

Social categorization on the basis of multiple group-memberships: The case of male superiors and female subordinates

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Running head: Multiple social categorization

9.283 words

The reported research was supported by grants from the Deutsche Forschungsgemeinschaft (Pi 121/9-1). We are grateful to Susanne Freitag, Ellen Gardziella and Markus Heckelmann for their assistance.

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ABSTRACT

The present article addresses the question under which circumstances two social group-memberships are combined as a basis for social categorization. Following the functional approach to social category salience by Oakes (1987), the salience of combined categories was expected to depend on the degree of perceived fit of the two group-memberships to a shared pool of stereotypic dimensions (a so-called pattern of multiple fit). In a crossed categorization design, stimulus persons were characterized by gender (male vs. female) and authority position (superior vs. subordinate) and we studied the influence of multiple fit on the preference of particular category combinations (conjunctive categories: male superiors and female subordinates) over alternative category combinations (non-conjunctive categories: female superiors and male subordinates). In the present study, the degree of multiple fit was manipulated (low vs. high) and participants subsequently categorized members of conjunctive categories more strongly than those of non-conjunctive categories only when multiple fit was high, but not when a low level of multiple fit was given. In sum, results supported the notion that the use of multiple group-memberships as a categorization unit is less a matter of automaticity, but a function of the specific pattern of perceived category fit.

Key words: social categorization, category salience, crossed categorizations, multiple group-membership, category fit

RESUMÉ

Cet article s'interroge sur les circonstances dans lesquelles deux appartenances groupales se combinent pour fonder la catégorisation sociale. Selon l'approche fonctionnelle basée sur la saillance des catégories sociales proposée par Oakes (1987), la saillance des catégories combinées pourrait dépendre du degré d'adéquation perçu entre les deux appartenances groupales et les dimensions stéréotypiques partagées (i.e. un pattern d'adéquation multiple). Dans une procédure de catégorisation croisée, des personnes cibles étaient caractérisées en fonction de leur sexe (masculin vs. féminin) et de leur position d'autorité (supérieure vs. subordonnée) et l'influence d'adéquation multiple sur la préférence pour certaines combinaisons catégorielles (catégories conjonctives : supérieurs masculins et subordonnées féminines) plutôt que sur des combinaisons alternatives (catégories non-conjonctives : supérieures féminines et subordonnés masculins) était examinée. Le degré d'adéquation multiple (faible vs. élevé) était manipulé dans l'expérience présente : dans ce cas, les participants catégorisaient effectivement les membres appartenant à des catégories conjonctives plus fortement que ceux appartenant à des catégories non-conjonctives, mais dans la condition où l'adéquation multiple était élevée seulement, comparé à la condition d'adéquation faible. Finalement, ces résultats soutiennent l'idée que l'utilisation des appartenances groupales multiples, comme unité de catégorisation, serait moins une affaire d'automatisme qu'une fonction du pattern spécifique de l'adéquation perçue des catégories.

Mots-clés: catégorisation sociale, saillance des catégories, catégories croisées, appartenances groupales multiples, adéquation des catégories

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INTRODUCTION

Women are still underrepresented in executive positions in Germany. In the year 2004, 47% of all persons in dependent employment were woman, but only 33% of all executives. In the group of top executives (e.g. directors and managing directors), women accounted for only 21% (Statistisches Bundesamt, 2005). This fact may be viewed as a societal consequence of self-verifying processes of gender stereotyping (Rudman & Kilianski, 2000): to the extent that men are associated predominantly with agentic attributes (like independent, individualistic) and women more with communal attributes (e.g., interdependent, supportive), men are often expected to be more influential leaders than women (De Gilder & Wilke, 1994).

In the present paper we would like to suggest another perspective on this topic. Being in a high or a low status occupation provides a basis for social categorization in its own right. Like gender categories, superior and subordinate occupational categories are also attached with stereotypic attributes (Berger & Zelditch, 1993): while high authority persons are associated, for example, with high expertise and management competence, low authority people are typically described as being assistant and less competent in leadership. Seen from this perspective, gender and authority can be viewed as a case of so-called crossed categorizations (Deschamps, 1977; Deschamps & Doise, 1978; Vanbeselaere, 1987, 1991). When gender and occupational status are crossed with each other, four different subcategories result: male superiors, female superiors, male subordinates and female subordinates. A peculiarity of such a situation with crossed categorizations is that persons are characterized not only by one, but simultaneously by two social group-

memberships. Such crossed situations appear thus more realistic than single categorization designs and touch societal problems and issues such as the effects of multicultural group compositions in schools and work places (cf. Urban & Miller, 1998). An important question that arises in such a crossed situation is the following: which of the four subcategories become most meaningful or salient to the perceiver? Or with other words: which of two group-memberships are more likely associated with each other and which are less likely associated?

In principle, the chance to link the superiors' category with the women category should be as high as the likelihood to link the superiors' category with the men category. Accordingly, the subordinates' category can theoretically get associated as likely with the men category as with the women category. Why then do perceivers tend more to cluster the high authority category with the group of males and the low authority category with the group of females? To provide a conceptual answer to this issue we would like to refer to the meaning-based theory of social category salience by Oakes (1987). Based on work by Tajfel (1978; Social Identity Theory) and Turner (1985; Self-Categorization Theory), a social category is salient when people are perceived less as unique individuals and more as members of a certain social group. The salience of a social group-membership implies a shift of perception and behaviour from the interpersonal (individual) level to the intergroup (collective) level (see also Tajfel & Turner, 1979, 1986; Turner, Hogg, Oakes, Reicher & Wetherell, 1987). The theory of Oakes, which traces back to the accessibility x fit hypothesis of Bruner (1957), expects category salience to be a function of the cognitive accessibility of a social category and its fit to the situation. In particular, the theory distinguishes between two types of category fit. First, comparative fit refers to a given (or perceived) correlation between social group-memberships of people on the one hand and arbitrary (i.e., non-stereotypic) features of these persons on the other. For example, in a

classroom where all male pupils are sitting on the left side and all female pupils on the right, a strong comparative fit of the gender categorization is given. Second, normative fit maps the (given or perceived) link between stereotypic characteristics of people (or the social context they are in) with their social group-memberships. When, for instance, male pupils of a class prefer courses in natural sciences and female pupils social sciences, a strong normative fit of the gender categorization is given (while counter-normative fit would refer to a reversed and thus stereotype-inconsistent pattern of covariation). In a large array of studies, the impact of comparative and normative fit on social category salience has been demonstrated experimentally (e.g., Oakes, Turner & Haslam, 1991; Simon, Hastedt & Aufderheide, 1997).

However, up to now investigations of the fit-based approach have been limited to two questions. First, the conditions were studied under which people are perceived as category members rather than as unique individuals (see Hewstone, Hantzi & Johnston, 1991; Linville, 1982). Second, research focused on the conditions where one group-membership dominates another in perception (e.g., Arcuri, 1982; van Twuyver & van Knippenberg, 1995). In the following, we would like to propose an extended version of the fit-based approach to social category salience. The new model is directed to the issue under which circumstances not only one, but two (or even more) category memberships will become simultaneously salient in person perception. In particular, our extended theory tries to explain the concurrent use of more than one group-membership when categorizing persons in a crossed categorization design.

A fit-based approach to multiple categorization

We expect such a concurrent use of multiple group-memberships when both classifications of a crossed design fit to a shared pool of features. This is given, for example,

when gender and authority are perceived to be correlated to the same dimension(s). Such a common dimension could be, for instance, the perceived competence of the group-members: when men are perceived (stereotypically) to be more competent than women and superiors to be more competent than subordinates, a pattern of multiple fit is given. The consequence of this constellation would be that two category combinations, namely ,male superiors‘ (perceived as most competent) and ,female subordinates‘ (perceived as least competent), will appear most meaningful (in a subjective sense) and salient to the perceivers. On the other hand, the two remaining category combinations, ,female superiors‘ and ,male subordinates‘ in our case, should become not strongly salient since they stress contradictory aspects of the related dimension (e.g., women are perceived as less competent, but superiors are expected as highly competent etc.). Further examples for the simultaneous use of multiple group-memberships were given in the studies by Stangor, Lynch, Duan and Glass (1992) who crossed gender with race and by van Twuyver and van Knippenberg (1998) who crossed gender with academic status.

To summarize, when multiple fit (in a comparative or a normative sense) of two categorizations is given or perceived, two out of four possible category combinations in a crossed design will become salient. Social categorization that uses two combined social group-memberships based on a pattern of multiple fit will be called conjunctive categorization in the following. Conjunctive categorization implies two psychological processes: first, two (or more) social group-memberships are associated with each other so that new (multiple) social categories will emerge (e.g., the men category and the superiors category become the new category of male superiors), and second, two (or more) salient category combinations will be perceptually contrasted from each other (e.g., male superiors versus female subordinates). Conjunctive categorization deviates from other forms of multiple categorization, for example the hierarchical categorization (Brewer, Ho, Lee & Miller, 1987): while the latter emphasizes

two adjacent cells of a crossed design (e.g., male versus female superiors), the former stresses two diagonal cells (e.g., male superiors versus female subordinates).

The proposed fit-based approach views social categorization as a functional process. This implies that multiple group-memberships are not expected to be associated with each other automatically (or at random) but on the basis of a pattern of perceived multiple fit. Thus persons' tendency to associate the high authority category with the males' category and the low authority category with the females category should be based on their perception that gender and authority would correlate with the same stereotypic dimensions (for example with attached competence). This assumption was tested in two studies, in which we assessed the conjunctive categorization based on gender and authority (in the sense of high authority/men and low authority/women associations) and examined participants' tendency to perceive a pattern of multiple fit (i.e., descriptions of gender and authority by shared attributes) (Blanz, Piontkowski, Florack & Rohmann, 2001; Piontkowski, Blanz, Rohmann, Schermund & Florack, 2001). Furthermore, we hypothesize that the conjunctive categorization based on gender and authority will vary according to different levels of normative fit. Thus, in the present study, the degree of normative fit was manipulated (low versus high) and the clustering of superiors/men categories and subordinates/women categories was expected to be weak in the low fit condition and strong in the high fit condition.

First empirical evidence for conjunctive categorization

In a recent study, Rudman and Kilianski (2000) crossed gender with authority by using a modified version of the implicit association test (IAT; Greenwald, McGhee & Schwartz, 1998). In some original studies of the IAT, social groups (e.g., two ethnic groups) were crossed with an evaluative dimension (pleasant versus unpleasant), and smaller latencies in response to a certain combination (e.g., Germans and pleasant) as

compared to an alternative combination (e.g., Turks and pleasant) were interpreted as an indicator for implicit ethnocentric attitudes (see Greenwald & Banaji, 1995; Neumann, Ebert, Gabel, Gülsdorff, Krannich, Lauterbach & Wiedl, 1998). In their experiment however, Rudman and Kilianski (2000) crossed gender not with an evaluative dimension, but with words related to low (e.g., secretary, helper) versus high occupational roles (e.g., boss, leader). The focus of this research was thus less on group evaluations, but more on the compatibility and incompatibility of two categories in content. As expected the results showed shorter latencies for male/high authority and female/low authority combinations than for the alternative combinations. This effect, however, was statistically significant for male participants only, but not for female participants.

Two replications of the Rudman and Kilianski (2000) study have been published, one of them concerned male participants exclusively (Piontkowski et al., 2001) and the other female participants only (Blanz et al., 2001). In these studies we crossed gender with authority, and no explicit dimension was highlighted through the procedure, but it was expected that participants would nevertheless perceive (or create) a pattern of multiple fit on the basis of stored stereotypic features commonly associated with the crossed categories.

Specifically, we crossed male and female first names with words that were typical for superiors and subordinates, respectively, and recorded the response latencies for the four category combinations. Following this, the perceived multiple fit of both categories was assessed. The perceived similarity in the descriptions of men and superiors (and women and subordinates, respectively) was measured by using semantic differential scales (Osgood, Suci & Tannenbaum, 1957). It could be shown that participants responded faster to conjunctive than to non-conjunctive categories and described a pattern of multiple fit for conjunctive but not for non-conjunctive categories. The results of the semantic differential

support our expectation that the conjunctive categorization based on gender and authority is accompanied by the perception of a shared pool of stereotypic dimensions that is related to both categories. Specifically, participants perceived conjunctive categories to be more similar than non-conjunctive categories.

Seen from the perspective of our fit-based approach, these results indicate a conjunctive categorization based on gender and authority with male/high authority and female/low authority being the most salient multiple group-memberships.

In line with former research by Rudman and Kilianski (2000), our male perceivers associated the superiors' category significantly more with men than with women and the subordinates' category more with women than with men. In contrast to the study by Rudman and Kilianski (2000), however, this effect was also given for our female participants. This underlines that the effects can not be attributed to a strategy of ingroup favouritism since our female participants did also tend to associate their ingroup with the lower status occupational position. Thus, it appears that the conjunctive categorization based on gender and authority is present for female like for male perceivers.

Thus, we may conclude that there is evidence for the expected co-occurrence of conjunctive categorization on the one hand and perception of multiple fit on the other hand. The research summarized so far can be interpreted in line with our proposed extension of the fit-based approach to the salience of crossed categories. However, to perform a complete test of our central assumption – which postulates multiple fit as a predictor of conjunctive categorization – it seems necessary to demonstrate that conjunctive categorization varies systematically according to contextual manipulations of perceived category fit. Therefore, it has to be shown that conjunctive categorization, like any kind of social categorization, depends functionally on the degree of fit of categories that is perceived in a specific situation. This is the aim of the present study.

THE PRESENT STUDY

As long as situational fit is not specified, the extended fit-based approach to crossed categorizations explains chronic associations of social categories by a perceiver-generated process (i.e., through emphasizing common stereotypic dimensions). As soon as the situation provides information about the degree of category fit (e.g., when opinions or behaviours of group-members are specified), however, the salience of conjunctive categories - like any categories - is expected to vary systematically with the perception of multiple fit. To test this hypothesis, in the present study group-members expressed opinions towards an issue related normatively to both categories, gender and authority (see Pretests). While in one condition, group-members' attitudes were in line with stereotypic expectations (high normative fit), they did not fit well in the other (low normative fit). It was hypothesized that conjunctive categorization based on men/superiors and women/subordinates should prevail in the condition with high normative fit (where a stereotype-consistent pattern of multiple fit was presented), while it should be weak or absent in the condition with low normative fit. As dependent measures, the present study used two methods, which have been already applied in former research. First, participants worked on the category confusion paradigm (or Who-said-what?-paradigm; Taylor, Fiske, Etcoff & Ruderman, 1978), which consists of a learning phase (where participants are faced with behaviors or expressed attitudes of a pool of group-members) and a following assignment phase (where participants have to allocate specific attitudes to one of the group-members). Specifically, in the category confusion paradigm we expected more within- than between category confusions (assignment errors) for conjunctive category combinations (men/superiors and women/subordinates) as compared to non-conjunctive category combinations (men/subordinates and women/superiors) when normative fit is

high, whereas intra-category confusions should not exceed inter-category confusions for all category combinations when normative fit is low. Second, subsequent to the Who-said-what?-paradigm participants worked on the category attribution task (see Oakes et al., 1991) which assesses the degree to which participants explain attitudes of group-members either by their individual personality or their social group-memberships (cf. also Blanz & Aufderheide, 1999).

With respect to category attributions we expected that perceivers attribute the behavior of male superiors and female subordinates more to their multiple group-memberships (and less to their individual personality) when normative fit is high as compared to the condition where normative fit is low.

PRETESTS

To manipulate different degrees of normative fit, statements that relate to a stereotype-relevant discussion topic had to be selected (see van Knippenberg, van Twuyver & Pepels, 1994). With the intention that the discussion issue should relate simultaneously to both categories (gender and authority), we used the following question: “In your opinion, which personal qualities are favourable at the working place?” Subsequently, statements with either high or low normative content were selected in three pretests (mostly students of Psychology or Educational Science, with a balanced sex distribution and a mean age of 24 years). In Pretest 1, fourteen participants rated whether 22 a-priori statements are more typical for women or for men (first question; the scale ranged from (1) women to (9) men) and more typical for subordinates or for superiors (second question; the scale ranged from (1) subordinates to (9) superiors). The mid-point of the response scales indicated a neither-nor position (5). Data analysis tested significant deviations of means from the scale mid-point (two-tailed *t*-tests). This way, we selected statements rated typical for men and

superiors, typical for women and subordinates, and statements, which were neutral with respect to both categories. In this analysis, no statement was rated as being typical for women and superiors and for men und subordinates, respectively. Following this, the selected statements and some additional ones were presented again to a new sample of subjects. In Pretest 2, twenty-nine students rated a total of 71 statements. We found 21 statements rated typical for men and superiors, 13 rated typical for women and subordinates, and 8 statements rated neutral for both categories.¹ Based on these results, we selected for the present study eight men/superiors items (e.g., “One has to be able to distinguish important from unimportant things.”), eight women/subordinates items (e.g., “One should feel well oneself at work.”), and eight neutral items (e.g., “At work succeeds who exercises a minimum of patience.”), with some of them being cross-validated over the two pretests (for a similar procedure, see Oakes et al., 1991).

Interestingly, none of the statements of both pretests was seen to be related simultaneously to women and superiors or to men and subordinates. To assure that this result did not simply reflect researchers’ prejudices when creating the statements, participants of Pretest 2 were also asked to formulate statements of their own that are typical for female superiors and for male subordinates (two questions). After disqualifying unserious statements as well as statements which were redundant to the presented ones, this led to 10 items assumed to be typical for female superiors (e.g., "To make career, one has to surrender many things.") and 2 typical for male subordinates (e.g., "One should handle challenges in a constructive way."). Subsequently, in Pretest 3 we tested these 12 statements with a new sample of eighteen students and found that none of them was perceived to be associated simultaneously with both categories. Rather, most of them were estimated as being related to one category but not to the other. This way, the pretest results already underline our central assumption that people perceive an association between

gender and authority stereotypes only in that way that renders male superiors and female subordinates to the subjectively most meaningful category combinations.

METHOD

Sample and design

One hundred and ten students (30% Psychology, the rest mixed) from the University of Münster (55 females, 54 males, one missing data) with a mean age of 25 years and a mean of 6 semesters participated in the present study.

The experimental design comprised a manipulation of two degrees of normative fit (in the sense of multiple fit) between-subjects. While in the first condition normative fit was low, the second condition implied high normative fit. This was realized by a variation of statements (opinions) expressed by group-members (see below). Two different kinds of dependent measures were assessed within-subjects. Participants worked first on the category confusion paradigm (Taylor et al., 1978) where the relation of within- versus between-category errors was analysed. Afterwards, a task which measured category attributions was administered: participants were asked to estimate the degree to which group-members' behaviour (opinions) can be attributed to their individual personality (first question) and their multiple group-membership (second question).

Procedure and measures

Participants viewed 16 target persons (presented at random order) with each being characterized by a first name (female or male) and an occupational position (superior or subordinate). Since we crossed gender and authority orthogonally, four subcategories emerged: four of the 16 targets were male superiors, four female superiors, four male subordinates and four female subordinates. Each target person expressed an individual

statement towards the discussion topic (see above). Normative fit was varied by the degree of covariation between group-memberships and attitude pattern (cf. Oakes et al., 1991; van Knippenberg et al., 1994; Blanz & Aufderheide, 1999). When fit was low, the correlation between categories and attitudes was zero. In this condition, two out of four members of each subcategory made statements typical for male superiors and two expressed statements typical for female subordinates. In the condition with high normative fit, a stereotype-consistent pattern of multiple fit of gender and authority was presented. Specifically, in this condition all four male superiors and all four female subordinates made statements typical for their respective sub-group, while the four female superiors and the four male subordinates expressed neutral statements.

Following the presentation of the target persons, participants had to decide ‘who said what’. Each of the 16 statements was presented again (in a random order), and participants assigned each statement to one of the 16 speakers. After completion of the category confusion paradigm, the attribution task was performed (cf. Oakes et al., 1991). For each of the four subcategories, two group-members (including their statements) were presented again (in a random order, but the two exemplars of each sub-category together), and participants rated the degree to which these opinions can be attributed to personal characteristics (“Because of his/her individual personality.”) and the sub-group membership (e.g., “Because he is a male subordinate.”) of the speakers (response scales of the two questions ranged from 1 – not at all to 7 – very much). In addition, as a manipulation check the perceived stereotype-relevance of the discussion topic with respect to the two crossed categories (gender and authority) was assessed (two questions): “In the general population the attitudes of women and men (superiors and subordinates, respectively) towards important personal features in the working life are...” with response

scales ranging from 1 – very different to 7 – very similar. Finally, the socio-demographic characteristics of the participants were asked for (age, sex, field of study, semester).

RESULTS

Stereotype-relevance

The two questions concerning stereotype-relevance were subjected to a social category (gender, authority) x normative fit (low, high) x sex of participant (male, female) ANOVA. A significant main effect of the factor social category ($F(1, 105) = 16.45, p < .001$) indicates more perceived differences between superiors and subordinates (2.96) than between men and women (3.63). Nevertheless, both means differ significantly ($ps < .01$, two-tailed t -tests) from the scale mid-point (4) indicating that for both categories more differences than similarities were perceived. In addition, a significant main effect of the factor normative fit ($F(1, 105) = 5.07, p < .05$) specifies stronger perceived differences in the high fit condition (3.01) than in the low fit condition (3.51). This latter effect can be interpreted as evidence for a successful manipulation of normative fit in the present study. The analysis revealed no further significant effects (i.e., there was no influence of sex of participants).

Category confusion

Sums of confusions were calculated with respect to gender error type (assignment confusions either within or between the gender category), authority error type (assignment confusions either within or between the authority category), gender of source (either male or female gender of the speaker which statement was assigned) and authority of source (either superior or subordinate position of the speaker which statement was allocated). In addition, sums of confusions were corrected for chance by multiplying between-category

confusions with 3/4 (for a similar procedure, see Stangor et al., 1992). Subsequently, an ANOVA with gender error type, authority error type, gender of source and authority of source as within-subjects factors and normative fit (low, high) as between-subjects factor was performed. This analysis showed significant main effects for gender error type ($F(1, 108) = 74.23, p < .001$) and authority error type ($F(1, 108) = 71.66, p < .001$), which were qualified by an also highly significant two-way interaction between both factors ($F(1, 108) = 62.44, p < .001$). This interaction depends on significantly (Scheffé-test with $ps < .05$) more confusions within both categories (4.61) than between categories (within gender/between authority: 1.96; between gender/within authority: 1.95; between gender/between authority: 1.84). Such a pattern error means is usually interpreted as evidence for the simultaneous use of both categories in the category confusion paradigm (cf. van Twuyver & van Knippenberg, 1998). In addition, the analysis revealed a variety of further significant interaction effects between some of the within-subjects factors and normative fit. The most interesting effect in this analysis, however, is the interaction effect between all four within-subjects factors and normative fit, which approached significance at the $p < .059$ level ($F(1, 108) = 3.64$).

To explore this latter interaction, effect sizes (partial η^2) for the two-way interaction between gender error type and authority error type were calculated separately for the conjunctive categories (male superiors and female subordinates) and the non-conjunctive categories (female superiors and male subordinates). This seemed appropriate since separate tests showed no significant difference between the two conjunctive categories on the one hand (tested were male superiors against female subordinates) and between the two non-conjunctive categories on the other hand (tested were female superiors against male subordinates). The scores of these effect sizes for the low and high normative fit conditions are displayed in Table 1. As one can see there, only small effect

sizes were found when normative fit was low and the effect sizes for conjunctive and non-conjunctive group-memberships in this condition do not differ significantly from each other. When normative fit was high, however, there is a significant difference in effect sizes between the conjunctive and the non-conjunctive categories. These results indicate that subtyping was more pronounced when high instead of low normative fit was given and that participants in the high normative fit condition subtyped more according to conjunctive than to non-conjunctive categories.

TABLE 1

To check for the impact of sex of participant (male, female), an additional ANOVA was run that included this variable as additional between-subjects factor. This analysis showed, however, that the effects reported above were not significantly moderated by sex of participant.

Category attribution

First, we calculated difference scores of sub-category attribution minus personal attribution (so that higher scores indicate increased attribution on sub-category membership relative to personality; for a similar procedure, see Blanz & Aufderheide, 1999) and then averaged the scores of the two exemplars of each sub-category. Subsequently, we performed an ANOVA, which included gender (male, female) and authority (superior, subordinate) as within-subjects factors and normative fit (low, high) and sex of participant (male, female) as between-subjects factors. In this analysis, the main effect of normative fit ($F(1, 104) = 9.80, p < .01$) indicates significant stronger category attribution in the condition with high normative fit (-1.58) than with low normative fit (-

2.44). In addition, the main effects of gender ($F(1, 104) = 7.43, p < .01$) and authority ($F(1, 104) = 10.56, p < .01$) were also significant, but qualified by a highly interaction effect between both factors ($F(1, 104) = 23.83, p < .001$). This two-way interaction was further modified by a significant three-way interaction between gender, authority and normative fit ($F(1, 104) = 20.41, p < .001$), which is of most interest here. This three-way interaction grounds on the fact that the gender x authority interaction is significant for high normative fit ($F(1, 52) = 28.84, p < .001$) but not for low normative fit ($F(1, 55) = 0.26, p = .61$). The means for the high normative fit condition are shown in Figure 1. As can be seen there, category attribution for conjunctive categories (male superiors: -0.54, female subordinates: -1.26) are significantly higher (Scheffé-test with $ps < .01$) than for non-conjunctive categories (female superiors: -2.21, male subordinates: -2.43).

FIGURE 1

In addition, the three-way interaction between gender, authority and normative fit was further modified by a marginally significant four-way interaction including sex of participant ($F(1, 104) = 3.67, p = .058$). This effect is due to the fact that the three-way interaction is more pronounced for female participants ($F(1, 53) = 19.03, p < .001$) than for male participants ($F(1, 51) = 3.75, p = .058$). Particularly in the condition with high normative fit, female participants showed a larger difference between conjunctive (-1.07) and non-conjunctive categories (-2.59) than male participants (conjunctive: -0.70, non-conjunctive: -1.88). On the other hand, the strongest sub-category attribution in the present study was shown by male participants for male superiors in the condition with high normative fit (-0.39).

DISCUSSION

The results concerning the stereotype-relevance of the discussion issue clearly underline that participants estimated the selected topic to be simultaneously related to both categories, gender and authority, which has been explicated as one of the preconditions for the perception of multiple fit (see above; cf. Blanz et al., 2001). In addition, data showed stronger stereotype-relevance when high instead of low normative fit was given. This result relates to a previous finding by Blanz and Aufderheide (1999) where the relevance of the discussion topic was perceived as significantly higher when normative fit rather than counter-normative fit was manipulated. Perceivers apparently show remarkable flexibility in their estimations of the situational relevance of dimensions to social stereotypes: as soon as group-members did not behave consistent to their expectations, they downgrade the relevance of a given dimension (see also Johnston, Hewstone, Pendry & Frankish, 1994).

The results of the category confusion paradigm (Taylor et al., 1978) showed more within-within than between-category errors for conjunctive category combinations relative to non-conjunctive ones when high normative fit (in its multiple version) was presented. Although this was expected by our fit-based approach to multiple categorization, the question remains what processes may underlie this effect. In the original version of the category confusion paradigm (Taylor et al., 1978), comparative or normative fit have not been manipulated and the ratio of within- versus between-category errors thus reflected a process of category discrimination. As demonstrated by Klauer and Wegener (1998) on the basis of a multinomial model, however, experimental variations of comparative and/or normative fit (usually through covariations of statements with group-memberships or stereotypes; cf. Blanz, 1997, 1999; Biernat & Vescio, 1993, 1994; van Knippenberg et al., 1994) lead perceivers to use response bias as a more likely strategy than category discrimination. Response bias means that perceivers simply use rules, based on a presented or stored pattern of either comparative or normative fit, to assign statements to group-

members. While Klauer and Wegener (1998) presented evidence for increased response bias for increasing degrees of comparative fit, there are meanwhile also contradictory findings (Mavor & Cullin, 2001). Nevertheless, the Klauer and Wegener approach let it appear unlikely that category discrimination is the factor most dominant in the present study. Rather, our participants probably used their stored stereotypic rules when assigning consistent statements predominantly to conjunctive categories (men/superiors and women/subordinates) in the condition with high normative fit. This way, the category confusion data in the present study reflects more a top-down (perceiver-generated) than a bottom-up (stimulus-generated) process. These considerations did not disqualify our theoretical model, however, since the confusion data supports our assumption that perceivers apply stereotypes to the extent that it appears meaningful to them (e.g., when normative fit is high).

The latter conclusion is also supported by the category attribution data. In the tradition of Oakes et al. (1991) we used personal and category attributions - which both represent internal attributions - as indicators of social category salience. In extension of Oakes' work, we did not assess attributions on simple categories but on multiple group-memberships. Although attribution data have not to match category confusion data in any case - e.g. when counter-normative fit is given, confusion data and attribution data may lead to diverging results (cf., Blanz & Aufderheide, 1999) – the present study revealed quite parallel effects on both dependent measures. In analogy to the confusion data, sub-category attributions varied systematically with the degree of normative fit: although participants generally preferred personal over social category attributions (a finding just described by Oakes et al., 1991), attributions on multiple group-memberships were particularly strong in the condition with a high degree of normative fit and for conjunctive (i.e., subjective most meaningful) categories, exclusively. This result supports our central

contention that more than one, at least two group-memberships can provide the basis for a meaningful categorization of people.

We started this paper with the proposition to interpret the inequality in the representation of men and women in high status occupations not primarily as a societal consequence of gender stereotyping, but as a consequence of stereotyping based on gender and authority. This view rests on a design with crossed classifications rather than on a single categorization. In contrast to former research, however, the research presented here did not focus on the consequences (or effects) of crossed categorizations (cf. studies on differentiation or discrimination between groups: Brown & Turner, 1979; Crisp & Hewstone, 1999; Deschamps & Doise, 1978; Diehl, 1989; Ensari & Miller, 2001; Vanbeselaere, 1987, 1991; see also recent meta-analyses on this topic: Migdal, Hewstone & Mullen, 1998; Miller, Urban & Vanman, 1998; Urban & Miller, 1998), but on the determinants (or prerequisites) of the salience of multiple group-memberships in person perception. For this purpose, we extended the fit-based approach to social category salience (see Oakes, 1987; Bruner, 1957) to the case of two orthogonally crossed social classifications (gender and authority), and we introduced the concepts of ‚multiple fit‘ and ‚conjunctive categorization‘ to explain the preference (or salience) of specific category combinations (i.e., male superiors and female subordinates) over alternative category combinations (female superiors and male subordinates). Specifically, we demonstrated the salience of such conjunctive categories to be less a matter of automaticity, but based on the perception of a pattern of multiple fit which relates both involved social categories to the same pool of stereotypic dimensions. It has been shown that perceivers construe such a pattern of multiple fit on the basis of existing stereotypes (Blanz et al., 2001; Piontkowski et al., 2001), while in the present study the normative aspect of multiple fit (i.e., its match to stored stereotypes) has been manipulated (low versus high normative fit). The results

showed conjunctive categorization to vary functionally according to different levels of perceived fit: in particular when normative fit was low, associations of high authority with men and low authority with women were completely absent.

Implications of the study

The results presented here have implications for the issues of stereotype application and stereotype protection. Prior studies imply that stereotype application (cf. van Knippenberg & Dijksterhuis, 2001) may not in any case be a matter of contextual cues, but can also operate as a widely internal process of meaning construction. If a situation leaves enough room open, people tend to categorize (and thus interpret) social stimuli according to their ideologies: this cannot only be shown for single categorizations based on highly accessible categories (cf. Taylor et al., 1978; Blanz, 1999; van Knippenberg et al., 1994), but also for a context with crossed categorizations (Blanz et al., 2001; Piontkowski et al., 2001; van Twuyver & van Knippenberg, 1998).

These conclusions are supported by the results of the pretests of the present study, where participants were not able to produce at least one single meaningful statement typical for female superiors (or male subordinates) that survived the cross-validating procedure. In line with the congruency assumption by Eagly (1987), perceivers probably saw the positions of female superiors (and male subordinates) to imply conflicting role expectations, which prevented them from producing meaningful statements for these two sub-groups. As further suggested by our results, this role incongruency rests on male perceivers' tendency to associate their male ingroup predominantly with the higher status occupational position as well as on female perceivers' tendency towards negative self-stereotyping (cf. Hogg & Turner, 1987). Apparently, women share men's stereotypes about gender and authority to a large degree, although our studies did also reveal some interesting differences. For example, female participants perceived less descriptive

distances between the two gender categories as well as between the two authority categories, what women let appear to be somewhat less prejudiced against members of these categories as compared to men (Blanz et al., 2001; Piontkowski et al., 2001).

With regard to stereotype protection, Hewstone and colleagues described various strategies of perceivers to cope with disconfirming exemplars of social groups or categories (for an overview, see Hewstone, 1994; cf. also Blanz & Aufderheide, 1999; Fyock & Stangor, 1994). One of these strategies is the tendency to downgrade the diagnosticity of a specific behaviour or situation, for which we found support in the present study: in the condition with low normative fit, where half of the group-members did not behave in a way consistent to stored stereotypes, participants reduced the perceived stereotype-relevance of the discussion topic. Probably, this effect serves the protection of the existing stereotypes in face of a contradictory social reality. Second and more important, in the condition with low normative fit participants did also not use the conjunctive categorization based on gender and authority when performing on the attribution task: in light of the disconfirming attitude pattern presented to them, perceivers preferred personal over sub-category attributions more strongly than in the condition with solely confirming group-members (i.e., high normative fit). Apparently, when perceived normative fit is low stereotype protection can also be reached through a process of personalization (via de-categorization) of observed stimulus persons (cf. Oakes et al., 1991, Exp. 2).

Conjunctive categorization: A new approach

In contrast to the classic categorization approach (e.g., Rosch, 1978), conjunctive categorization implies not only the aspect of differentiation between categories, but also the aspect of association of categories. Up to now, the connection of several group-memberships to a new social category was exclusively emphasized by the common-ingroup-identity model by Gaertner, Dovidio, Anastasio, Bachman & Rust (1993). This

model describes a vertical re-categorization of two groups (an ingroup and an outgroup, in particular) on a higher level of categorization (e.g., when the groups of ‘West-Germans’ and ‘East-Germans’ are re-categorized as ‘Germans’). In two respects, however, conjunctive categorization differs from this model. At first, conjunctive categorization implies a linkage of group-memberships within-subjects and not between-subjects, and second, in our model re-categorization runs not vertical upward directed, but horizontal.

The latter argument is also the reason why conjunctive categorization should be likewise distinguished from the phenomenon of sub-categorization (cf. Diehl, 1989; Fiske & Neuberg, 1990; Hewstone, 1994; Hewstone et al., 1991), which implies a vertical re-categorization on a lower level of inclusion (i.e., downward-directed). Sub-categorization means the splitting of a higher-level category into two (or more) sub-categories, which are differentiated from each other (e.g., when the category of ‘parents’ is sub-categorized into the groups of ‘fathers’ and ‘mothers’). In contrast to that, a conjunctive categorization is based on two crossed categorizations and results in the creation of two new conjunctive categories, which will become subsequently salient in perception. To give an example, a conjunctive categorization is given when people are categorized into the groups of ‘Brötchenverdiener’ (breadwinners), which are often employed men, and ‘Hausfrauen’ (homemakers), who are mostly unemployed women. In this example, the conjunctive categorization is based on gender (men vs. women) and employment (employed vs. unemployed) and it implies a subjectively meaningful (seen from perceivers’ perspective) association of categories on the one hand (the category ‘men’ is associated with the category of ‘employed people’ and the category ‘women’ is associated with the category of ‘unemployed people’) as well as a differentiation of two salient or reasonable category combinations (the conjunctive categories of breadwinners and homemakers) on the other hand. In contrast to so-called ,superimposed classifications‘ (see Deschamps & Doise, 1978; Vanbeselaere, 1987, 1991),

which are based on two (or more) simple, but congruent classifications (so is, for instance, the categorization into 'parents' and 'children' redundant with a categorization according to age, i.e. older versus younger persons), a conjunctive categorization results from an orthogonal crossing of two social classifications whereby the salience of particular category combinations depends on the specific pattern of perceived multiple fit.

The functional approach to social category salience, which was presented here in an extended version, views social categorization as an inherently flexible process (Ellemers & van Knippenberg, 1997). This notion implies two different aspects. First, it means that multiple group-memberships do not in any case result in a conjunctive categorization. Rather, this is only expected when a pattern of multiple fit of the involved social classifications to a shared pool of stimulus dimensions is perceived. According to the functional theory, other kinds of categorization should emerge as soon as the specific pattern of perceived fit changes. In particular, stimulus person is expected to become individualized when fit is perceived for neither of the given group-memberships. In addition, perceivers should categorize members of multiple categories on the basis of only one single group-membership when fit for one but not for the other classifications is perceived (i.e., when a pattern of simple fit is given). In short: the way people with multiple group-memberships will be categorized depends on the pattern of fit that is perceived in a specific situation. Second, the flexibility notion of the functional approach does not only admit situational variations of social categorization, but also long-term changes of existing stereotypes. With respect to the categories gender and authority, a prevalent conjunctive categorization along male superiors and female subordinates should change depending on alterations in gender and/or authority stereotypes: to the degree to which gender and leadership roles are described in more androgynous terms (cf. Kirchler, Wagner & Buchleitner, 1996, Exp. 1; but see also Maass, Montalcini & Biciotti, 1998, Exp. 2), the perceived multiple fit of both classifications on various descriptive (and mostly evaluative)

dimensions could change in future. This way, the functional approach to social category salience highlights two important aspects of social stereotyping which are also stressed by Eagly's (1987) social-role theory: that, on the one hand, stereotypes reflect social reality to some degree (cf. Bruner, 1957), but that they, on the other hand, are also alterable in principle (Oakes & Reynolds, 1997).

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FOOTNOTES

1 In addition, we found 10 statements related to gender but not related to authority (10 typical for women and none typical for men) and 20 statements related to authority but not to gender (16 for superiors and 4 for subordinates).

Table 1: Effect sizes for the gender error type x authority error type interaction

		normative fit	
		low	high
categories	conjunctive	0.10 ^a	0.51 ^b
	non-conjunctive	0.11 ^a	0.31 ^a

Note: Effect sizes are based on partial η^2 scores. Effect sizes with different superscripts differ significantly from each other ($p < .05$).

Figure 1: Gender x authority interaction effect for high normative fit

