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Social Hierarchies, Prejudice, and Discrimination

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Abstract

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This thesis is based on three papers where I examine some aspects of ethnic and gender-based prejudice and discrimination in hierarchical situations. In Paper I, the existence of ethnic hierarchies in Sweden is explored. Both immigrant and ethnic Swedes were asked to report their social distance to a number of ethnic groups represented in their geographical area. The results showed that hierarchies exist in Swedish environments and that they are connected with both ethnic prejudice and participants' tendency to promote and support hierarchies, as expressed in their scores on social dominance orientation (SDO). In Paper II, based on Weiner's attribution theory, ethnic and gender discrimination in social sanctions (help and punishment) were examined together with SDO in two studies. The results showed that discrimination in line with societal discrimination of subordinated groups was also displayed in the present experimental groups and that participant's SDO is a factor behind the tendency to discriminate subordinate groups. Paper III examined sex differences in SDO in two studies. One of the strongest factors behind SDO is participant's sex. Gender identification was tested as a mediator of the effect of sex on SDO. The results from two studies showed that the sex difference in SDO was partially or completely mediated by gender identification. The influence of SDO on formation of hierarchies and discrimination as well as its sex and gender aspects are further discussed.

Keywords: Social Psychology, Social dominance orientation, Prejudice, Discrimination, Ethnicity, Gender

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List of Papers

This thesis is based on the following papers, which in the following will be referred to by their roman numerals.

- I Snellman, A., & Ekehammar, B. (2005). Ethnic hierarchies, ethnic prejudice, and social dominance orientation. *Journal of Community and Applied Social Psychology*, 15, 1-12.
- II Snellman, A., & Ekehammar, B. (2006). *The influence of social dominance orientation on punishment and help*. Manuscript submitted for publication.
- III Snellman, A., Ekehammar, B., & Akrami, N. (in press). The role of gender identification in social dominance orientation: Mediating or moderating the effect of sex? *Journal of Applied Social Psychology*.

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Introduction

A brief background

Prejudice and discrimination based on ethnicity and gender influence the every day lives of people all over the world. They affect our thinking about other people and ourselves, which in turn may give us different opportunities and different behaviours. Prejudice can be shown as an intergroup phenomenon that inhibits contacts between different social groups. Intergroup contacts and prejudice will also have different effects if the groups are equal in social and economic status or if they are on different levels in a social hierarchy. This is because social hierarchies make discrimination of subordinated groups possible. Hierarchies and prejudice may have various shapes and effects in different cultures but psychologically they share the same underlying mechanisms and they shape our every day reality.

Social hierarchies

The social hierarchies examined in this thesis are group based. A group-based social hierarchy can be defined as a social construction that influences the intergroup contacts, individual behaviours and the self constructs of its members (Pepels & Hagoendoorn, 2000). Membership of a specific social group is a fundamental aspect of the definition of the self, and can orient people's perceptions and conducts in the social arena (Tajfel, 1981). The main psychological factors behind the tendency to form a social hierarchy are cognitive biases, like stereotyping and ethnocentrism (Pepels & Hagoendoorn, 2000), status-based social constructions like those explained in social identity theory (SIT; Tajfel, 1981), and personality-related factors like authoritarianism and social dominance orientation (see page 12).

In modern societies, some of the most common social hierarchies are based on ethnicity, gender or economic status. This is accepted and upheld by society members all over the world. History shows that when a societal hierarchy ceases to be accepted by its members, the hierarchical system is not put out. Instead, people tend to replace the old hierarchy with a different one (Mc Kay, Hill, & Buckler, 1993). In short, in established social hierarchies the

super- and subordination of groups is socially shared by the members of the groups involved.

Ethnic hierarchies often show intergroup consensus (Hagendoorn, Drogendijk, Tumanov, & Hraba, 1998; Pepels & Hagendoorn, 2000), that is, members of the groups involved in the hierarchy agree on the status order between the groups. This can not be explained solely by theories like realistic conflict theory or social identity theory (Haagendoorn, 1995). The acceptance of a subordinated position in an ethnic hierarchy may be justified by status concerns and the need for a positive view of the in-group. A group may accept a position at a middle level of a hierarchy because it is better than a position at the lowest levels (Haagendorn, 1995). No further explanations of this consensus about the hierarchies have been presented but it may correspond to a similar acceptance of the gender hierarchy. Thus, women who accept and act in line with the role of the female gender may get a few advantages and they may therefore chose not to lessen their social position further by being both deviant and women (Glick & Fiske, 2001). My point here is that accepting an ethnic hierarchy may give a few advantages that being in opposition to it would not give. Another factor behind the tendency to accept a social hierarchy, like the ethnic hierarchy, may be modelling. Bussey and Bandura (1999) have shown that by learning how to act like our role models we also learn how to act in line with their gender hierarchy. This is probably the case with other social hierarchies as well.

Prejudice and stereotyping

Prejudice can be defined as a negative (or positive) attitude against other people based on beliefs about their social category membership (e.g., Akrami & Ekehammar, 2006). Prejudice is an affective attitude (e.g., Akrami & Ekehammar, 2006; Allport, 1954) and it can be directed towards any social group or human category. Also, Allport (1954) noted that prejudice is a universal phenomenon.

The cognitive component in prejudice, stereotyping, is a part of the categorization function we need to store and retrieve the multitude of social information we meet every day (Macrae, Stangor, & Milne, 1994). Stereotypes mirror the cultural context of the individual but they are also based on personal beliefs. Therefore, a single individual may not share all the common stereotypes of his or her culture, and he or she may even have few personal stereotypes. As an automatic cognitive function, stereotypes work swiftly and partly outside our span of awareness (Akrami, Ekehammar, & Araya, 2006; Chen & Bargh, 1997; Macrae, Bodenhausen, Milne, & Jetten, 1994). Fortunately, just having stereotypes does not automatically lead to prejudice, in-

tergroup hostility or discrimination. People seem to be able to control their prejudice when they have strong reasons to do so (Macrae et al., 1994).

Prejudice also varies for a number of reasons, like personal factors, such as gender (Ekehammar, Akrami, & Araya, 2003), personality (Ekehammar & Akrami, 2007), and social dominance orientation (e.g., Akrami & Ekehammar, 2006; Ekehammar, Akrami, Gylje, & Zakrisson, 2004) as well as situational factors (Blair, 2002; Guimond & Dambrun, 2002).

Antagonism between groups is often promoted by competition for resources and it is not just losing resources to another group that increases the stereotyping – winning resources seem to have an even stronger effect (Guimond & Dambrun, 2002). In an experiment by Guimond and Dambrun (2002), the effects of relative deprivation and relative gratification were measured on stereotyping against North Africans. The highest increase in stereotyping against North Africans was found among participants experiencing relative gratification for the French in-group.

The role of stereotypes and prejudice has been extensively studied in social psychological research, and prejudice seems to have stronger links to behaviour than stereotypes (Fiske, 1998). Prejudice may take an extreme and emotional form in situations of perceived group threat and high individual levels of authoritarian attitudes.

An important aspect of stereotyping and prejudice is that they lead to self-fulfilling prophecies. Stereotypes about one's own social group affect the way one will develop behaviour and skills (Bussey & Bandura, 1999). The mere knowledge that out-group members have stereotypes towards the individual's in-group can impair or improve performance. A clear example of this is the experiments on stereotype threat by Steele (1997). Advanced math students in a gender-mixed group were casually reminded of that women are regarded to have less ability in math compared to men. The results of a following math test showed that the female students performed worse than the male students and also worse than the non-primed female students in the control group. On the other hand, the male students performed better than the female students and also better than the non-primed male students in the control group. When a similar experiment was made on advanced African American and European American students in English the stereotype mentioned was about African Americans' lower skills in the English language. In the test that followed, the primed African American students had lower scores in English than the European American and also lower than the non-primed African American students (Steele, 1997).

Discrimination

Whereas prejudice is an attitude, discrimination has to do with overt situational behaviour. Social discrimination occurs when someone gets a better or harsher treatment than others because of her or his social group membership. An example of discrimination is the landlord who chooses to ignore applications from people of a certain ethnic group. Social psychologists have usually examined discriminatory behaviour in connection with studies of its psychological background, like stereotypes (Fiske, 1998). This research has often been carried out in social systems where discriminatory behaviour may take place, like the justice system (Albonetti, 2002; Stoltzenberg & D'Alessio, 2004).

Discrimination takes different forms depending on the source of the discrimination. It can be institutional, aggregate and individual. Discrimination of social groups can be institutional and societal when the lives of certain groups are surrounded by special laws that limit their lifestyles or human rights. In western democracies this is officially not accepted but the legal construction of the societies sometimes leads to effects that create difficulties for social groups who do not fit into the majority norm. This is called an aggregate situation and is not the same phenomenon as discrimination made by individual choice (Weitzer, 1996).

One example of an aggregate situation is that, until recently, applicants for police education in Sweden had to be above a certain body height. This rule was created when policing was an all male job and the population in Sweden was mainly Scandinavian. However, it became discriminating in today's multiethnic and more gender-equal society. The body height rule made many otherwise physically and mentally fit women and ethnic non-Scandinavians disqualified.

When there is an additive effect of social group membership, like ethnicity, poverty and local beliefs, an aggregate situation together with individual choices to discriminate certain groups can lead to strong effects. As an example, Lindgren and Cronsell (2003) found that 30% of Roma living in Sweden report that they have been refused when trying to rent or buy a house or apartment. No analysis was made of the processes behind this housing discrimination but my presumption is that this is both the effect of aggregate and individual discrimination. The aggregate situation is likely to be assumed, because this group is less integrated and wealthy than many other ethnic groups, and landlords look out for good economic and social status of all their applicants. Individual discrimination is also likely to be assumed as there are negative stereotypes and prejudiced beliefs about this group. Another example is the ethnic imbalance of the prison population in the U.S.A. which in the 1990s had a four times as high percentage of African Americans inside the prisons as the percentage of African Americans in the population outside prison. This situation has been further analysed and found to

be the result of a combination of aggregate and individual discrimination (Weitzer, 1996).

In this thesis, the focus is on individual discrimination. The ecological validity of discrimination is supported by frequency reports from the legal and social system, but the tendency to create hierarchies and to discriminate is tested in experimental conditions.

Social dominance

Social dominance theory

One common feature of the studies in this thesis is comparisons and analyses based on social dominance orientation, which is an individual difference variable linked to social dominance theory (SDT; Pratto, Sidanius, Stallworth, & Malle, 1994). SDT explains human hierarchy formation and maintenance. Therefore, it provides a useful theoretical input when examining hierarchies and discrimination. This theory has drawn a lot of attention and research since 1999, when it was presented by Sidanius and Pratto. The theory in short says that there are three main types of hierarchies: gender hierarchies, age hierarchies, and arbitrary hierarchies. The last type is shaped by cultural beliefs about status (Sidanius & Pratto, 1999). These social hierarchies are a universal feature in human societies. And they all have the same psychological background, which involves factors like ethnocentrism, stereotyping, and promotion of the in-group in order to gain reproductive advantages (Pratto et al., 1994; Sidanius & Pratto, 1999; Sidanius, Pratto, & Bobo, 1994).

Social dominance orientation

The tendency to accept and maintain social hierarchies can be measured through social dominance orientation (SDO), and this tendency is explained as both personality-based and socially shaped (Ekehammar et al., 2004; Pratto et al., 1994; Sidanius & Pratto, 1999). A social factor behind people's SDO scores is their position in the social hierarchy. Thus, SDO scores tend to be higher in people who have superordinate hierarchy positions compared to those who have subordinate positions, especially in hierarchy-enhancing environments (Sidanius & Pratto, 1999). This concerns both hierarchies that, according to SDT, are expected to be formed by situational factors and gender hierarchies that are said to be formed by mainly biological factors (Pratto et al., 1994; Sidanius et al., 1994; Sidanius, Levin, Liu, & Pratto, 2000). SDO is promoted by socially shared myths about the groups involved (Levin, Federico, Sidanius, & Rabinowitz, 2002).

Some previous research has examined the causal relations of SDO with personality and prejudice, using structural equation models ((Bäckström & Björklund, 2007; Duriez & Soenens, 2006; Ekehammar et al., 2004) or cross-lagged correlations based on longitudinal data (Sibley & Duckitt, 2007). All these studies have indicated that personality seems to causally affect SDO, which in turn affects prejudice. Thus, one might conclude that SDO is a construct that is causally prior to prejudice and which mediates the effects of personality on prejudice.

Why social hierarchies are of interest when studying prejudice and discrimination

The human tendency to build and maintain hierarchies among individuals and groups is constantly influencing the life of people in complex societies all over the world (Hagendoorn et al., 1998; Kleinpenning, 1993; Sidanius & Pratto, 1999; Wood & Eagly, 2002). This may be seen as a mere result of group interest or as a social and political phenomenon, evolved from historical reasons or differences in economic status and education. But there are a number of psychological factors involved in the prejudice and status thinking that lies behind the construction and maintenance of social hierarchies. These factors are cognitive (Chen & Bargh, 1997; Kleinpenning, 1993; Macrae et al., 1994), social psychological (Hagendoorn et al., 1998; Eagly, Diekmann, Johannesen-Schmidt, & Koenig, 2004; Tajfel, 1981), and personality-based (Akrami & Ekehammar, 2006; Ekehammar et al., 2004; Lippa & Arad, 1999).

A social hierarchy is also a social situation that will either enhance or diminish prejudice and discrimination among the people involved (Sidanius & Pratto, 1999). In this thesis, two central hierarchies are examined – the hierarchies of ethnicity and gender. They are universally found all over the world (Hagendoorn, 1993, 1995; Johannesen-Schmidt & Eagly, 2002; Wood & Eagly, 2002; Pepels & Hagendoorn, 2000) and they are in many ways central for shaping opportunities, behaviours, social life, and personal experiences for both groups and individuals. I do not impose that other intergroup aspects, like the hierarchy of social class, is of less interest but the number of research questions and methods limited the number of hierarchies examined in this thesis.

Why social dominance orientation is of interest when studying prejudice and discrimination

Discriminatory behaviours are better explained by prejudice than by stereotypes and the links between prejudice and discrimination need to be further examined (Fiske, 1998). As prejudice has shown strong links to social dominance orientation, this personality variable will be examined together with both behavioural discrimination and hierarchy formation in this thesis.

People's degree of SDO correlates with, for example, traditional and modern racism (e.g., Akrami, Ekehammar, & Araya, 2000; Sidanius & Pratto, 1999), political conservatism (Sidanius & Pratto, 1999; Van Hiel & Mervielde, 2002), and negative views on feminist politics (Bates & Heaven, 2001; Sidanius et al., 2000). Path analyses indicate that SDO precedes prejudice in a casual sequence (see above) but how, and why, SDO generates prejudice has not yet been fully explained.

Guimond, Dambrun, Michinov, and Duarte (2003) distinguish and test three conceptualizations of the way SDO operates in the explanation of prejudice: a personality model, a person \times situation model, and a group socialisation model. They claimed that they found stronger support for the group socialisation model than the other models but a closer look at their results gives a more ambiguous answer because socialization per se was not tested. On the other hand, Lippa and Arad (1999) found strong support for the person \times situation model as well as the personality model.

Recent research shows that SDO displays strong negative correlations with the Big-Five personality traits openness to experience and agreeableness (Akrami & Ekehammar, 2006; Ekehammar et al., 2004). Whereas SDT concerns social psychological phenomena, the variable used to measure it (SDO) can be convincingly explained by personality! The ongoing debate about the nature of SDT and its individual difference variable SDO does not make the findings less interesting (as an example, see Sidanius & Pratto, 2003). The connection between SDO and behaviour is so far an unexplored area (Guimond et al., 2003). SDO is closely connected with prejudice, and one of the main aims in this thesis was to find out if SDO also shows correlations with hierarchy perception and discriminatory behaviour.

SDO is also of interest in gender issues. Men usually show a higher level of SDO than women (e.g., Sidanius & Pratto, 1999) and this difference has caused some debate. On one side there are researchers who claim this difference to be socially caused as a result of the gender hierarchy (e.g., Eagly et al., 2004; Wilson & Liu, 2003a) and on the other side there are researchers who claim that this difference is innate and caused by evolution (Sidanius et al., 2000). To interpret those differences we need to examine how they are interrelated. Therefore, this is also an important aspect when studying hierarchies and discrimination in ethnicity and gender.

Major aims and research questions

General aim

The general aim of this thesis is to examine how SDO influences prejudice and discrimination in ethnicity and gender hierarchies, and how SDO is influenced by gender. SDO has been shown to be an important causal variable in prejudice and intergroup relations. Therefore I want to examine SDO within the hierarchical conditions that the theory (SDT) describes as essential. If SDO relates to behaviours, like discrimination and the formation of hierarchies, this can indicate that SDO not only influences attitudes, like prejudice (Study 1, 2, and 3). Further, examining the relation between SDO and gender identification (Study 4 and 5) might provide more information about the construct SDO itself. By studying SDO together with measures of a social psychological nature, like gender identification, as well as biological sex, I hope to disclose the relations between these constructs. The findings would ease interpretations of studies containing both SDO and gender issues.

Specific aims

The present thesis is built on three papers, which are based on five empirical studies. To avoid redundancy, the specific aims of each study will be given in the presentation of that study and, here, the aims will be presented in a concise form only.

In Study 1 (Paper I), the aim was to examine if ethnic hierarchies were formed in a geographical environment that rather recently has received immigrants. Another aim was to examine whether formation of ethnic hierarchies was related to SDO and ethnic prejudice. The formation of ethnic hierarchies has not been studied to the same extent as the contents of these hierarchies.

In Study 2 (Paper II), we used a model of attribution (Weiner, 1980) to examine the effect of SDO on *help*. Study 3 (Paper II) used the same model as in Study 2 to study the effect of SDO on *punishment*.

Study 4 (Paper III) attempted to examine the relationship of sex and gender identification (masculinity and femininity) with SDO. Finally, Study 5 (Paper III) was conducted as a replication of Study 4 using a different gender identification measure.

Methodology

Measuring ethnic hierarchies

The content of the ethnic hierarchy

To assess ethnic hierarchies, a questionnaire was constructed where the participant reported his or her social distance towards six different ethnic groups. The six ethnic target groups in the questionnaire were chosen from a pilot study of ten locally represented ethnic groups (Snellman, 2000) whose presence had made an impact on the local community both in numbers and social life. The community investigated is in an industry region, and therefore the ethnic groups do not represent the immigration patterns in Sweden as a whole.

The distance was measured in three specific domains: neighbourhood, school of eventual children, and work. The domains chosen were based on the findings of Hagendoorn (1993) that social distance is more important in domains where cooperation between different group members is necessary. To avoid that the questionnaire would force the participants to rank the ethnic target groups, the participant was instructed to rate his or her social distance perception of each target group instead of choosing between them. The items came as statements in the following manner: *If I had many neighbours who were X-ians, I would like it*. This kind of statement was repeated for every target group and domain. The participant was asked to express his or her social distance to each target on a four-step scale ranging from 1–*strongly agree* to 4–*strongly disagree*. The three statements were repeated for each target group and the procedure was in line with that of Hagendoorn et al. (1998) and Hraba et al. (1989).

The summed scores that the ethnic target groups received across the three domains of social contact (work, school, and neighbourhood) formed reliable scales with Cronbach Alphas varying between .78 and .86 for the various target groups. (The scale was used for the first time in this study so there were no previous data on reliability). The summed scores indicated the participant's overall social distance to the groups, the higher the score the larger the social distance.

The tendency to form ethnic hierarchies

An index for the individual tendency to rank the ethnic groups was created by measuring the standard deviation in social distance scores across the ethnic target groups in each domain of social contact (work, school, and neighbours), respectively for each participant. A high standard deviation in the social distance scores indicates a high variation in the social distances reported for different ethnic groups whereas a low standard deviation indicates a low variation in the social distances reported for different ethnic groups. The mean of the three standard deviations formed a reliable variable named Inclination to Ethnic Ranking with a Cronbach Alpha of .88. (The scale was used for the first time in this study so there were no previous data on reliability). The index made it possible to compare the different participant groups in their tendency to rank and to compare if the tendency to rank ethnic groups was related to their scores on ethnic prejudice and SDO.

Ethnic prejudice

Classical racism

Classical racism (or traditional racism) is a pre World War II version of ethnic prejudice. The roots of classical racism lie in the colonial era. Classical racism is based on beliefs of biological differences causing variability in intelligence and behaviour among ethnic groups. Northern Europeans are seen as superior and fit to rule the other ethnic groups and representatives of other ethnic groups are seen as a biological and genetic threat to the human race. Race is a term for classification of groups within species that show larger physical differences than ethnic groups of humans do. Therefore the expression *classical ethnic prejudice* is also used in this thesis.

Modern racism

The tendency to express modern and classical prejudice was measured by scales that have been constructed by Akrami, Ekehammar, and Araya (2000). (Item example for the classical scale: *Immigrants do not keep their homes tidy*; item example for the modern scale: *Discrimination against immigrants is no longer a problem in Sweden*). The internal consistency reliabilities in their study was satisfactory ($\alpha = .73$) for the classical scale and ($\alpha = .80$) for the modern scale. The average inter-item correlation was .31 for the classical scale and .36 for the modern scale (Akrami et al., 2000). In Study 1 the items were answered on a four-step scale.

The social dominance orientation (SDO) scale

To measure the social dominance orientation that a person displays, the present thesis employed a Swedish translation of the construct's operational measure, the social dominance orientation scale. The SDO₆ scale, used in all the studies in this thesis, was originally constructed by Pratto et al. (1994) and consists of 16 items. This version of the scale seems to be the most commonly used and therefore it is easy to compare the results with other studies on SDO. Here are some item examples: *Some groups of people are just inferior to others* (approving suggests high social dominance orientation), *We would have fewer social problems if we treated all groups equally* (approving suggests low social dominance orientation). When the SDO₆ scale was initially tested, on 14 different samples, the Cronbach Alphas varied between .66 and .92 (Sidanius & Pratto, 1999). In Study 1, the items were answered on a four-step scale and in Study 2 to 5, a seven-step scale was used.

Discrimination measure based on Weiner's model of social conduct

Weiner's model (1980) of social conduct has previously provided reliable and valid results (Cobb & De Chabert, 2002; Greitemeyer, Rudolph, & Weiner, 2003; Weiner, 2001, 2003). The method that is commonly used to test this model was employed in the present studies as well. What was different from Weiner's work (e.g., Weiner, 2001) in the present studies was that ethnicity and gender were added as variables for the target persons in the scenarios.

The participants were asked to report their reactions to a written scenario about a target person who either is in need of help or has committed a social transgression. To avoid socially desirable answers we used a between-groups design, giving each participant only one scenario to rate. The reactions comprised amount of responsibility attributed to the target person, emotional reaction (sympathy or anger), and degree of social sanction (punishment or help). The goal of Study 2 and 3 was to examine a possible ethnicity or gender effect on attributions of responsibility and social sanctions. This was obtained by varying the ethnicity or gender of the target person. We assumed that the reactions to the scenarios would vary, and that this could work as a measure of possible discrimination towards targets of certain groups.

In Study 2, manipulation of target ethnicity was done by briefly mentioning in the scenario text that the male target person had moved into town from the Swedish countryside or by mentioning that he had moved into town from the Middle East. The ethnic and gender manipulation in Study 3 was done by

giving the target person a name that could be connected with the ethnic group and gender we wanted the target to have.

The reactions to the scenarios were measured in the same way in both Study 2 and 3 with respect to the different social sanctions that was examined. The participants were asked to rate the degree of attributed responsibility, sympathy, anger, rehabilitation, and punishment or help on lines marked from 0% to 100%.

The Bem Sex Role Inventory (BSRI)

The BSRI was initially (Bem, 1974) composed of 60 items describing different personality characteristics related to femininity and masculinity, respectively, and was constructed in the beginning of the 1970s. Since then societal changes have caused many of the original items to become sex-neutral (Hoffman & Borders, 2001). Thus, instead of using Bem's (1974) original scale, we used a shortened and translated version adapted to a contemporary Swedish context by Marongiu and Ekehammar (1999). (Item example for the femininity scale: *I am cooperative*; item example for the masculinity scale: *I am competitive*).

The internal consistency reliabilities reported by Marongiu and Ekehammar were satisfactory for the femininity ($\alpha = .79$) and the masculinity scale ($\alpha = .85$). Both scales comprised 12 items. In Study 4, the items were answered on a seven-step scale.

Gender identification

The gender identification scale by Wilson and Liu (2003a) is bipolar and the items addresses attitudes, priorities in daily life, relations, life experience, occupational choice, interests, and gender identity. The participant is not asked to report whether he or she is acting in line with the cultural concepts of masculinity or femininity. Instead the scale addresses the participant's personal experience of identification with men or women in relation to the items.

We translated and presented the items used by Wilson and Liu (2003a) as visual analogue scales. Thus, we asked participants to mark (on a 10 cm line) whether they felt closer to women or men on the seven different items (attitudes, priorities in daily life, relations, life experience, occupational choice, interests, and gender identity). The left side of each line was anchored *Women* and the right side *Men*. The responses of each participant to each item were, using a ruler, assigned a number (0-10) with a higher score indi-

cating more closeness to *men*. For each participant, we computed the mean across the seven items to arrive at a final gender identification score.

When this scale was initially tested by Wilson and Liu (2003a), the internal consistency reliability was satisfactory ($\alpha = .68$), and the average inter-item correlation was .35.

Statistical issues

In Study 2 to 5, regression analysis was used to enhance the statistical power. The alternative would have been to dichotomise the variables in order to conduct an ANOVA, and risk misleading results (Cohen, 1983).

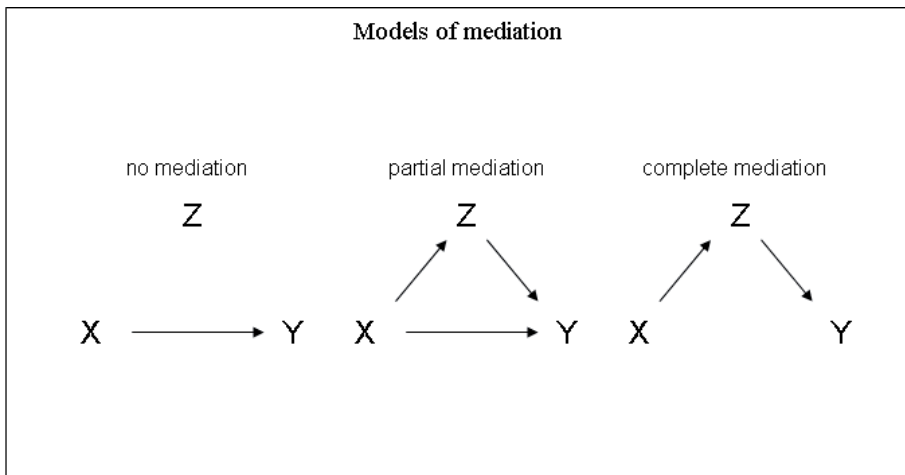


Figure 1. Three models of mediation

The tests of mediation in Study 4 and 5 were conducted using the Sobel (1982) test, which is suggested by Kenny (2006), among others. The idea of moderation is that some (moderating) variables contribute to the size of the effect together with other variables, whereas the idea of mediation is that some (mediating) variables are necessary for the effect of other variables to occur. In Figure 1, three different conditions of mediation are displayed. Consider a variable X (the initial variable) that is assumed to affect variable Y (the outcome variable). The unmediated model is illustrated to the left in Figure 1 – the total effect on Y derives from variable X. The right part of Figure 1 illustrates the opposite condition, a complete mediation – there would be no effect at all of X on Y without the variable Z. In many cases it is not this easy to untangle the relations between variables as the mediation

is partial. Partial mediation is illustrated in the middle of Figure 1 – the path from X to Y is reduced in absolute size but is still different from zero when the mediator Z is controlled for (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002).

By using the Sobel (1982) test, the overall significance of the mediation effect is tested. In the example of the partial mediation model in Figure 1, the test takes into consideration both the link from X to Z as well as the link from Z to Y.

Empirical studies

Paper 1

Background

Previous research on multicultural societies has shown that people tend to create and maintain ethnic hierarchies based on social distance to the country's primary ethnic group (Hagendoorn et al., 1998). There is a higher degree of discrimination against non-European than European immigrants in Sweden (Lange, 2000; Kardell, 2006; Pettersson, 2006).

Contact between social groups does not necessarily reduce bias or conflicts. According to the contact hypothesis, the contact situation between groups must contain conditions like equal status between the groups, cooperative inter-group interactions, opportunities for personal acquaintance between out-group members and supportive egalitarian norms (Allport, 1954; Emesik & Mackie, 1989; Hubbert, Gudykunst, & Guerro, 1999).

When immigration of new ethnic groups to a society takes place, equal status between immigrants and native groups is seldom the case. If we leave aside curious individuals or economically strong groups who establish themselves in order to exploit business opportunities, migration often comes out of necessity (Lund & Ohlsson, 1994). And whether the migration is caused by work market reasons or a refugee situation, the arrival in the new country often has to start with a search for basic things like housing and work. This search may often be obstructed by language difficulties, lack of social contacts and cultural differences. Therefore the immigrants do not meet the ethnic groups living in the country on status-equal terms.

Groups and individuals differ in their ability to adapt to the new culture and its system (Pepels & Hagendoorn, 2000). In multicultural societies there can be groups who after hundreds of years still have not reached a status-equal position whereas other groups reach the position in less than a generation. Some social factors behind the speed of this adaptation process are cultural distance to the new country's primary group. An immigrant group that shares the primary group's cultural values has a larger tendency to blend in fast (Hagendoorn, 1995). Group characteristics are also crucial when groups start to form stereotypes about each other. The stereotypes and the prejudice

they may adopt will form the primary group's willingness to take the new group into the society (Hagendoorn, 1993).

People's beliefs in their cultural superiority, their ethnocentrism (Emessik & Mackie, 1989; Hagendoorn, 1995) and stereotypes may lead to a ranking of the out-groups closer or further away from the in-group depending on how socially desirable the out-group is perceived by the in-group (e.g., Hraba, Hagendoorn, & Hagendoorn, 1989; Hagendoorn et al., 1998). This is in line with Tajfel's (1981) notion that the in-group's status affects the members' personal status, and therefore the in-group status has to be protected by social and cognitive constructions.

A study of the ranking of ethnic groups can show to what extent out-groups are stereotyped as culturally deviant. Societies differ in economy, social development, historical background and multicultural migration patterns. Those differences seem to affect the way ethnic prejudice is expressed. Therefore, one can not presume that the research on prejudice and discrimination in Sweden and for example the USA always will have similar outcomes. Immigration to Sweden in large numbers is quite a new phenomenon (Lund & Olsson, 1994). There have been other groups present like Sámi, Finns and Travellers, and since medieval time, Roma and later on, Jews. The ethnically Swedish population has merely coexisted with these groups and blending in has never been an option for these groups. The ethnic prejudice of the participants in this study was considered to be of interest. The connection with SDO and ethnic hierarchies (EH) had not yet been tested. By exploring and connecting EH to concepts like modern and classical racism and SDO it is possible to take the concept of EH further into a theoretical framework on prejudice and discrimination.

Method

Questionnaires containing items about social distance towards six target groups, scales for SDO and classical and modern racism/ethnic prejudice (see Akrami et al., 2000) were constructed in two versions. The questionnaire for Swedish participants had the wording of the items unchanged from the original scales whereas the questionnaire for immigrants had items with the word "immigrants" changed into "new immigrants", defined as groups who arrived to Sweden after your group. The Cronbach Alpha reliabilities were .88 for the Social Dominance Orientation Scale, .66 for the Modern Prejudice Scale, and .61 for the Classical Prejudice Scale.

The target groups were Italian, Somalian, Swedish, Syrian, Iranian and South American. (The last group was referred to as "South American" instead of using the different nationalities of its members as they seemed to be perceived as a fairly homogenous group by the community).

Participants

The participants were a convenience sample of 150 non-psychology students, ranging from 18 to 57 years in age. They were recruited at an adult industrial centre, an adult high-school centre, and Mälardalen University. Their educational level ranged from high-school (or just below) to university. The participants also varied in ethnic background, 29 different countries were represented. The levels of education were evenly spread across the different ethnic backgrounds. In-group favouritism was not to be measured so there was no need for a match between the target and participant groups. The high percent of immigrants was essential because a comparison between ethnic Swedes and immigrants was part of the research question. The participants formed four mutually exclusive subgroups on the basis of gender and ethnic origin: Swedish women ($n = 46$), Swedish men ($n = 48$), immigrant women ($n = 25$), and immigrant men ($n = 31$).

Procedure

The participants were approached at their campuses. After asking for ethnic origin they were either given the questionnaire for Swedish participants or they were given the questionnaire for immigrants. The questionnaires were handed back and the participants were debriefed and thanked directly after the questionnaires had been filled in.

Results and Comments

Ethnic hierarchies. The mean social distance score of each target group was computed for all participants and for each of the four subgroups. The results showed that the social distance scores of the six target groups were very similar across subgroups of participants. The similarity among the subgroups was further analysed by computing pair-wise product-moment correlation coefficients between the subgroups' mean social distance scores across the six target groups. The correlation coefficients ranged from .95 to .99.

Table 1

Mean Social Distance Scores (SDs in Parentheses) of the Six Ethnic Target Groups for All Participants Combined

Swedish	Italian	South American	Somalian	Iranian	Syrian
4.91 (1.86)	6.17 (2.16)	6.50 (2.41)	7.31 (2.57)	7.20 (2.59)	7.34 (2.59)

Note. The mean scores were based on participants' social distance scores across target groups in each domain.

In Table 1, the target groups are presented in the same order as they were ranked by the combined sample. The Swedish target group was ranked first, the Italian as second, and the South American as third. Further, the Somalian was ranked as fourth, the Iranian as fifth, and the Syrian as sixth.

The combined sample was further analysed using repeated measures *ANOVA* to test if there were statistical differences in the social distance mean scores among the six target groups. The results disclosed a highly significant overall difference ($p = .001$) between the target groups. A post-hoc test showed that the Swedish target group differed significantly ($p = .001$) from all other target groups whereas the Italian and South American did not differ significantly ($p = .08$) from each other but from all other groups ($ps = .001$). Finally, the Somalian, Iranian, and Syrian groups did not differ significantly from each other (ps varying from .22 to .60) but from the other three target groups ($ps = .001$). Thus, a hierarchical order was shown among the six ethnic target groups, with the Swedish ranked first, the Italian and South American ranked second, and the Somalian, Iranian, and Syrian ranked third.

As stated by Hagendoorn and Hraba (1987), cultural similarity and time spent in the country seem to be two of the most important factors when placing a group in the local ethnic hierarchy. The participants placed the target groups Italians and South Americans in the second place after the Swedes. The Italians are the immigrant group that had spent the longest time in the present local community. With their European background they are the group most likely to share a common culture with the Swedes. Their immigration started when there was a high need for workforce in Sweden and they were soon a part of the local community. The South American immigrant group started their immigration in the 1970s and in spite of descending from another continent they have important cultural similarities with the Swedes, like degree of secularisation.

As in Hagendoorn's (1993) study, the three ethnic target groups ranked at the third level in the hierarchy represent African and Middle-East countries and they had spent the shortest time in the local community and in Sweden overall. The primary group usually has a longer social distance to groups that are perceived to be strongly united and to have a patriarchal lifestyle (Hagendoorn & Hraba, 1987; Kleinpfenning, 1993), which probably contributed to their ranking at the third level.

Inclination to ethnic ranking. A majority (85%) of participants showed an inclination to rank the ethnic target groups. (The non-ranking participants used the lowest social distance score for all target groups.) For each participant, the mean standard deviation of the social distance scores across the three domains was used as an overall index of participants' degree of ethnic ranking.

A 2 (participant gender) \times 2 (participant ethnicity: Swede, immigrant) ANOVA of the scores on inclination to ethnic ranking displayed no significant effects of gender or ethnicity and no significant interaction effect. Further, a 2×2 ANOVA of the scores on each of the other variables (modern and classical ethnic prejudice and SDO) displayed no main or interaction effects of gender or ethnicity. The similarity among subgroups on inclination to ethnic ranking is in line with earlier studies (Hagendoorn & Hraba, 1987) but the high similarity between the subgroups in modern and classical ethnic prejudice and SDO is not (e.g., Ekehammar et al., 2003). This result might depend on a high level of integration of the immigrant participants (they had spent enough time in the Swedish culture to attend an education held in Swedish). The lack of difference between men and women in the sample might depend on that the female participants had been assimilated to a mainly male culture because most participants were recruited from educations in typically male areas.

Ethnic ranking and SDO. The final expectation was that inclination to ethnic ranking would display a higher correlation with SDO than with ethnic prejudice because both SDO and inclination to ethnic ranking express the person's inclination to perceive relations among social groups as hierarchical.

A product-moment correlation analysis on the combined sample disclosed that inclination to ethnic ranking showed the highest correlation with modern ethnic prejudice ($r = .29, p = .001$), followed by classical ethnic prejudice ($r = .25, p = .002$), and SDO ($r = .23, p = .004$). However, the differences in magnitude between these correlation coefficients were not statistically significant. Thus, there was a correlation between SDO and inclination to ethnic ranking as predicted. However, the hypothesis that this correlation would differ in magnitude from that for the relation between ethnic prejudice and inclination to ethnic ranking was not supported.

Paper II

Study 2

Background

Social sanctions like punishment and help are often based on attributions about how much responsibility for the situation the individual who is the target of the sanction has (Weiner, 2001). The tendency to make attributions of responsibility is, according to Weiner (2001), based on a social conduct norm. The norm is that people are supposed to do their best and to avoid becoming a burden to the rest of the society. When someone needs help or is

guilty of a social transgression he or she may be forgiven and treated with sympathy if it was not their fault (Weiner, 1980, 2001). Weiner's model of social conduct has proven to be reliable across several conditions (Cobb & De Chabert, 2002; Greitemeyer, Rudolph, & Weiner, 2003; Weiner, 1980, 2001, 2003). So from a social cognition view it made sense using situations of punishment and help when testing discrimination.

In this study, the social sanction was help and the possibility that it would differ between Swedes and immigrants. At the homepage for DO (the authority handling complaints on ethnic discrimination in Sweden) a search of the period January 2000 to March 2006 showed that there were 173 complaints reported about social welfare, and there were 274 complaints about the juridical system. But as many citizens do not know that they can complain to DO, it is difficult to get a picture of the size of eventual discrimination. The juridical system has been examined to a larger extent and discrimination within the system clearly occurs (Pettersson, 2006).

The experiment in Study 2 examined if discrimination of immigrants would show up in experiments about help in a welfare situation. The social dominance orientation (SDO) of the participants was measured in this study in order to explore the possibility that SDO is a factor behind discrimination. SDO has earlier shown correlations with ethnic prejudice (Akrami et al., 2000; Ekehammar et al., 2004; Lippa & Arad, 1999; Pratto & Lemieux, 2001; Sidanius & Pratto, 1999). The connection between SDO and discrimination has to the best of my knowledge so far only been tested by Guimond, et al. (2003). An important difference between this study and the one by Guimond et al. (2003) is that in this study, using a between-groups design, the participant only had to report their reactions about one type of target – not choose between the targets, as in Guimond et al. (2003). Eventual discrimination will therefore not be an artefact of the present design.

Method

The experiment was carried out using questionnaires containing a scenario and the SDO scale. The scenario described a person who was an applicant of social welfare. The manipulation of the target ethnicity was done by briefly mentioning that he had moved into town from the Swedish countryside or by mentioning that he had moved into town from the Middle East. The scenario had a low-responsibility version and a high-responsibility version. In the first, the target person had accidentally ended up in his situation and in the second, the target had actively caused it. The reactions to the scenario were asked for by items like: *How responsible do you think X is for his situation? Do you feel anger towards X? Do you feel sympathy towards X?* This was followed by the SDO scale. The questionnaires were collected directly after they were filled in and the participants were debriefed.

Participants

There were 80 participants, 27 men and 53 women, 19 to 61 years of age ($M = 36.0$ years). They were students at the Department of Law and the Department of Economics, Uppsala University, and students in adult education held by the local employment office in Uppsala. We used a sample of ethnic Swedes, as the study dealt with possible discrimination towards a subordinated ethnic group.

Procedure

The participants reported their reactions to a written scenario that had four different versions. We used a 2 (Target Ethnicity: Swedish, Middle East) \times 2 (Target Responsibility: high, low) factorial between-groups experimental design with random assignment. The gender of the target person was male in all versions. Participants received the questionnaire from their teacher at the different educational programs they attended and the questionnaires were handed in directly after they had been filled out. The four versions of the questionnaire were randomly distributed on participants and no information about the other versions was given until debriefing. There were 20 participants in each combination of target ethnicity and target responsibility.

In this study, discrimination was tested by asking participants to rate the degree of help they would recommend to a target person. The target person could be either of Swedish ethnicity (from the top of the ethnic hierarchy in Study 1) or Middle East ethnicity (from the bottom of the ethnic hierarchy in Study 1) and the participant encountered only one of the ethnicity conditions. The between-groups design was used to avoid answers shaped by the social taboo to express ethnic prejudice. The procedure went: Participant read a scenario of a hypothetical case \rightarrow rated the degree of target person's responsibility \rightarrow rated his or her emotional reaction \rightarrow rated the degree of help he or she recommended for the target person \rightarrow answered the scale for measuring his or her SDO. The Cronbach Alpha reliability of the SDO scale was .81.

Results and Comments

The experimental manipulation of responsibility (manipulated responsibility) was tested by computing a point-biserial correlation coefficient between manipulated responsibility in the vignette (low = 0, high = 1) and the participants' attributed responsibility (the higher the score the higher the responsibility). The resulting coefficient was $r = .41$, $p = .001$, which indicates that the experimental manipulation of the target person's responsibility was successful. Thus, Weiner's model seemed to work also when targets were of two different ethnicities, and the manipulated level of responsibility affected the level of responsibility that the participants attributed to the target.

To test if participant's SDO has a general and negative effect on help behaviour, we performed a hierarchical multiple regression analysis on the combined sample with help as the dependent variable. In step 1 we introduced SDO, in step 2 ethnicity, and in step 3 the SDO \times Ethnicity interaction. The results showed that the effect of SDO on help was significant, $r = -.25$, $p = .03$, but the interaction did not contribute significantly to the regression. This indicates that the correlation between SDO and Help was not significantly different for the Middle-East ($r = -.38$, $p = .02$) and the Swedish ($r = -.14$, $p = .39$) targets. One explanation for the result is that ethnicity is not important in a situation of help. Another explanation could be that the choice of target person's economic status was wrong. The perceived status difference between the students in the participant group and the social welfare applicants in the target groups might have been so large that ethnicity became less important. In support for this explanation is the fact that participant's SDO showed a general and negative effect on help behaviour.

Another hierarchical regression was performed, this time to test if participant's SDO had a general effect on her or his attributions of responsibility (this would be reflected in a positive correlation between SDO and attributed responsibility). Also, we tested if the correlations between attributed responsibility and SDO are more pronounced for the Middle East target group compared to the Swedish target group (this would show up as an interaction effect of SDO and ethnicity). The hierarchical regression was performed in the same manner as above but with attributed responsibility as the dependent variable. The results showed that the general effect of SDO on attributed responsibility was non-significant ($r = .10$, $p = .36$) and the SDO \times Ethnicity interaction did not contribute significantly to the regression.

In sum the results above show that SDO influenced the degree of help but not attributions of responsibility. It seems like SDO is not involved in the process of attributing responsibility but that it is a factor behind the degree of help a participant decides to give. The absence of an interaction effect means that SDO affects help and responsibility in the same way for both high- and low-status ethnic groups. Finally, we found Weiner's model to be an interesting tool for further research on how SDO influences social sanctions like help and punishment.

Study 3

Background

The results of Study 2 showed that it was possible to go further with the social conduct model (Weiner, 1980) to examine the possibility of discrimination in punishment behaviours. As far as ecological validity goes there are many reports of discrimination in the legal system towards subordinated

ethnic groups (e.g., Albonetti, 2002; Sommers & Ellsworth, 2000; Talley, Rajack-Talley, & Tewksbury, 2004; Weitzer, 1996), and in Sweden immigrants often get longer sentences than ethnically Swedish defendants (Kardell, 2006; Pettersson, 2006). Study 3 was a conceptual replication of Study 2. As Study 2 had shown that Weiner's model of social conduct worked also when the ethnicities of the target persons varied, the two levels of responsibility used in Study 2 were left out. We added gender to this study because it is a strong factor behind length of sentences and likelihood of arrest (Albonetti, 2002; Stoltzenberg & D'Alessio, 2004). The status difference seems to work differently for gender than ethnicity. Thus, ethnic groups on the lower levels of the ethnic hierarchies are treated harsher than ethnic groups with higher status (Talley et al., 2004), but the gender group with the higher status (men) are subjected to a harsher treatment than the gender group with the lower status (women) (Albonetti, 2002).

Method

The scenario described a case where a poor person shoplifted food and the alternative social sanctions against the target person were punishment and rehabilitation. The manipulation of ethnicity and gender was done by giving the target person a name. By using statistics from the homepage of the Swedish Central Bureau of Statistics and two pilot studies, the names Elin (a Swedish female name), Martin (a Swedish male name), Samira (a Middle-East female name), and Ali (a Middle-East male name) were chosen. These names were fairly common and, according to a pilot study, did not give any noticeable class or other social associations. The participants were asked to rate the degree of attributed responsibility, sympathy, anger, rehabilitation, and punishment on lines marked from 0% to 100%. Finally the SDO scale followed.

Participants

The 153 participants were recruited at university grounds and at the local agency for employment. The goal was to have a native Swedish sample so 23 questionnaires had to be removed. By using a native Swedish sample, we aimed at obtaining different ethnic status between participant and Middle-East target person. The final sample consisted of 130 persons, 61 men and 69 women. The number of participants in each combination of target ethnicity and target gender was as follows: Middle-East woman ($n = 35$), Swedish woman ($n = 34$), Middle-East man ($n = 32$), and Swedish man ($n = 29$).

Procedure

The procedure was the same as in Study 2. We used a factorial 2 (Target Ethnicity: Swedish, Middle East) \times 2 (Target Gender: male, female) between-groups experimental design with random assignment. After this experimental part the SDO scale followed. The questionnaires were handed out

and collected directly after they were filled in and the participants were debriefed. The Cronbach Alpha reliability of the SDO scale was .85.

Results and Comments

A series of hierarchical multiple regression analyses were performed in order to examine an eventual effect of SDO on punishment, rehabilitation, attributed responsibility, sympathy and anger. The order in which the independent variables were introduced was the same for all analyses: SDO in step 1, ethnicity in step 2, gender in step 3, the SDO \times Gender interaction and the SDO \times Ethnicity interaction in step 4, and finally the SDO \times Ethnicity \times Gender interaction in step 5.

The results showed that the effect of SDO on punishment was significant ($r = .22, p = .01$). Further, the SDO \times Ethnicity interaction provided a significant contribution ($p = .03$) whereas the other interactions were non-significant. This implies that the correlation between SDO and punishment differed for Swedish ($r = -.07$) and Middle-East ($r = .38$) targets. Significant effects of SDO were also shown on attributed responsibility ($r = .18, p = .04$), sympathy ($r = -.24, p = .01$) and anger ($r = .22, p = .01$) whereas all interactions were non-significant. Thus, participant's SDO was shown to correlate with a harsher reaction towards all targets. The participant's SDO affected both the discriminatory behaviour towards Middle-East target persons and the reactions to the target. Finally, for rehabilitation, there were no significant effects of SDO at all (ps varying between .14 and .94).

There were significant effects of target gender on punishment, partialling out the effect of ethnicity (partial $r = -.20, p = .02$), attributed responsibility (partial $r = -.22, p = .01$), sympathy (partial $r = .23, p = .01$), and anger (partial $r = -.21, p = .02$). This implies that regardless of their ethnicity, women were attributed with less responsibility than men and they also evoked less anger, more sympathy and received less punishment than men. This is in line with previous findings (Stoltzenberg & D'Alessio, 2004). However, because there was no SDO \times Gender interaction, participants' SDO did not significantly contribute to this difference in reactions towards male and female targets. SDO has earlier been found to correlate with sexism (Bates & Heaven, 2001) but it does not seem to have any correlation with benevolent sexism (Glick & Fiske, 2001) that may lie behind a more sympathetic treatment of female compared to male social transgressors.

In conclusion, participants with high SDO scores showed a tendency to discriminate subordinated ethnic groups. This is partly in line with Pratto and Lemieux (2001), who found that ambiguity of immigration policies, was more convincingly explained by SDO rather than by ethnic prejudice. The tendency to discriminate ethnic groups who are placed further down on the

ethnic hierarchy (Kardell, 2006; Pettersson, 2006) seems not just to be a result of an aggregate situation or disparity of the crimes.

Paper III

Study 4

Background

The biological impact on human behaviour can not be denied, but its size is often exaggerated. An explanation for this is the difficulty to draw a line between social impact and biological impact. In the case of social dominance which is both a personality variable as well as a social one this is at least partly possible. Research on SDO usually shows a small but significant gender difference in SDO, men score higher on the SDO scale than women (Sidanius et al., 1994; Sidanius, & Pratto, 1999; Sidanius et al., 2000).

Is this gender difference an important feature of SDO? According to the founders of the theory it is, and it is expressed in the *invariance hypothesis* (Sidanius et al., 1994). The invariance hypothesis states that –everything else being equal– men should significantly exceed women in SDO scores (Sidanius & Pratto, 1999, p. 268). So, according to the invariance hypothesis men will always have higher SDO than women when they belong to social groups similar in status, like class or ethnicity (Levin et al., 2002; Sidanius & Pratto, 1999).

The invariance hypothesis comes in two versions. In Sidanius et al. (1994) the versions are described as the strong and the weak version. The strong version implies that the SDO difference between men and women should be essentially constant across cultural and situational factors, or both. The weak version of the invariance hypothesis suggests that although sex might interact with a number of cultural factors, this interaction will always be ordinal and never disordinal. In a more recent paper by Sidanius et al. (2000), the wording of the hypothesis is softer but the basic meaning is the same as they state that the stability of gender differences in SDO will be substantially greater than the SDO differences between dominant and subordinate arbitrary set groups. This is based on the assumption that reproduction strategies lie behind the sex difference in SDO and that they are quite similar across cultures, societies, historical epochs, and even species.

It has been argued that the sex difference in SDO scores probably is an artefact of group status (Eagly et al., 2004). This socialization/situation explanation receive some support in SDT itself because the theory states that higher status is linked to higher SDO (Sidanius & Pratto, 1999). Because men usu-

ally have a higher status than women also within the social groups they share, their SDO may become higher as a result of the gender hierarchy (Eagly et al., 2004; Lippa & Arad, 1999).

The invariance hypothesis has been questioned and tested earlier with varying results. One conclusion these studies have in common is that the sex difference remains but varies as a result of situation and personal interests (Foels & Pappas, 2004; Lippa & Arad, 1999; Wilson & Liu, 2003a). To my knowledge, the most successful studies in exploring the sex difference on SDO are the ones by Lippa (1995) and Lippa and Arad (1999). These studies do not, however, support a socialization/situation explanation of the sex difference in SDO, neither do they go for personality as the only explanatory model. Lippa (1995) found that masculinity, measured by the gender diagnostic he developed, was significantly associated with men's authoritarianism, SDO, and endorsement of gender inequality. Lippa argued that social dominators' masculinity may reflect their aggressiveness, dominance and preference for hierarchy-enforcing roles. However, women's femininity was not related to their SDO or their attitudes toward women's rights. In Lippa and Arad (1999), the male participants with high SDO scores were judged to be disagreeable and coarse. SDO has also been found to have a negative correlation with agreeableness (Akrami & Ekehammar, 2006) and to be highly correlated with prejudice (Ekehammar et al., 2004; Lippa & Arad, 1999; Sidanius & Pratto, 1999).

Lippa and Arad (1999) did not, however, address the question of mediation or moderation from the socialisation variable, gender identification, on SDO scores. Foels and Pappas (2004) and Dambrun, Duarte, and Guimond (2004) did make an attempt, but this was done without testing a moderating effect. In both studies the conclusion was that gender identification mediates the sex difference in SDO. On the other hand, Wilson and Liu (2003a), without testing a mediating effect, conclude (but on questionable ground) that gender identification moderates the effect of sex on SDO.

The main reason for making another attempt to examining the sex difference in SDO in this thesis is the theoretical notion from SDT that the gender hierarchy enhances the other hierarchies in human societies (Sidanius & Pratto, 1999; Levin et al., 2002) and that the effect of sex on SDO has not been satisfactory explored. By testing SDO together with gender identification and further examine the question of mediation versus moderation, we can learn more about the proportions of the nature and nurture factors supposed to lie behind the sex difference of SDO. The aim was to examine the sex difference in SDO by examining the contribution of gender identification (as expressed through the Bem Sex Role Inventory – BSRI). We tested if gender identification had a mediating or moderating role for the relation between sex and SDO but we did not take any a priori position on this question.

Method

The data were collected through questionnaires containing the SDO scale and a validated version of the BSRI. The Cronbach Alpha reliability of the SDO scale in the present sample was .84, and for masculinity it was .80 and for femininity .81.

Participants

There were 538 participants (296 women and 242 men). Their mean age was 25 years and they represented various academic disciplines. We recruited the participants through advertisements at Uppsala University to take part in the study for a free cinema ticket.

Procedure

The questionnaires were distributed at various study centres and libraries. The participants completed the questionnaire individually and were instructed not to talk to each other during completion. After having completed the questionnaires the participants were thanked and debriefed. All participants were anonymous in the study and received cinema vouchers for their participation.

Results and Comments

As shown in Table 2, the BSRI displayed high reliabilities but low correlations with sex. The gender-related variables (sex, femininity, and masculinity) showed small but statistically significant correlations with SDO that varied between .12 and -.19 and were not statistically significant from each

Table 2

Means and Pearson Correlation Coefficients for the Relations among the Main Variables in Study 4 (N = 538) and Cronbach Alpha Reliabilities in the Main Diagonal

Variable	<i>M (SD)</i>	Correlations			
		1	2	3	4
1. SDO	1.79 (0.55)	.84			
2. Sex	0.45 (0.50)	.12**	1.0		
3. Femininity	3.96 (0.49)	-.19**	-.13**	.81	
4. Masculinity	3.41 (0.57)	.12**	.10*	-.03	.80

* $p < .05$, ** $p < .01$, Sex: woman = 0, man = 1.

other. The positive correlation between sex (woman = 0, man = 1) and SDO means that men ($M = 1.86$) had higher scores on SDO than women ($M = 1.73$), and this correlation ($r = .12$) was low compared with those of previous studies (e.g., Sidanius et al., 1994). The correlation between SDO and femininity was negative meaning that high femininity is linked to low SDO. The correlation between SDO and masculinity was positive, which means that high masculinity is linked to high SDO. Finally, and in line with the original theory (Bem, 1974), masculinity and femininity showed no correlation.

A mediation analysis was conducted following the Baron and Kenny (1986) steps. A partial regression analysis was performed using SDO as the outcome variable to control for sex. The results showed that both masculinity and femininity displayed significant partial regression coefficients. We performed three mediation analyses, the first for masculinity and femininity together (see Figure 2), the second for masculinity alone, and the third for femininity alone. Finally, the direct effect of sex on SDO was calculated by subtracting the indirect effect (through gender identification) from the total effect. The standardized regression and partial regression (within parentheses) coefficients are presented in the figure to ease interpretation.

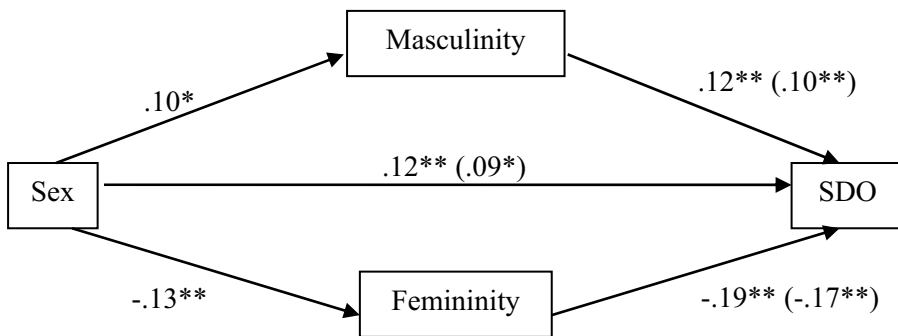


Figure 2. A causal model of sex (woman = 0, man = 1), femininity and masculinity, and SDO showing standardized regression and partial regression (within parentheses) coefficients ($*p < .05$; $**p < .01$).

A Sobel (1982) test (one-tailed) for the mediating effect using the unstandardized coefficients (see e.g., MacKinnon et al., 2002) showed that this indirect effect was statistically significant when using masculinity ($p = .05$) and femininity ($p = .01$) together as mediators. At the same time, the direct effect of sex on SDO was significant as well, $p = .04$ (see Figure 2). This means that there is a situation with partial mediation where gender identification (through femininity and masculinity) partially mediates the effect of

sex on SDO. In other words, there is both a direct and an indirect effect of sex on SDO. We conducted the same analysis as above using femininity and masculinity separately in the tested model. The results showed that the mediation effect was significant for both femininity ($p = .01$) and masculinity ($p = .04$) and the direct effect of sex on SDO remained significant as well ($p = .02$, and $p = .01$ for femininity and masculinity, respectively). In conclusion, the three analyses showed that gender identification mediated parts of the total effect of sex on SDO.

Testing for a moderating effect (i.e., an interaction of sex and gender identification), we followed the Aiken and West (1991) procedure and performed three hierarchical regression analyses, one with masculinity and femininity, a second with masculinity alone, and a third with femininity alone as potential moderators. SDO was the dependent variable in all analyses, and we entered in the first analysis sex in step 1, masculinity and femininity in step 2, and the two interaction components in step 3 (the product of sex and masculinity, and the product of sex and femininity). The results showed that the interaction effect was non-significant, $p = .59$. We repeated the same analysis as above using masculinity and femininity as separate moderators. There was no moderation effect in any of the cases. Thus, we could not get any support for a moderating effect of gender identification in the present data.

The influence of gender identification on SDO was significant, which is in line with Foels and Pappas (2004) and Dambrun et al. (2004). Gender identification partially mediated the effect of sex on SDO. As gender identification and sex showed no interaction the results are also in line with the invariance hypothesis.

One could argue that the invariance hypothesis in fact is difficult to prove or reject. As men are above women in the gender hierarchy, their higher SDO scores can be explained by their gender-hierarchical position. Therefore, when the invariance hypothesis states “everything else being equal”, it is hard or even impossible to find such a condition.

The aim of this study was not to prove or reject the invariance hypothesis. It was to examine the sex difference in SDO by examining the contribution of gender identification (as expressed through the BSRI). The present result showed that there was a contribution of gender identification on the already small sex difference.

Study 5

Background

Study 5 was a replication of Study 4 using another measure of gender identification. In this way the robustness of the results from Study 4 could be

tested. The gender identification scale used in Study 5 had been used in a previous study on the invariance hypothesis (Wilson & Liu, 2003a). Thus, Study 5 was an attempt to both replicate and go further with the results of Study 4.

Method

The data were collected through questionnaires containing the SDO scale and the gender identification scale used by Wilson and Liu (2003a). The Cronbach Alpha reliability of the SDO scale in the present sample was .84, and for gender identification it was .82.

Participants

There were 182 university students (98 women and 84 men). Their mean age was 23 years and they represented various academic disciplines (e.g., social science, behavioural science, medicine, economics, technology, and dentistry). We recruited the participants through advertisements at Uppsala University to take part in the study for a free cinema ticket.

Procedure

The questionnaires were distributed at various study centres and libraries for studies in the social sciences, humanities and natural sciences. The participants completed the questionnaire individually and were instructed not to talk to each other during completion. After having completed the questionnaires the participants were thanked and debriefed. All participants were anonymous in the study and received cinema vouchers for their participation.

Results and Comments

Pearson correlation coefficients (see Table 3) showed that sex (woman = 0, man = 1) and gender identification had low but statistically significant correlations with SDO. These coefficients were not statistically significant from each other. The positive correlation between sex and SDO means that men ($M = 2.02$) had higher scores on SDO than women ($M = 1.63$), and this correlation ($r = .32$) was significantly ($p = .02$) higher than that ($r = .12$) in Study 4. The positive correlation between SDO and gender identification ($r = .35$) means that the higher the identification with men the higher was the score on SDO. Finally, the correlation between sex and gender identification was high ($r = .80$) and not comparable to the low correlations obtained for masculinity and femininity in Study 4.

We followed the Baron and Kenny (1986) steps in a mediation analysis. The results above showed that sex was correlated with SDO (the total effect) and that gender identification as a potential mediator was correlated with SDO as well. Partial regression analysis controlling for sex showed that gender identification displayed a significant partial regression coefficient using SDO as the outcome variable. The direct effect of sex on SDO was calcu-

lated by subtracting the indirect effect through gender identification from the total effect. This is displayed in Figure 3, where we to ease interpretation present the standardized regression and partial regression (within parentheses) coefficients.

Table 3

Means and Pearson Correlation Coefficients for the Relations among the Main Variables in Study 5 (N = 182) and Cronbach Alpha Reliabilities in the Main Diagonal

Variable	M (SD)	Correlations		
		1	2	3
1. Social Dominance Orientation (SDO)	1.81 (0.61)	.84		
2. Sex (woman = 0, man = 1)	0.46 (0.50)	.32	1.0	
3. Gender Identification	4.96 (2.20)	.35	.80	.92

Note. All coefficients are significant at $p < .01$, at least. Gender identification scale scores vary between 0 and 10, with higher scores indicating identification with men.

Applying the Sobel test (on the unstandardized coefficients) for the mediating effect showed that this indirect effect was statistically significant ($p = .02$). However, the direct effect of sex on SDO was non-significant ($p = .28$; see Figure 3). This means that there is a situation of complete mediation where gender identification mediates the total effect of sex on SDO. In other words, there is only an indirect effect of sex, through gender identification, on SDO.

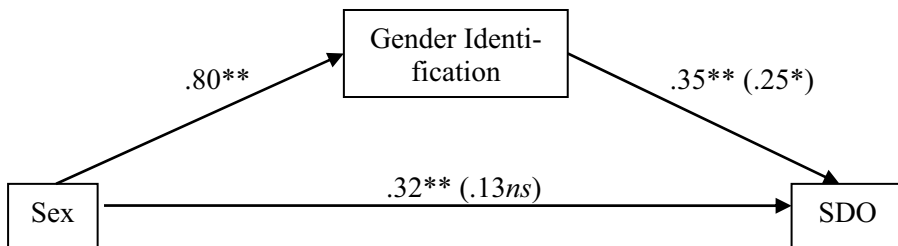


Figure 3. Causal model of sex (woman = 0, man = 1), gender identification, and SDO showing standardized regression and partial regression (within parentheses) coefficients ($*p < .05$, $**p < .01$).

To test for a moderation effect, we followed the procedure in Study 4. In a hierarchical regression analysis with SDO as dependent variable, we entered sex and gender identification in step 1 and 2, respectively, and the product of sex and gender identification (the interaction component) in step 3. The result showed that the interaction effect was non-significant ($p = .35$). Thus, there was no support for a moderating effect of gender identification on SDO. The lack of a moderating effect is in line with Study 4 and the invariance hypothesis (Sidanius & Pratto, 1999). What is not in line with the theory behind the hypothesis is that the explanatory basis for the gender difference is social.

In both Study 4 and 5, gender identification mediated the effect of sex on SDO. This mediation was partial in Study 4 and complete in Study 5. The influence of gender identification on SDO was significant, which is in line with Foels and Pappas (2004) and Dambrun et al. (2004). As sex and gender identification did not show any interaction effect, the results are also in line with the invariance hypothesis.

General Discussion

Major findings

Wherever there is a social hierarchy there is a risk that social discrimination may occur. In this thesis I have explored the tendency to ethnic ranking and forming ethnic hierarchies related to SDO and ethnic prejudice. The results showed that SDO was related to this tendency. I also examined the tendency to discrimination. The tendency to unfairly punish a subordinated ethnic group was higher in participants who also had high scores on SDO. SDO and its relation with sex and gender identification were further examined and the conclusion could be drawn that the male gender role is essential for the sex differences in SDO. Taken together, the studies underline the importance of SDO in social hierarchies and the discrimination that may occur within them.

The main finding of Study 1 (Paper I) concerned the generality of the previous research on ethnic hierarchies. The results showed that people tend to form ethnic hierarchies with the primary group ranked first also in a Swedish context. The hierarchy found in Study 1 is in line with earlier findings. A common pattern in ethnic ranking seems to be that North Europeans are ranked at the top, followed by East and South Europeans, whereas African and Middle-East groups are found at the bottom of the hierarchy (e.g., Hagendoorn, 1993; Hagendoorn et al., 1998; Hraba et al., 1989). Similar patterns have, for example, been found in Sidanius and Pratto's (1999) work on social dominance in the USA.

People's formations of ethnic hierarchies seem to be more or less the same regardless of their gender and ethnic origin. A consensus about ethnic hierarchies was not explicitly tested on participants with the same ethnical background as the target groups. In Study 1, however, both the immigrant and the Swedish participants shared the perception of differing social distances towards the different target groups. There was also a consensus between male and female participants and they had similar results in scores on the prejudice scales. Ethnic prejudice often shows differences in magnitude between men and women but this does not seem to affect the ranking order in the ethnic hierarchy (Hagendoorn et al., 1998; Hraba et al., 1989).

There are individual differences in the inclination to form ethnic hierarchies, and a method to measure these differences was proposed and tested. The method worked out well and can be used in further research. The differences in people's inclination to form ethnic hierarchies are meaningfully related to their ethnic prejudice and social dominance orientation. This is of interest when trying to understand the components of ethnic prejudice in local settings.

The major finding of Study 2 (Paper II) is in the method. Weiner's model showed to work also when the target varied in ethnic group membership. The participants reacted on the high/low responsibility manipulation in line with Weiner's (1980, 2001) findings of a harsher treatment to targets attributed with a high personal responsibility. This makes Weiner's model a good base for measures of discriminatory behaviours. This method also gives information about the cognitive process behind eventual discriminatory behaviour. The results of this study showed no sign of ethnic discrimination. On the other hand, SDO had a negative effect on help behaviour (the higher the SDO, the less help) but not on attribution behaviour. SDO affected help and perceived responsibility in the same way for both high- and low-status ethnic groups. The socioeconomic distance between the participants and the target might have been so large that the status difference in ethnicity did not matter. Help behaviours are probably correlated with empathy and SDO has shown a negative correlation with empathy (Bäckström & Björklund, 2007).

In Study 3 (Paper II), the results showed signs of ethnic discrimination and further it showed that this was connected to participants who scored high on the SDO scale. This shows that there is a tendency to discrimination of subordinated ethnic groups also by people outside the justice system. It is not just a result of an aggregate situation or disparity of the crimes. An effect of target gender was also shown in this study. Thus, women were seen as less responsible for their social transgression and the participants recommended less punishment compared to men of both ethnic groups. This is in line with the theory of benevolent sexism (Glick & Fiske, 2001). A methodological finding was that issues like hierarchy-based discrimination are possible to test quantitatively with crossed social categories, like gender and ethnicity.

Study 4 (Paper III) showed three things: a small sex difference in SDO, a mediation effect of gender identification, and a lack of moderation effect from gender identification. It was obvious that a major part of the sex difference could be explained by male or female gender identification and a lesser part by the actual sex difference.

In Study 5 (Paper III), the findings were slightly different than those in Study 4. This is probably a result of the gender identification measure employed. The gender identification scale used in Study 5 was bipolar, unlike the BSRI scale in Study 4. Thus, masculinity and femininity were not measured as separate entities but were instead placed on opposite ends of the

scale. The sex difference in SDO was larger than in Study 4. In spite of what might be expected from this larger difference, the mediation of gender identification was complete – there was no direct effect of sex on SDO.

In other words, the results of Study 5 show that without being mediated by the social variable of gender identification the impact of biological sex would probably not show on SDO. The moderation test showed the same result as in Study 4, a lack of moderation of SDO by gender identification. This lack of moderation of gender identification on SDO is interesting as it is congruent with the result in Study 4 and the notions of SDT (Sidanius & Pratto, 1999). These results are hard to interpret using the standard explanations (either nature or nurture) that still are typical in research concerning sex and gender. The results do not impose a dismissal of either the biological or the social explanations although the high impact of biology proposed by Sidanius and Pratto (1999) has to be questioned. Male gender identification is positively correlated with higher SDO in both men and women. This might give reason for different conclusions when it is compared with basic personality variables that have shown effects on SDO (Akrami & Ekehammar, 2006).

Issues related to the studies

Culture

When studying social psychological behaviour the variable of local culture is seldom measured but always present. According to research made for the world value survey (Inglehart & Welzel, 2005), Sweden is on the brink of being a statistical outlier in some of the central aspects of individual and cultural values. These differences are shown as low commitment to religious and traditional values, as well as high interpersonal trust and individuality. This makes Sweden quite different, not just from the world as a whole, but also from the rest of the western world. Sweden is also often described as a country with no major interethnic conflicts, and it was ranked second from the top as immigrant friendly in the migration policy group's comparison of integration and immigrant inclusion policy of the EU 15 countries (2005). In spite of this, ongoing discrimination has been reported from public areas, like the health care (Ahlberg & Krantz, 2006) as well as the juridical (Kardell, 2006; Pettersson, 2006) and educational system (Sawyer & Kamali, 2006).

When the present findings of prejudice and discrimination in Sweden are highlighted against this background of cultural exceptionality they might be easier to understand. Then, it is at least partly explained why ethnic discrimination and ethnic prejudice are not present to the same extent in every situation.

In Study 1 (Paper I), the results show that in this local context, the tendency to build hierarchies and ethnic prejudice were highly correlated, and this is not the case in previous European studies on ethnic hierarchies (Hagendoorn et al., 1998). In line with the results of, for example, Hraba et al. (1989), the groups ranked lowest were those who are stereotyped with a higher religiosity and traditionalism than the groups higher up on the ranking scale. It is likely that ethnic prejudice from the Swedish primary group is higher toward groups that differ from the Swedish culture in these central areas. As a result a correlation appears between ethnic prejudice and the inclination to ethnic ranking.

In Study 2 and 3, the behavioural tendency to discriminate was shown in punishment situations but not in help situations. This could be connected to the culturally high individual trust. In a situation where someone needs help this tendency is not challenged in the same way as it is in a situation where someone has committed a social transgression. The discrimination of the subordinated ethnic group in Study 3 may have been influenced by this.

Social change

Research on ethnic hierarchies shows that they do not have to be fixed – they may change over time (Hagendoorn, 1993). Therefore, an ethnic hierarchy can also be a sign of a positive development, at least for some groups in a multiethnic society, because ethnic groups have the possibility to climb from their initially low positions. The findings in the research on ethnic hierarchies also show that a group may get a higher status when it starts to become more like the society's primary group (Hagendoorn, 1993). An already established group can appear to be more like the primary group in comparison to other newer and more culturally different groups (Hagendoorn, 1993).

When different groups start to share a common in-group identity, their boundaries between each other are weakened (Gaertner et al., 2000). In the case of the groups placed higher up in the ethnic hierarchy of Study 1, the common in-group identity may be based on the experience of a common local history with the Swedish group from the 1950 to 1980 industrial era. As found by Gaertner et al. (2000), it is possible to weaken the in-group identification by widening the borders of the in-group. According to social identity theory, group identities can be created and produce self enhancing effects with very small means (Tajfel, 1981; Turner, Brown, & Tajfel, 1979). The local ethnic hierarchy in Study 1 might have a temporary aspect in its nature and at least a few of the groups involved might change their status and be parts of a more inclusive group.

Discrimination as an obstacle for integration

A movement toward a more inclusive in-group can be affected by discrimination. Discrimination seems to be one of the factors that maintain inter-group hostility. This in turn can keep subordinated groups outside society for

generations, like in the case of the Roma (Lindgren & Cronsell, 2003). The workforce immigrants from the period after World War II do not report discrimination to the same degree as other ethnic minority groups (Lange, 2000, pp. 127-129).

The influence of SDO on discrimination

Discrimination is hard to prove and untangle from aggregate situations. The studies of discrimination were therefore performed on participants outside the areas where systematic discrimination may take place. Just like studies of other social or cognitive phenomena, the tendency to discriminate is probably present in any sample of participants. Study 2 showed no significant results of ethnic discrimination, and hopefully this is an at least partly correct description of the world outside the experiment. On the other hand, it showed that a high SDO is correlated with less help.

In Study 3, the tendency to punish was higher when the targets were immigrants and this tendency was observable in those participants who were high on SDO. This finding may help understand the background for ethnic discrimination in the legal system.

Individual differences in SDO may explain why research on ethnic discrimination sometimes show ambiguous results (Graham & Lowery, 2004; Weitzer, 1996), just as they have explained ambiguous results in immigrant policies (Pratto & Lemieux, 2001). In a study on discrimination of mock jurors by Kemmelmeier (2005), a similar reasoning was made. It was suggested that racial biases from white jurors only show in those participants who also are high in SDO. In Study 3, discrimination was shown by participants high in SDO but not by participants low in SDO. In the discussions and research on prejudice and discrimination, SDO and the effects of it have to be put into more focus.

The benevolent sexist tendency in Study 3, where women were given less punishment than men was not related to SDO. A conclusion of this is that benevolent sexism has a partly different background than hostile sexism. Attitudes supporting traditional gender roles have earlier been shown to correlate with SDO (Bates & Heaven, 2001). This difference between ethnic and gender discrimination, where the first one is correlated with SDO and the latter one is not, calls for further research to be fully understood. One factor that seems to be important is the difference between the stereotypes we have for men and women (Bates & Heaven, 2001; Bussey & Bandura, 1999, Cooper-Thomson, 2000; Glick & Fiske, 2001), and the stereotypes we have for different ethnic groups (Akrami, et al., 2000, Sidanius & Pratto, 1999). Women are, for example, often stereotyped as pleasant and friendly independently of which ethnic group they belong to, whereas men from subordinated ethnic groups often are stereotyped to be criminal and antagonistic (Taylor, Peplau, & Sears, 2000).

Sex and SDO – an ongoing debate

Study 4 and 5 were done to further explore SDO. Ethnic and socioeconomic hierarchies are according to SDT arbitrary, based on local social beliefs, whereas gender and age hierarchies are biological (Sidanius & Pratto, 1999). Although the theory leaves room for a social impact on the gender hierarchy, the sex difference in SDO is referred to as a result of biological sex differences (Sidanius & Pratto, 1999).

The variable of gender identification has not until recently been tested together with SDO (Foels & Pappas, 2004; Lippa & Arad, 1999; Wilson & Liu, 2003a). The invariance hypothesis states that –everything else being equal– men should significantly exceed women in SDO scores (Sidanius & Pratto, 1999, p. 268). This expectation is basically right – very few findings of neutral or contradictory results have been found (Wilson, & Liu, 2003b). In the stronger versions of the invariance hypothesis it is expected that the sex difference in SDO scores cannot be moderated by social variables, but there have been doubts about the correctness of this expectation (Eagly et al., 2004; Wilson & Liu, 2003a). Social variables, like type of job or education, have not been found to influence the sex difference (Sidanius & Pratto 1999; Sidanius, Sinclair, & Pratto, 2006). The results of Study 4 and 5 showed no moderation effect, which is in line with previous studies, but the mediation results do on the other hand raise new questions about the mechanisms behind the sex difference in SDO, as well as sex differences found in related topics, like ethnic prejudice.

The gender hierarchy is different in many aspects from the socioeconomic and ethnic hierarchies. One of these differences lies in motivation: why we accept hierarchical social roles, and why we identify with them. Living up to the stereotypes about one's gender is a desired and rewarded behaviour in most cultures, but living up to the stereotypes of one's ethnic and socioeconomic group membership can sometimes be a social handicap. This question of motivation is not considered in SDT. Therefore, further tests of gender identification and SDO can be of interest.

Methodological issues

In Study 1, the questionnaire had the same question repeated for each ethnic target group which made it quite boring to fill in. The target groups were chosen with a contemporary and local perspective which will make replications from other parts of Sweden difficult if not local perspectives are taken into account.

Study 2 and 3 were among the first tests of SDO as a factor behind discrimination using a between-groups design. To the best of my knowledge there has only been one previous study using a similar design (Kimmelmeier,

2005). The reason for using a between-groups design in Study 2 and 3 was that some experiments on ethnic biases have failed due to design issues. Mitchell, Haw, and Pfeifer (2005) found in a meta-analytic review of defendant treatment that when ethnic issues were salient, white participants in a mock jury avoided to expressing ethnic biases. The difficulty with between-groups designs is that the participants are divided into a number of different subgroups, which calls for a higher number of participants in order to make the analysis powerful.

Further research

Ethnic hierarchies are a result of cultural and status differences (Hagendoorn, 1993). In the case of Study 1, the results showed a larger social distance towards groups with a large cultural gap to the Swedes. Ethnic prejudice in Sweden is not politically correct but the result of Study 1 indicates that ethnocentrism (a tendency to believe in the superiority of one's own culture) is. To further develop this reasoning one would have to examine ethnocentrism and its eventual links to discrimination.

One interesting aspect of ethnic hierarchies is how they change. At least a few of the groups involved can change their position and move closer to the society's primary group. There is need for a wider examination of the societal factors that may help such a development and stop the hierarchies from being cemented into the society structure.

Discrimination is enhanced or diminished by multiple group membership of the target. Research methods to examine more than one group membership in social hierarchies should be further developed.

An important topic for further research is the impact of SDO on discrimination and other displays of intergroup hostility. The relationship between SDO and discrimination is an important finding both practically and theoretically. The practical importance is because discrimination might maintain group hostility (Lange, 2000). The theoretical importance lies in the explanatory field, because the findings can help explain why ethnic prejudice sometimes leads to ethnic discrimination and sometimes not. SDO is also a personality variable (Ekehammar et al., 2004) so SDO is linked both to discrimination and personality.

Study 4 and 5 in combination teach us that using gender identification measures in research on social attitudes and group issues enhances the possibility to correctly explain sex differences, especially if the aspects of mediation and moderation are considered. The choice of scale for gender identification measure is however important, and should be based on the attempt of the research. Further research should also compare, validate and develop differ-

ent ethnic identification scales that can match and be used together with the gender identification scales.

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