.se

1. Introduction

In personality psychology there is a general consensus that individual differences can be described in terms of five broad dimensions (Five Factor Model; Costa & McCrae, 1992): openness, conscientiousness, extraversion, agreeableness, and neuroticism. However, when people form impressions of another person or group, considerable research in social cognition suggests that they tend to rely on two dimensions: warmth and competence (Fiske, Cuddy & Glick, 2007; Judd, James-Hawkins, Yzerbyt & Kashima, 2005). The present research focuses on whether recruiters' hiring decisions are affected by how applicants present themselves in terms of warmth and competence, and specifically on how these two dimensions could shed new light on ethnic hiring discrimination in the labor market.

The warmth dimension essentially concerns friend or foe judgments and answers the question about other people's intentions. It involves judgments about characteristics such as friendliness, trustworthiness and empathy. In contrast, the competence dimension concerns people's capability of carrying out their intentions. These two universal dimensions of social judgments are argued to stem from evolution, because quick and accurate estimates of people's intentions and capabilities have the potential of identifying threats (e.g., capable enemies) and opportunities (skilled allies), thereby promoting survival. The distinction between warmth and competence dimensions has received a lot of empirical support (e.g., Judd et al., 2005; Yzerbyt, Kervyn & Judd, 2008; Wojciszke, Bazinska & Jaworski, 1998).

Warmth and competence also seem to play an important role in stereotyping. According to the stereotype content model (SCM), most stereotypes are made up of different combinations of warmth and competence stereotypic attributes (Fiske, Cuddy, Glick & Xu, 2002). This model's predictions have been confirmed in a number of studies, including studies with nationally representative samples (Cuddy, Fiske, & Glick, 2007) and in cross cultural research projects (Cuddy et al., 2009). Importantly, warmth and competence stereotypes appear in studies with different methodological approaches, including explicit (e.g., Fiske et al., 2002) and implicit measures of stereotype content (Carlsson R. & Björklund, 2010). Furthermore, stereotype content has been found to be related to meta-cognitive reports of discrimination tendencies (Cuddy et al., 2007) as well as to discriminatory judgments about an individual's abilities (Carlsson R., Björklund & Bäckström, in press). So far, most of the research into the SCM has focused on theory, relying on laboratory studies and surveys. A natural next step in this line of research is to apply this relatively new model to real-life settings. One area of applied research that could benefit from this theoretical framework is the study of hiring discrimination in the labor market.

Hiring discrimination

Field experimental research into labor market discrimination shows that members of ethnic minorities are often subjected to substantial discrimination when they apply for jobs (Bertrand & Mullainathan, 2004; Carlsson M. & Rooth, 2007). For example, when American job candidates are matched with respect to credentials and numerous other job-related characteristics, applicants with typically White names receive 50 percent more callbacks for job interviews than applicants with African American names

(Bertrand & Mullainathan, 2004). In effect this means that a White job applicant needs to send about 10 resumes to be called for a job interview whereas an applicant with African American name needs to send about 15 resumes. As it happens, the difference in callbacks when Arabs[i] compete against equally skilled native Swedes (on the Swedish labor market) is 50 percent too (Carlsson M. & Rooth, 2007). Interestingly, recent research conducted on the Swedish labor market suggests that the sources of discrimination may be traced back to the recruiter's automatic stereotypes. Rooth (2010) sent out fictive job applications with equivalent merits but which differed in whether they had a name that sounded typically Arab (e.g., Hassan) or typically Swedish (e.g., Lars). Several months later, the recruiters' automatic performance stereotypes were measured in an ostensibly unrelated study. It was found that the recruiters' automatic stereotypes predicted whether they would discriminate against applicants with Arabic-sounding names. Although Rooth (2010) only investigated the impact of performance stereotypes (the competence dimension), there is reason to believe that warmth stereotypes would matter too. Indeed, recent research suggests that Arabs are stereotyped as lacking not only competence, but also warmth (e.g., Cuddy et al., 2007; Cuddy et al., 2009). This would be especially true when they are contrasted with an in-group (e.g., native Swedes) since in-groups tend to be stereotyped as high on both dimensions (Fiske et al., 2002).

The hiring process is arguably a case of impression formation where a recruiter has to make an impression of an applicant based on what information is present in the application. It is therefore reasonable to assume that negative characteristics are attributed to the applicants based on their stereotypes. For example, if a recruiter associates Arabs with characteristics such as laziness and low skill, he or she would then apply this stereotypic information to applicants with Arabic-sounding names. The impact of such stereotypic information would then presumably be greatest when the recruiter does not already have access to relevant and diagnostic information about the individual. Indeed, previous research suggests that when individuating information is relevant and diagnostic, people are sometimes (depending on the strength of the stereotype) able to ignore the stereotype and instead form a judgment based on individuating information (Krueger & Rothbart, 1988). Consequently, to the extent that hiring discrimination is related to the recruiter's stereotypic beliefs about the applicants' personal characteristics, this type of discrimination should vary depending on the information the recruiter has about the applicants' personal qualities. In other words, the applicants should to some extent be able to make up for the characteristics attributed from the stereotype associated with their social group, if they are able to prove they have desirable personality characteristics. Furthermore, the importance of conveying such information might interact with the content of the stereotypes. That is, a group stereotyped as warm and competent (e.g., Swedes) may have less to gain from proving themselves as such compared to a group stereotyped as lacking both warmth and competence (e.g., Arabs).

Warmth and competence in a labor market context

Warmth and competence are quite broad dimensions, and although researchers have referred to them for decades, the exact definitions and labels have varied somewhat depending on the specific research area (see Fiske et al., 2007 for a review). In the case of organizational behavior, for example, the perhaps most commonly used labels are "communion" and "agency" (e.g., Abele, 2003; Wojciszke & Abele, 2008).

Communion emphasizes people's skills in relating to other people and maintaining good relations with them, whereas agency relates to action oriented competence behaviors, for example being ambitious and productive. Other conceptualizations have, for example, instead focused more closely on the moral aspect of the warmth dimension (e.g., Wojciszke et al., 1998).

In the present research we use the labels warmth and competence in a broad sense, while at the same time realizing that the exact focus of the two dimensions has to be adjusted to a labor market context. For example, what attributes are most central to the competence dimension in the present study will differ from what would be most central in a study about people's judgments of strangers they meet in a dark back alley. Nevertheless, in both these examples the underlying dimension refers to people's capability of carrying out their agenda. We specifically operationalize warmth as the social traits of an applicant which includes how nice, friendly, social, empathic, altruistic, and agreeable that person is. Competence, on the other hand, is operationalized as including traits such as being productive, precise, goal oriented, hard-working and ambitious. Thus, the definitions of warmth and competence used in the present paper will indeed very closely correspond to communion and agency (e.g., Wojciszke & Abele, 2008)

The present study

The aim of the present study was to examine how applicants with Swedish-sounding and Arab-sounding names are treated when applying for jobs in the Swedish labor market and how this interacts with whether they convey a warm and/or competent personality more directly. Specifically, we wanted to see whether information about these traits is treated differently for Arabs and Swedes, such that the bonus associated with being warmer (or more competent) would vary according to ethnicity. We also aimed to relate the penalty of having an Arabic-sounding name to warmth and competence. Put differently, does an Arab need to appear warmer, more competent, or both, in order to have the same chance of being called to a job interview as a native Swede? Based on previous research on the SCM, which shows that relative to the in-group, Arabs are stereotyped as being low in warmth and competence, we predict that only when Arab job candidates convey a warmer *and more* competent personality in their job applications will they be invited for a job interview equally often as native Swedish applicants (in-group).

2. Method

Experimental design and procedure

In the present experiment, 5,657 fictitious job applications were sent to vacant job positions in Sweden. A total of 3,325 job openings posted by the *Swedish Employment Agency* were applied for. The jobs pertained to the following occupational categories: shop sales assistants, cleaners, construction workers, restaurant workers, mechanics, motor-vehicle drivers, accountants, primary school teachers, high school teachers, business sales assistants, computer professionals, and nurses. The applicant had a typical Swedish name in 2,837 of the applications and typical Arab name in the

remaining 2,820 applications. All applications were sent by email. Applications were sent to openings all over Sweden, although most of the jobs were located in the two major cities of Sweden: Stockholm and Gothenburg. Callbacks for interview were received via telephone (voice mailbox) or e-mail. Thus, whether or not an applicant was invited for a job interview constituted our dependent variable. To minimize inconvenience on behalf of the employers, invitations were promptly declined.

This study was part of a larger research project addressing the problem of standardization in field experiments on discrimination (Carlsson M., 2011). In this type of field experiment, the researchers typically send out two job applications with candidates that are as closely matched as possible in order to rule out potential confounding variables and to maximize statistical power (see e.g., Riach & Rich, 2002). However, as Carlsson M. (2011) clearly shows, such standardization reduces the study's external validity, posing substantial constraints on the generalizability of the results. For example, even if two applicants are matched in every respect so that both of them are highly skilled and having similar personalities, the generalizations about the level of discrimination will be limited to this specific case, and might not generalize to the situation where we have two relatively unskilled applicants that differ in ethnicity.

Another problem with the conventional matching approach is that it should be rare and somewhat unrealistic for a hiring manager to receive two candidates that are identical in every single respect except for one, (e.g., ethnicity). Rather, candidates tend to have unique combinations of qualities based on a large set of variables that can vary in an application. In order to simulate this, Carlsson M. (2011) argues, the researcher should randomly assign several different variables to each application (e.g., hobbies, personality and so on) apart from the ones actually intended to be studied (e.g., ethnicity). Consequently, while most experiments aim to reduce random noise, the present study instead aimed to induce a background of highly realistic noise. To the extent that we then find statistically reliable effects of the variables we are interested in (warmth, competence and ethnicity), we can be confident that they are robust over a wide range of variables that are likely to vary in a real-life context, thus greatly increasing the generalizability of our findings. Importantly, since all variables are randomized, we do not need to control for them in the analysis. The drawbacks of this approach, however, are that it requires a very large sample, and that pair-wise comparisons become meaningless because a specific recruiter may have received two very different applications.

Job applications

The general appearance of the job applications was based on the templates provided by the *Swedish Employment Agency* on their website (http://www.arbetsformedlingen.se). The first part of the applications consisted of a letter of interest. The letter of interest contained a quite general applicant biography, in which information about the applicant's personality in terms of warmth and competence among other things was revealed (see below for more details). The second part contained a detailed curriculum vitae, including educational history and work experience. Because the competition from other applicants was assumed to be considerable, the fictitious applicants had to be well qualified in order to avoid a floor effect in callback rates. With respect to contact information, the application contained a name, an e-mail address, a telephone number, and a postal address. The applicant's e-mail address and the telephone number (to which

voicemail was connected) were registered at a large internet provider and a phone company. To prevent suspiciousness among the employers, the applications had to be constructed in several versions with different typeface and layout. Given that each advertised job had to be utilized to a maximum, with several applications being sent to each employer, three different versions each having different appearance in terms of typeface and layout were created. Besides manipulating the job applicant's ethnicity (Swedish vs. Arab) and personality (higher vs. lower warmth and higher vs. lower competence), a multitude of other variables were varied on a random basis. For example, these additional variables concerned number of previous employments, years of unemployment, time studied abroad, type of leisure activities commonly engaged in, and the residential address (signaling neighborhood status). As a result, many different versions of the job application had to be created. A computer program generated individual job applications by randomly assigning values to all of the variables that could vary. Depending on the values of the input, the program randomly selected the corresponding modules and generated a complete application consisting of a letter of interest and a CV. This program was extensively tested to ascertain that all modules fitted together and that the end result always was a realistic application.

Manipulation of ethnicity

The job application either contained a Swedish- or an Arab-sounding male name. To signal Swedish ethnicity, we used the first name Erik along with the last names Andersson, Pettersson and Nilsson. To signal Arab ethnicity, we used the first names Ali, Hassan, and Mohammed along with the last names Ameer, Hassan and Said. [ii]

Manipulation of warmth and competence

The degree to which the applicant was a warm and competent person was conveyed in the letter of interest. Note that the difference between the high- versus low-warmth and competence applicant is relative so that, for instance, the low-competence applicant was simply less task-oriented than his high-competence counterpart. In other words, the low-competent applicant was not depicted as completely lacking work related competence. In fact, we ensured that the "low-competence" applicant was still quite competitive for the job in question (see below). [iii] To enhance generalizability, we used several different text versions to manipulate competence and warmth, respectively, in the job application. The order in which the warmth vs. competence information appeared in the letter of interest was randomized. [iv] One example of text used to convey that the applicant was high(er) and low(er) in warmth, respectively, was:

My friends and former colleagues think that I am a warm and social person who gets along great with others, both at work and elsewhere. Also, I think it is important to consider other people's needs, not just money. I have a strong sense of empathy with people who are less fortunate than myself and I do some charity work.

As a person I usually do not sit and keep my opinions to myself but rather say what I think straight out. Some of my former colleagues would probably call me a bit stubborn, but I believe it is important that my point is seen and that the job gets done. And I often prefer to

complete my work tasks alone, since then it is easier to concentrate on what you are supposed to do.

One example of text used to convey that the applicant was high(er) and low(er) in competence, respectively, was:

As regards work I am used to put great effort into it and I always try to do my best. I strive to be precise so that the work does not need to be redone. My old co-workers would probably say that I am a person who always manages to get the job done. In addition, I would describe myself as a hardworking and tenacious person who handles stress well.

Regarding work I really like working but at the same time I think it is important to keep a balance between work and leisure. The best days are the ones when I feel that I have done my share at work and yet have the energy to be active in my spare time. It is not important for me to be the best at work and my colleagues would probably describe me as a pretty relaxed.

These paragraphs were evaluated by a sample of 84 students (54% men, age 19 – 35 years with a median of 23.50), who for each paragraph rated on a scale ranging from 1 (*not at all*) to 9 (*very much*) how friendly, empathic (warmth dimension) and productive, hard-working (competence dimension) they perceived the personality traits of the person described in the paragraph. Paired-sample t-tests show that the high warmth paragraphs signaled substantially higher warmth ($M = 7.39$, $SD = 1.15$) than the low warmth paragraphs ($M = 3.83$, $SD = 1.31$), $t(83) = 17.49$, $p < .001$, Cohen's $d = 2.89$. Further, the high competence paragraphs conveyed much higher competence ($M = 7.93$, $SD = 1.00$) than the low competence paragraphs ($M = 4.72$, $SD = 1.80$), $t(83) = 15.54$, $p < .001$, Cohen's $d = 2.29$. Because previous research (e.g., Kervyn, Yzerbyt & Judd, 2010; Kervyn, Yzerbyt, Judd & Nunes, 2009) has documented a compensatory relationship between warmth and competence, we also evaluated how manipulating one dimension affected the scores on the other dimension. Indeed, the high warmth paragraphs were found to convey less competence ($M = 5.26$, $SD = 1.82$) than the low warmth paragraphs ($M = 7.05$, $SD = 1.30$), $t(83) = -8.04$, $p < .001$, Cohen's $d = -1.14$. Similarly, the high competence paragraphs signaled less warmth ($M = 4.70$, $SD = 1.83$) than the low competence paragraphs ($M = 6.31$, $SD = 1.34$), $t(83) = -7.64$, $p < .001$, Cohen's d -1.02. In other words, the increase in warmth resulted in a reduction in perceived competence, and vice versa. This result is not surprising considering the way we constructed the paragraphs. For example, we partly signal lower competence by emphasizing a relaxed (non-ambitious) attitude towards work and it is plausible that this "relaxed" attitude is what increases the perception of warmth to some degree. Indeed, previous research suggests that one will appear warmer if one appears lazier (Kervyn, Judd & Yzerbyt, 2009). Further, when we increase warmth by emphasizing that the applicant values people's needs more than making money, this implies that one has other priorities in life than work performance. Although it would have been optimal if the warmth manipulation did not change perceived competence at all (and vice versa), we consider this to be an inevitable result of creating realistic job applications. After all, since people would not actually be able to isolate these effects in their real job applications either, our approach will most closely mimic what would happen when people appear warmer and/or more competent in their own personal letters.

Importantly, the compensatory effects are much smaller than the intended effects. The effects are also equally large for both dimensions, meaning that the consequences for the main study is merely that the manipulations will be somewhat weaker than had they been completely orthogonal.

3. Results

To recap, the purpose of this study is to examine how individuating information about job applicants in terms of warmth and competence influences recruiters' decisions to invite Swedish vs. Arabic job candidates for job interviews. We thus found it appropriate to present the results in terms of the probability that the job applicant is invited for interview (callback rates). To investigate the overall effect of ethnicity, warmth and competence on callbacks, as well as the interaction of these variables, we conducted a 2 (warmth: high vs. low) $\times$ 2 (competence: high vs. low) $\times$ 2 (ethnicity: Arab vs. Swede) between-subjects ANOVA[v]. The analysis yielded a significant main effect of warmth, $F(1, 5628) = 4.99$, $p = .03$, with applicants conveying higher warmth receiving higher callback rates ($M = .23$) than applicants conveying lower warmth. ($M = .21$). There was also a significant main effect of competence $F(1, 5628) = 7.34$, $p = .01$, which shows that callback rates are higher for applicants signaling higher competence ($M = .24$) than applicants signaling lower competence ($M = .21$). Importantly, the main effect of ethnicity was also significant, $F(1, 5628) = 71.74$, $p = .0005$, establishing the expected discrimination effect where Swedish job applicants ($M = .27$) receive substantially higher callback rates than Arab job applicants ($M = .17$). The two-way interaction of warmth and competence was not significant, nor was the two-way interaction of warmth and ethnicity or competence and ethnicity Fs<1. However, there was a marginally significant three-way interaction of warmth, competence and ethnicity, $F(1, 5628) = 3.54$, $p = .06$, indicating that the callback rates for Swedish versus Arab job applicants are affected differently by combinations of warmth and competence (see below).

Figure 1 shows the means of the eight groups of this three-way interaction along with their 95% confidence interval. In this figure we see that for Swedish job applicants, callback rates increase by about 5 percentage points when the job applicant signals higher warmth ($t(1435) = 2.16$, $p = .031$) or higher competence ($t(1382) = 2.22$, $p =.026$). Interestingly, there is no additional premium of simultaneously conveying higher warmth and more competence. Thus, Swedish applicants increase their chance of being called to an interview by about 20 percent through conveying either higher warmth or higher competence.

For Arab job candidates, in contrast, the overlapping confidence intervals reveal that being higher on warmth or competence alone is not enough to significantly increase the probability of being invited for interview. Rather they need to be higher on both these qualities in order to receive (6 percentage points) more callbacks ($t(1374) = -2.74$, $p < .01$). Thus, Arabic applicants can increase their chances of being called to an interview by 40 % if they appear higher on both warmth and competence. This differential effect of being warmer and more competent for Arabs versus Swedes is what essentially produces the (marginally significant) three-way interaction reported above.

Regarding the level of discrimination, Figure 1 shows that there is an overall discrimination effect, with Arab job candidates being less likely to be called to

interview. The ethnicity effect holds even when the Arab candidates are more competent *or* warmer than the Swedish candidates. Consistent with our prediction, only when the Arab applicants are both warmer *and* more competent than the Swedish applicants are the two ethnic groups invited for interview equally often, with the 2 percentage point higher callback rates of Swedish applicants not being statistically significant, $t(1356) = .81$, $p = .42$; $M = .23$ for Swedes and $M = .21$ for Arabs.
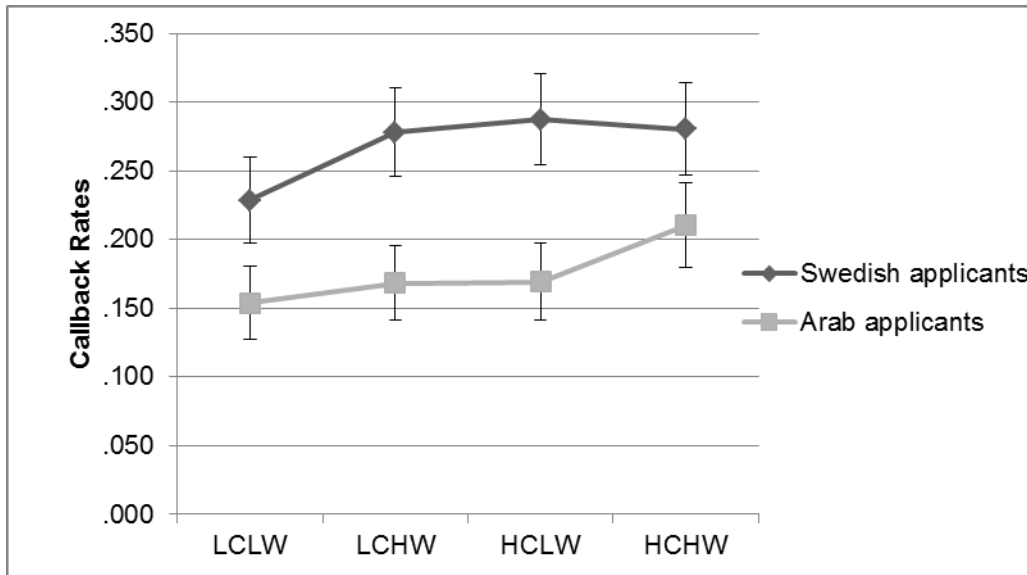

Figure 1. Callback rates as a function of ethnicity, warmth, and competence. LC = Lower Competence, HC = Higher Competence, LW = Lower Warmth, HW = Higher Warmth. Vertical bars denote 95 % confidence intervals.

4. Discussion

In the present study a large number of fictive job applications were sent to real job openings. The callback rates were substantially lower when the application had an Arab-sounding signature than when it had a Swedish one, a result which corroborates previous findings (Carlsson M. & Rooth, 2007). The unique contribution of our study is that warmth and competence was systematically manipulated, across ethnicity, probing to what extent the hiring discrimination of Arab applicants is driven by perceptions of relative coldness (lack of social skills, etc) and by perceptions of relative incompetence (lack of efficiency, etc). Consistent with our prediction and the SCM, the results reveal contributions of both of these fundamental dimensions of social perception: an Arab applicant needs to signal higher levels of both warmth and competence than an otherwise equal Swedish applicant in order to have the same chance of being invited to a job interview.

Interestingly, for native Swedish applicants there is no joint effect of being warm and competent, but failing to convey either warmth or competence has the cost of a lower call back rate. To some extent, this result may be due to the compensatory nature of warmth and competence. For example, by appearing less competent, one may appear a little bit warmer (Kervyn et al., 2009). However, this does not seem to be the case for Arab applicants who benefit from signaling both warmth and competence. Possibly, this type of compensatory process may not occur when certain groups (e.g., Arabs) are the target of discrimination because in these circumstances the group member might be

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perceived as lacking both warmth and competence unless he (or she) somehow proves otherwise by signalling, for instance, in a job application that the necessary characteristics are indeed present. Thus, when recruiters consider Arab job candidates, the presence of warm personality traits does not necessarily entail a cost for the competence dimension. Taken together, the present findings testify to the applied value of the SCM, and they are the first to show that warmth and competence play a role in ethnic labor market discrimination.

The fact that this study was conducted in the labor market rather than in a lab, with real recruiters and a diversity of actual jobs, speaks to the external validity of the results. The large quantity of job applications submitted made it possible to use a method involving the randomization of other information than that related to the independent variables. Our fictive applicants thus randomly varied in preferred leisure activities, number of previous jobs, number of years employed, residential address, etc. This reduces the risk of confounds and enables us to draw relatively strong conclusions regarding how much more likely it is for a Swede than an Arab to be called to a job interview. Furthermore, and most relevant for the present concerns, we can draw equally strong conclusions regarding the extent to which an applicant benefits from being depicted as relatively warm and/or competent.

As warmth- and competence-related information in applications has effects on callback rates, and there is reason to believe that our method produced valid data, we now turn to the possible practical implications of the current findings. The main conclusion is that it would appear important for non-native job applicants to stress both their warmth- and their competence-related traits when writing an application, rather than assuming that either of them will be taken for granted or considered irrelevant by the recruiter. It is the sum of being perceived as sufficiently warm and competent that provides a lift for the Arab applicants in the present study. Leaving any of them out may be detrimental, as the chances of being invited to a job interview decrease, the interview in most cases being a prerequisite for actually getting a job. Obviously, we do not encourage applicants to make up traits that they don't actually have. Instead, we want to stress the importance of trying to convey in the application their level of warmth and competence, rather than relying simply on "hard facts" such as grades and certificates of employment. Self-reported information on personality traits apparently matter for real life hiring decisions; a 40 percent increased chance of being invited for a job interview is far from trivial.

It would now be relevant to discuss how the magnitude of the present effects should be properly understood. Standardized effect sizes are measures of the amount of variance explained in a dependent variable. If, as in the present case, the variable represents whether an applicant is called to an interview or not, we cannot expect large effect sizes. This is because factors that are out of our control and have nothing to do with the content of the job applications likely explain much of the variance, such as when the position has been withdrawn, or already been filled (perhaps internally). Illustrating this, our "best" candidate (i.e., a warm and competent Swedish applicant) has less than a 1/3 chance of being called to an interview. Importantly, these callback rates are normal: people simply need to apply for several jobs to be called to an interview. Moreover, to convincingly demonstrate employment discrimination in a real-world hiring context, we had to trade statistical power for external validity. Remember that we intentionally allowed the applicants to vary in many different ways (e.g., hobbies) on a random basis, which produces noise. Thus, a specific recruiter may have received two applications that

varied in a great number of other respects than those systematically manipulated. Inevitably, this more realistic approach comes at the cost of limited statistical power.

When interpreting the magnitude of effects in an applied field experiment such as the present one, the practical importance of the observed effect is of main concern. Most central to our results is how conveying warmth and competence influences the relative difference in callback between different types of candidates. We would like to think that an Arab having a 40 percent increased chance of being called to an interview when conveying a warmer and more competent personality is practically important. After all, Arab candidates who lack warmth and competence need to apply for approximately two more jobs in order to be invited for a job interview compared to their warm and competent counterparts. In comparison, Swedish candidates lacking warmth and competence need only to apply for one additional job. Interestingly, the magnitude of the present effects is very similar to those of the well-known study by Bertrand and Mullainathan (2004), which shows that in the US labor market African American job applicants have a lower probability of being called to a job interview than White applicants.

Although we present substantial real-life data with potential practical implications, there are some limitations to the value of the results. Some of those, such as the fact that all applicants were male, that they just represented two different ethnic groups, and that the study was restricted to the Swedish labor market, may be defensible. Others appear more fundamentally related to the research question and may be worth following up in future research. One such limitation is the lack of a proper control of levels of warmth and competence. We know from the results that relative differences in both the warmth dimension and in the competence dimension affect callback rates, but not to what extent high levels of warmth/competence lift the rates and low levels lower them. Another limitation is the lack of data on how the individual recruiters perceived the warmth and competence of the ethnic groups that were studied. Such data is costly to gather but invaluable when analyzing the extent to which applicants are stereotyped, and how individuating information in the job application may serve as a buffer for it. Together these two improvements would provide an ideal basis for modelling the role of warmth and competence in the hiring decision process.

The present study suggests that recruiters should be cautious not only when they try to determine the competence of candidates (as suggested by Rooth, 2010), but also when they try to make up their mind as to whether the candidate is likeable enough to be hired, if they are to refrain from making unintentional discriminating hiring decisions. Our hopes for the future is that the influence of stereotypes on hiring decisions will decrease as recruitment processes become more sophisticated, such as being facilitated by (for example) web-based administration of psychological tests. Recruiters may then base their call-back-decisions on more reliable and valid information than that of today's job applications. But until then, our advice to mainly Ali, Hassan and Mohammed (but also to Erik), is to make sure to emphasize your social and competence skills in your job application.

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[i] In the present study we specifically focus on the ethnic group of Arabs. Nonetheless, it may be a more specific (e.g., Arab-Muslims) or a more general group (people from the Middle East) that is the real target of discrimination caused by signalling Arabic ethnicity. However, this is beyond the scope of the present study.

[ii] A sensitivity analysis showed that the different Arab names did not produce different callback rates. Furthermore, previous studies (e.g., Carlsson & Rooth, 2007) have found virtually no difference in callback rates based on variation of (common) names within ethnic groups.

[iii] Note that approximately every fifth application signalling both low warmth and low competence resulted in that the applicant was invited to a job interview (see Results section). This strongly suggests that our fictitious job candidates overall were evaluated positively by the recruiters and that the applications were perceived as realistic.

[iv] There were no order effects in the subsequent analyses.

[v] Analyzing our data by means of logistic regression yields virtually identical results. However, because our dependent variable is whether one is being called to a job interview or not, the means can be directly interpreted as percentages which are more intuitive than odds ratios.