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Complexity and ingroup projection

Complexity of superordinate self-categories and ingroup projection

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This chapter is about how diversity can beat provincial ethnocentric prejudice. More precisely, it is about how establishing a more complex system of standards leads people to be more tolerant in their judgment of other people, and of themselves. It focuses on one particular process, ingroup projection, that makes people intolerant towards deviant outgroups, and on how this process can be interrupted by inducing complexity.

Ingroup projection as a source of intolerance

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Behind the research presented in this chapter is a particular theoretical approach explaining intolerance towards deviants (Mummendey & Wenzel, 1999). The main idea is that those who are not like us are not only seen as different from us, but also as deviating from normative standards that we take for granted. Sometimes taking normative standards for granted is understandable, namely if these normative standards are derived from the goals and values of a certain group (Marques, J, Abrams, D. & Serôdio, 2001). For instance, scientists who fake their data are clearly deviating from the normative concept of a responsible scientist. However, sometimes things are more difficult, particularly if we have to deal with comparisons between groups within more inclusive, superordinate categories. Are social sciences less scientific than exact sciences? Are African-Americans less American than European-Americans (Devos & Banaji, 2005)? Should homosexual couples be considered as competent parents for adopted children? Groups often disagree about such issues. The reason is that members of social groups generalize attributes, values, norms, goals of their ingroup onto superordinate categories that provide dimensions for comparisons with outgroups. As a result, groups often consider themselves to be more prototypic than they are seen from the outside. In one study, German primary school teachers thought that they were more typical teachers than high school teachers, and high school teachers thought that they were more typical teachers than primary school teachers; chopper bikers and sport bikers both claimed that their group was more similar to the prototype of bikers than the other group (Waldzus, Mummendey, Wenzel & Boettcher, 2004). Both Germans and Italians, when comparing their own national groups with the other, associated more attributes of their own group with the word *Europeans* than the other group did (Bianchi, Mummendey, Steffens & Yzerbyt, 2008). Finally, in-group characteristics are judged as more human than those of the out-group, independently of their valence

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(Paladino & Vaes, 2009). Sometimes, only one of the two groups sees the ingroup to be more prototypical than the outgroup, whereas the other group claims equal prototypicality. Psychology students in a German university believed that they were more typical students than Business students, whilst Business students found themselves equally prototypical in comparison with Psychology students (Wenzel, Mummendey, Weber & Waldzus, 2003). White Americans showed a stronger association between their own group and America than between African and Asian Americans and America, while African Americans associated their group equally strong with America as White Americans (Devos & Banaji, 2005). Such asymmetries in ingroup projection are important and will be discussed in more detail later on.

Comparisons in terms of prototypicality are self-relevant, which is why people are often passionate about them. According to self-categorization theory (Turner et al., 1987) part of our self-concept consists of hierarchically structured self-categories (e.g., social psychologists, psychologists, scientists, human beings...) and ingroups and outgroups are compared in terms of their prototypicality for higher order, superordinate self-categories that include both the ingroup and the outgroup. Since superordinate categories are usually positively valued ingroups, subgroups obtain positive value from prototypicality. According to this theory, “ethnocentrism, attraction to one’s own group as a whole, depends upon the perceived prototypicality of the ingroup in comparison with relevant outgroups (relative prototypicality) in terms of the valued superordinate self-category that provides the basis of the intergroup comparison” (Turner, 1987, p. 61). Group membership gives people important orientations, it helps them to define their own position in a social context and to understand and evaluate what is going on and what they are supposed to do (Turner, Oakes, Haslam & McGarty, 1994). Being prototypical is a source of esteem, a positive identity (Tajfel & Turner, 1979). People

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have more positive attitudes towards groups that they consider to be more prototypical (Waldzus, Mummendey, Wenzel & Weber, 2003; Wenzel et al., 2003, see Wenzel, Mummendey & Waldzus, 2007, for a meta-analysis). Prototypicality is also related to entitlements to all the good things that the superordinate category (e.g., Europeans, Teachers, Americans, humans) has to offer (Wenzel, 2000; 2004) and higher status positions are seen as more legitimate if the higher status group is more prototypical (Weber, Mummendey & Waldzus, 2002). Outgroups that are not yet included but intend to join the more inclusive group (e.g., Turkey trying to join the European Union) are the more welcome, the more similar they are to the superordinate category's prototype (Waldzus, Schubert & Raimundo, 2009, see also Ullrich, Christ & Schlüter, 2006).

Mummendey and Wenzel (1999) proposed that a process that they call *ingroup projection* is the reason why ethnocentrism and biased attraction towards the own group are so prevalent. Ingroup projection means that the representations that people have of their ingroup and of relevant superordinate categories overlap. The projection metaphor and particularly Mummendey and Wenzel's (1999) claim that the attributes that are projected are the ones that render an ingroup distinct in comparison with the outgroup suggests a unidirectional bottom-up generalization of ingroup features to the superordinate category. Indeed, Waldzus, Mummendey & Wenzel (2005) found that experimentally induced changes in the self-stereotype of Germans were reflected in parallel changes in participants' stereotypes of Europeans, a result that was replicated with implicit measures by Bianchi et al. (2008). However, as was clarified by Wenzel et al. (2007) "... group members may also claim relative prototypicality for their group by assimilating the perception of their ingroup to the prototype of the superordinate group ... In fact, in our research we cannot always distinguish between these two possibilities; rather, we use the term *ingroup projection* as a short general label for *the perception, or*

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claim, of the ingroup's greater relative prototypicality for the superordinate group." (p. 337, italics in the original). Thus, what is important in ingroup projection is that what people think of their ingroup and what they think of superordinate categories that provide comparison standards and norms is often the same. Groups confuse their ingroup with the superordinate category; they take it as *pars-pro-toto*, as a part that stands for the whole (Wenzel et al., 2003). Outgroups that are different from an ingroup are not only seen as different, but also as deviating from the prototype of the superordinate category. They are less representative and, accordingly, what is different in them is wrong, bad or unattractive, non-normative and inferior.

It seems that, apart from ingroup projection, there are other sources of ethnocentrism in intergroup relations that do not necessarily involve generalizations to the superordinate category (e.g., Hegarty & Chryssochoou, 2005). However, intergroup attitudes are reliably related to the perception of prototypicality (Wenzel, Mummendey & Waldzus, 2007) and the evidence presented here suggests that ingroup projection explains at least part of the phenomenon.

As a final note before moving on to factors that reduce ingroup projection a similar phenomenon on the individual level has to be mentioned: the false consensus effect. It has been studied for a long time in social psychology (Ross, Greene, & House, 1977) and researchers identified social projection (Allport, 1924), the tendency to expect similarity between oneself and others, particularly ingroup members (Clement & Krueger, 2002; Mullen, Dovidio, Johnson, & Cooper, 1992) as underlying process (see Krueger, 2007; Robbins & Krueger, 2005 for a reviews). Although a similar phenomenon, ingroup projection is empirically and theoretically distinct from social projection (Bianchi, Machunsky, Steffens & Mummendey, 2009; Machunsky & Meiser, 2009). In social projection we generalize from our 'self' to others. In contrast, in

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ingroup projection we generalize from a particular self-category (the ingroup) to another particular self-category, namely the superordinate category, which is an ingroup on a more inclusive level. Ingroup projection is particularly important in intergroup contexts, when we compare people of our own kind with others that are different. It provides our group with positive distinctiveness, because the ingroup is seen as more similar to the (positive) prototype of the superordinate category than the outgroup. With that it contributes to a positive social identity (Tajfel & Turner, 1979), but also legitimizes the negative treatment of outgroups to the extent that we perceive them as deviating from what we consider normal, or even as questioning our way of being (Mummendey & Wenzel, 1999). It leads to psychologically produced intolerance, as we judge others by our own measures; we apply norms and expectations that they would not apply themselves, and often they do the same with us.

Reducing ingroup projection

What can be done about such psychologically based intolerance? Mummendey and Wenzel (1999) suggested two major predictors of ingroup projection: Dual identification, that is, the simultaneous identification with the ingroup and the superordinate category, and the definition of a clear prototype of the superordinate category. These two predictors will be discussed in more detail in the following pages. Before that, it should also be mentioned that recently, more general conditions of information processing (Machunsky & Meiser, 2009, Rosa & Waldzus, 2009), more specific strategic group goals (Sindic & Reicher, 2008), and intergroup threat (Finnley, 2006; Ullrich, Christ & Schlüter, 2006) have been studied as predictors for ingroup projection as well, but they will not be discussed further in this chapter.

Group members that simultaneously identify with the ingroup and the superordinate category have been found to show higher levels of ingroup projection

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(Wenzel et al., 2003; Waldzus et al., 2003). It seems that these people have a particular interest in viewing their ingroup as prototypical, as they take the standards provided by the superordinate category more seriously and they have a stronger interest in seeing the ingroup in a positive light. Such dual identification, combined with ingroup projection, that is, a large overlap between these two identities, can also be considered as part of a self-concept typical for persons with low social identity complexity (Brewer, this volume; Brewer & Pierce, 2005; Roccas & Brewer, 2002). Reducing intolerance by changing people's identifications is difficult. Identifications have particular functions (see Riketta, 2008 for an overview). Moreover, inducing a more inclusive ingroup while at the same time maintaining one's subgroup identification has been proposed as a way to reduce prejudice (Crisp, this volume; Crisp, Stone & Hall, 2006; Hornsey & Hogg, 2000a, b; Gaertner & Dovidio, 2000). As dual identifiers have also a stronger tendency for ingroup projection, however, there seems to be a trade-off in the effects of dual identity. On the one hand it might reduce intergroup discrimination because outgroup members are partly seen as ingroup members of the more inclusive common ingroup. On the other hand, the more inclusive ingroup might be represented as a superordinate category, providing ethnocentric standards for subgroup evaluations via ingroup projection. That is why it is important to search for conditions that can reduce ingroup projection without necessarily undermining dual identification.

The present chapter focuses on such a condition discussed by Mummendey and Wenzel (1999), namely the definition of the prototype of the superordinate category. Representations of social categories can differ, for instance in terms of their entitativity (e.g., Brewer & Harasty, 1996; Lickel et al., 2000; McGarty, Haslam, Hutchinson, & Grace, 1995) or variability (e.g., Linville & Fischer, 1993; Park, Judd, & Carey, 1991),

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and these variations can have implications for processing information about members of these categories (e.g., Ryan, Bogart, & Vender, 2000).

Mummendey and Wenzel (1999) emphasize the role of varying the representations of superordinate categories rather than the representations of the target groups in changing intergroup attitudes. They hypothesise that ingroup projection will be attenuated if the prototype of the superordinate category is less well-defined, and they distinguish between four structural properties that make up a prototype's degree of definition. Only three of them have been studied so far: The prototype (1) may be represented clearly or unclearly, (2) it may have a small or broad scope, and (3) it may be simple or complex.

(Un)Clarity

The idea that the prototype may be represented with different degrees of clarity was inspired by a similar proposal by Hogg, Cooper-Shaw and Holzworth (1993) for the intra-group level. They had found that perceived clarity of the ingroup prototype was positively related with perceived self-prototypicality in terms of the group norm and with the use of prototypicality as the basis for judgments on social attraction amongst group members. In a similar vein, Mummendey and Wenzel (1999) propose that if the notions on the prototype of the superordinate category are not clear, no group can claim to be more prototypic than the others.

Waldzus et al. (2003, Study 1) measured the prototypicality of Germans and Poles for Europeans as perceived by German participants. The clarity of the European prototype was manipulated by false feedback on ingroup consensus. Participants had to rate Europe on several attributes (*culture, tradition, sense of community etc.*) and received information about the alleged responses of German participants in five other studies. The information was presented as profiles, that is, lines connecting attribute

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ratings in a graph. In one condition the presented profiles of ratings in other studies were very similar to each other and to the participant's own responses, suggesting a clear profile of the European prototype shared within the German ingroup. In the other condition all profiles were very different from each other and from the participant's own responses, so that it seemed to be completely unclear how Europe is, as there was obviously no consensus about it. Relative ingroup prototypicality was measured by asking participants to type in typical attributes of Germans in comparison to Polish people and of Polish in comparison to German people and then rate how much they think these attributes apply to Europeans. The more the German attributes and the less the Polish attributes applied to Europeans, the higher the relative ingroup prototypicality. Critically and, as predicted, relative ingroup prototypicality was higher in the condition with a clearly defined prototype of Europeans than in the condition where this definition was unclear. It seems that convincing people that the prototype of superordinate categories is unclear can indeed reduce ingroup projection. However, one result of this study was rather discouraging: The manipulation had no effect for participants who simultaneously identified with both Germans and Europeans (Figure 1). Probably they were highly motivated to see their group as prototypic, or they held strong convictions on the German and European self-stereotypes so that they still projected their German ingroup attributes to Europeans. This is one of the reasons why subsequent research focused more on complexity of the representation of the superordinate category rather than on variation in clarity, although the latter is at least of equal theoretical relevance.

Scope

The second property is the variation between broad or narrow scope of the prototype of the superordinate category. Note that the variation between narrow and

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broad refers here to the number of dimensions on which a prototype is defined. For instance, if a prototypical position is only defined on one dimension (e.g. everyone who is born in America is a prototypical American) the prototype has a narrower scope than if prototypical positions are defined on four dimensions (e.g., to be a prototypical American, one has to be born in America, but also to be white, Christian and male). A narrow scope prototype is similar to an unclear prototype, but it does not leave the prototype of the superordinate category completely undefined. Prototypic positions within the superordinate category *are* defined, but only on very few dimensions, leaving prototypic positions on many other dimensions open. Compared to a broader scope prototype, a narrow-scope prototype should reduce ingroup projection. The reason is that any subgroup (e.g., African American, Asian American, White American, Native American) can be seen as potentially prototypical as long as it fits the defined typical positions on the few prescriptive dimensions (e.g., being born in America). One advantage of a narrow-scope prototype compared to an unclear prototype is that it might be easier to accept for people for whom the superordinate category is relevant. Although in Waldzus et al. (2003, Study 1) the manipulation had no effect on the identification with Europeans, in the long run completely undefined categories might become useless and people may resist or have difficulties to implement unclear category definitions into their self-concept. Narrow-scope representations (e.g., everyone with German citizenship is a German) might be easier to accept, as they provide at least some meaning. There has been little research on the effect of narrow-scope prototypes of the superordinate category (Waldzus, Meireles, Dumont & O'Sullivan, 2009), and for reasons of clarity I will return to discuss research on narrow-scope prototypes later on when I discuss the role of cognitive mindsets in ingroup projection.

Complexity

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Probably the most interesting, but also most challenging way of reducing ingroup projection by modifying the representation of superordinate categories is to make them more complex or diverse. A complex representation of a superordinate category implies that there is no single prototype that best represents that category. Mummendey and Wenzel (1999) define it as a representation in which “the distribution of representative members on the prototypical dimension is (...) multimodal” (p. 167). That means that “various distinctive positions on the underlying dimension may be perceived as prototypical and normative.” (p. 168). To give an example, a representation of Americans by a white, male, Christian prototype is simple in comparison to the more complex representation of Americans as White American, African-American, Asian-American, Latino-American, Native-American and ‘racially’ mixed, as Protestant, Catholic, Mormon, Amish, Muslim, Jewish, Buddhist, Bahai, Atheist, Agnostic etc.; male, female or transgender; young, middle aged, old; rich or poor; liberal or conservative.

Some terminology

Complexity or diversity of the superordinate category should not be confused with mere heterogeneity, that is, with the idea that many differences between subgroups can be identified within it. It should also not be confused with diversity as it is used in organizational psychology or management science, namely as meaning that an organization or team includes members that have different category membership in terms of affiliation, age, sex, professional background, ethnicity or “any attribute which may lead people to the perception that: *that person is different from me*” (Triandis, Kurowski & Gelfand, 1994, p. 772, quoted in De Abreu Dos Reis, Sastre Castillo & Roig Dobón, 2007; see also Rink & Jehn, this volume; van Knippenberg & van Ginkel, this volume and Williams & O'Reilly, 1998 for a review). Diversity perceptions in this

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sense can be even an instantiation of ingroup projection, namely when one distinguishes between more or less prototypical subgroups. In contrast, a complex representation of the superordinate category is a representation of this category *as being diverse*, that is, diversity is seen as one of its characteristics. It goes beyond, and does not even depend on the knowledge about the existence of particular subgroups. For example, someone might be aware that there are Muslim and Buddhist believers in the United States of America, but still consider America as a predominantly Christian country (simple representation). In contrast, someone might think of America as a country with a great diversity of religious beliefs and institutions. Only in the latter case we would talk of a complex representation. If the superordinate category representation is complex, for instance if someone reads about a “multi-professional team”, differences between subgroups or members are not only factual: they are expected. The inclusive group would not be what it is without them.

Another terminological clarification is necessary in terms of the use of the combinations ‘complex prototype’ or ‘complex representation’. Although some previous publications (e.g., Waldzus et al., 2003) and some researchers on ingroup projection have been using the term ‘complex prototype’, I agree with some critique by others (e.g. Manuela Barreto, personal communication) that the notion of complexity is not entirely compatible with the definition of a prototype. Instead, I prefer to talk about a complex representation that allows for multiple prototypes. For instance, both a robin and an eagle can be considered as two different prototypes of the moderately complex category of birds. The world of birds would be poorer if one of the two prototypes were missing.

Some data

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The first evidence that inducing a complex representation of the superordinate category can reduce ingroup projection comes from Waldzus et al. (2003, Study 2). The study was basically the same as the one reported in the section on clarity (Study 1) with the exception that not the clarity but the complexity of the superordinate category was manipulated. Participants were asked to imagine that they had to describe to another person either the diversity (complex condition) or the unity (simple condition) of Europe, and to type in their ideas into an open text field. Results showed that in the simple condition the German participants expressed a higher prototypicality of Germans than of Poles for Europeans and this tendency was increased for those who simultaneously identified with Germans and Europeans. In the condition in which a complex representation of Europe was primed, however, participants expressed equal prototypicality of Germans and Poles. This was even the case for dual identifiers (Figure 2).

The reduction of ingroup projection by a complex superordinate category was replicated by Waldzus, Mummendey and Wenzel (2005) with the same manipulation and again with Germans as ingroup and Europeans as superordinate category, but with different outgroups and using a different indicator of ingroup projection. Apart from the representation of Europeans as either complex or simple, the self-stereotype of Germans was manipulated by presenting participants with either the Italians or the British as an outgroup. Ingroup, outgroup and the European superordinate category had to be rated on a list of attributes. As expected, Germans scored higher on different attributes, depending on which outgroup was involved. Germans were seen, for instance, as more “reserved” and “stiff” when the outgroup was the Italians, but as “having tastier meals” and being more “companionable” when the outgroup was the British. Ingroup projection was indicated by the fact that the same manipulation led to similar shifts in

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the attribution of the same characteristics to the superordinate category. Not only Germans, but also Europeans were seen as “having tastier meals”, being less “reserved” etc. when the British as compared to when the Italian outgroup was involved. Most importantly, this tendency was only shown by participants primed with a simple representation, but not by those primed with a complex representation of Europeans (Figure 3). Again, priming a complex representation of the superordinate category reduced ingroup projection and indirectly lead to more positive attitudes towards the respective outgroup.

Complexity and prototypicality in asymmetric status relations

Not all groups consider themselves to be more prototypic than the outgroup. Asian-Americans, for instance, have stronger associations between White Americans and America than between Asian-Americans and America (Devos & Banaji, 2005). East Germans agreed that West Germans are more prototypical Germans than themselves (Waldzus, Mummendey, Wenzel & Boetcher, 2004). Scottish participants who had separatist political goals saw the Scottish as less prototypic than the English for Britain when the independence of Scotland was made salient (Sindic & Reicher, 2008). There are several explanations for such low prototypicality of some groups. On the one hand, there might be strategic reasons for people to consider lower prototypicality of their group as more desirable, as with the Scots aspiring for independence. On the other hand, lower status groups or minorities may face so-called reality constraints (e.g., Ellemers, van Rijswijk, Roefs, & Simons, 1997). Numerical minority/majority ratios, but also social status (e.g., Weber, Mummendey & Waldzus, 2002) are often used as prototypicality cues. Moreover, powerful groups may dominate social discourse in a way that suggests that what they are is more representative than what the others are, and less dominating groups may after a while accept this idea, something that might also

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contribute to what Major and Schmader (2001) call 'legitimacy appraisals'. Whatever the reason, some groups are low-prototypicality groups, that is, they feel less prototypic within the superordinate category than the outgroup.

What would be the effect of a complex representation of the superordinate category for low prototypicality groups, such as low-status minorities? For instance, if complexity had the opposite effect, namely to increase the prototypicality of groups that normally consider themselves as non-prototypic, both groups in such an asymmetric context would end up with perception of more equal prototypicality of the two involved groups, which may contribute to intergroup consensus and, in the long run, higher equality.

In an online experiment, Alexandre, Waldzus & Esteves (2009a) categorized people into artificial groups in an intergroup context. After participating in an alleged test of emotional intelligence, participants received false feedback that they were a member of the group of people with either Inductive or Deductive emotional intelligence. Relative ingroup status and the complexity of the superordinate category were manipulated. In the higher-status condition participants were told that members of their particular group were the majority of emotionally intelligent people, socially more valued, more often selected in job interviews and achieving more often leadership positions. In the lower-status condition participants were told the opposite. Complexity was manipulated in a similar way as in the other studies: Participants were asked to imagine that they had to describe to another person either the diversity of the group of people with high emotional intelligence (complex condition) or simply how highly emotionally intelligent people are, that is, which characteristics would describe this group (simple condition). Relative ingroup prototypicality was measured by ratings of the ingroup, the outgroup and the superordinate category on a list of attributes (Wenzel

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et al., 2003) and with two other prototypicality measures using geometrical pictures (Waldzus & Mummendey, 2004). For participants who identified themselves with both the superordinate category and their subgroup the result was a significant interaction between the status and the complexity manipulation. Complexity decreased relative prototypicality, though not significantly, in the higher status condition, but increased it significantly in the lower status condition. Moreover, in the simple condition relative ingroup prototypicality was lower for the lower status minority than for the higher status majority, but in the complex condition both groups perceived equal prototypicality of the ingroup and the outgroup. It seems that a complex representation helps lower status minority groups to detach their prototypicality judgments from reality constraints.

In another correlational study, Alexandre, Waldzus and Esteves (2009a) found that White Portuguese (higher status majority) were seen as more prototypical for people living in Portugal than Cape-Verdean or Brazilian immigrants. More importantly, perceived complexity of the superordinate category was negatively correlated with relative ingroup prototypicality for the White Portuguese participants, but positively for Cape-Verdean and Brazilian participants.

To sum up, in asymmetric status relations in which social and numerical status shapes the perception of prototypicality, a complex representation of the superordinate category can lead to a consensus between the two groups on more equal prototypicality. This result is very encouraging, as it opens a way to social change that does not necessarily depend on escalation of conflicts between groups (e.g., Subasic, Reynolds, & Turner, 2008). What was still confounded in these studies was numerical status (membership in the majority vs. minority) and social status, two variables that are not always correlated in real life contexts (e.g., organizations). More research is necessary to disentangle these two variables and also to test whether the relation between

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complexity, status and relative prototypicality is shaped by the formal structure of more or less legitimate status relations.

Complexity of negatively valued superordinate categories and prototypicality

Sometimes being prototypic is something that one should better avoid, namely if the category for which one is potentially prototypic is a negative reference group (e.g., criminals). Although people have in general a preference to see their ingroups in a positive light, comparisons between subgroups can also be made with reference to negative superordinate categories. In such a case, relative ingroup prototypicality is negatively related to ingroup identification and legitimacy of high ingroup status, and positively related to attitudes towards the outgroup (Weber et al., 2002; Wenzel et al., 2003).

What can be expected from a complex representation of a negative superordinate category? Lower status groups (e.g., African immigrants in Europe) are often seen as prototypical for negative reference groups (e.g., criminals), although the base-rates make them a minority within that group (e.g., Fiske, 1998; Hamilton, 1981). Negative reference groups can be ingroups or not, but even if they are outgroups they can still be superordinate categories for self-relevant subgroup comparisons, as they include members of subgroups (e.g., Black and White criminals) that potentially share group membership with the perceiver. Would complexity reduce prototypicality of lower status groups and increase prototypicality of members of the higher status group? In that case, complexity of superordinate categories would offer a way to change negative stereotypes.

These questions were examined in an experiment by Alexandre, Waldzus & Esteves (2009b) with Social Sciences students (lower-status group, mainly from Sociology and Psychology) and Exact Sciences students (higher-status group, mainly

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from Engineering, Physics, and Applied Mathematic). Complexity and the valence of the superordinate category (undergraduate students) were manipulated. The results showed the expected three-way interaction: For the positive superordinate category the pattern was the same as in the studies by Alexandre, Waldzus and Esteves (2009a) reported above. For the negative superordinate category the pattern was, as expected, reversed: The lower-status group was seen as more prototypic than the higher-status group, but only in the simple condition. Making the superordinate category more complex eliminated this pattern as well. A complex representation seems to reduce the prototypicality of lower-status groups for negative superordinate categories, that is, negative stereotypes.

A similar effect was observed in a relevant real life context in which Black and White Portuguese were compared with reference to a negative superordinate category (criminals) that is often used for such comparisons although the two compared groups are not entirely nested within this group. In June 2005, the Portuguese and international media reported about a collective mugging, allegedly committed by about 500 adolescents at Carcavelos beach near Lisbon that is often frequented by immigrants with African descent. In fact, this mugging never happened, but the myth was spread by usually serious newspapers and TV channels (e.g., BBC world: <http://news.bbc.co.uk/2/hi/europe/4083030.stm>, downloaded at 7th of June 2009). Using this event as a backdrop, Alexandre, Waldzus and Esteves (2009b) asked White and Black undergraduate students at Lisbon universities about their perception of the prototypicality of Black and White Portuguese for the superordinate category of criminals in Portugal. The complexity of the representation of criminals in Portugal was manipulated. When left-right political orientation was statistically controlled as a covariate, Black participants saw their own group as being more similar to the

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prototypical criminal in Portugal than did White participants, but only in the simple, not in the complex condition. Moreover, the complexity manipulation had consistent effects on several other variables of the intergroup context, such as attributions, feelings of threat and behavioral intentions towards the outgroup. That is, in the complex condition the alleged event was interpreted less as an intergroup conflict than in the simple condition.

How does it work?

As a summary of the research reported so far (for a summary see Table 1), one can conclude that making representations of superordinate categories more complex is a promising way to reduce ingroup projection, and thus to overcome intolerance, to reduce intergroup conflicts and to achieve more equality in judgments on the prototypicality of the ingroup and the outgroup. This effect generalizes even to asymmetric status relations where complexity leads to more consensus between high and low prototypicality groups and to contexts in which lower status groups are seen as prototypic for negatively evaluated reference groups. The results follow the logic of the extended version of the ingroup projection model that takes into account moderations by relative status of subgroups and valence of the superordinate category (Wenzel, Mummendey & Waldzus, 2007). They open a promising line for interventions in intergroup tensions and conflicts without necessarily altering the salience of categorizations into ingroup and outgroup, unlike other approaches that propose to reduce prejudice by fostering a more individualized perception of outgroup members (Brewer & Miller, 1984), cross-categorization or multiple categorization in general (Crisp, this volume; Crisp & Hewstone, 2007; Deschamps & Doise, 1978; Migdal, Hewstone & Mullen, 1998; Miller, Spanovic, & Stenstrom, this volume) or by inducing more inclusive common ingroups (Gaertner & Dovidio, 2000; Gaertner et al., 1993).

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Complex superordinate categories can complement such approaches. For instance, they can prevent a common ingroup from triggering ingroup projection or they may support the development of mutual intergroup differentiation that takes into account the strengths and weaknesses of both groups involved (Hewstone & Brown, 1986, Brown & Hewstone, 2005).

One important issue, however, was not addressed by the research reported so far, namely which processes are involved in the reduction of ingroup projection by complex superordinate categories. On the one hand, superordinate categories can be seen as social construal, as an outcome and vehicle of social interaction, of negotiation and of discourse between and within groups, as general orientations that shape social relationships and social change. Indeed, ingroup projection can be seen as part of more general shared belief systems about social structure (Tajfel & Turner, 1979, Kessler and Mummendey, 2002, Kessler et al., in press). Complex superordinate categories have much in common with the idea of multiculturalism, that is, the appreciation of intergroup differences (e.g., Verkuyten, 2005; this volume). The propagation of complex superordinate categories, for instance of Canada as a country with different sociolinguistic groups that are equally representative, seems to be a constitutive part of a multiculturalism ideology, which has an effect on intergroup perceptions very similar to that of complex superordinate categories. For instance, when exposed to a multiculturalism ideology, White Americans expressed less ethnocentric bias, (Wolsko, Park, Judd & Wittenbrink, 2000), and preferences for a multiculturalism ideology over a colour-blind, assimilationism or separatism ideology have been found to moderate the usual correlation between intergroup-differentiation and ingroup bias (Park & Judd, 2005).

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On the other hand, the concept of a complex representation of a superordinate category is also distinct from the concept of a multicultural ideology. It is a cognitive representation of one social group rather than a fully fledged belief system about society as a whole. Moreover, differently from a multicultural ideology and from what are discussed by Ely and Thomas (2005) as ‘diversity perspectives’, complex superordinate categories do not imply but rather explain the appreciation of intergroup differences. In this approach, diversity norms should be seen rather as the *explanandum* than the *explanans*. Intergroup differences become normative as a result of cognitive representations. They are appreciated *because* the superordinate category is seen as complex and as a relevant and usually positively evaluated self-category (Turner et al., 1987). Such a perspective does not exclude the possibility of strategic processes in which norms or attributions of prototypicality are accepted when they fit long-term goals (e.g., Sindic & Reicher, 2008). It also does not exclude the possibility that cognitive representations of superordinate categories develop as a response to normative prescriptions. However, to understand the effects of complex superordinate categories it is necessary to disentangle cognitive from normative or strategic processes analytically and empirically, even if they may be intertwined in social reality.

The manipulations and measures of complexity that have been discussed so far were too explicit for such a differentiation as they were openly referring to the intergroup context in which the prototypicality judgments were made and openly triggered the idea of diversity. The reported effects could partly be an effect of social desirability. Participants may have inferred that diversity is appreciated by the experimenter or the institution behind the study. Some evidence of social desirability effects in prototypicality judgments comes from the studies of Devos and Banaji (2005)

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who found a discrepancy between implicit and explicit measures of associations between America and Black and White Americans.

Another alternative explanation could be that the manipulations primed tolerance or diversity goals that then automatically guided cognition. For instance, multiculturalism ideology has been found to reduce ethnocentric bias even on the implicit level (Richeson & Nussbaum, 2004; Sibley & Liu, 2007).

A third and empirically more challenging explanation is that indeed the cognitive process of gathering prototypicality information was changed by the complex cognitive representations. Research has shown that certain cognitive mindsets can reduce ingroup bias even if they were induced by manipulations that do not make any reference to the intergroup context at stake. For instance, priming the consideration of multiple criteria for social categorization reduces intergroup bias (Crisp, this volume; Hall & Crisp, 2005). Ingroup projection can, under some circumstances, be an outcome of cognitive biases in information processing (Machunsky & Meiser, 2009; Rosa & Waldzus, 2009). The use of complex categories might have led participants to end up with more balanced views on the prototypicality of the subgroups involved because they handled different dimensions of the superordinate category separately when searching for prototypicality cues instead of collapsing them in heuristic judgments.

Cognitive and small-scope mindsets reduce ingroup projection

Waldzus, Meireles, Dumont and O'Sullivan (2009) tested this cognitive hypothesis. The use of multiple orthogonal dimensions in information processing has been studied as an inter-individual difference variable (cognitive complexity, e.g., Scott, Osgood, & Peterson, 1979, Goldstein & Blackman, 1978) and as a situational variable. In social psychological research on category use in social perception, the complexity of knowledge structures is assumed to depend on the number of features or attribute

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dimensions and on the average correlation between these dimensions (Judd & Lusk, 1984; Linville & Jones, 1980; Linville, 1982). In the same vein, Waldzus, Meireles et al. (2009) assumed that the representations of superordinate categories should depend on the number and the orthogonality of the dimensions that are used in these representations. They distinguish between representations using only few or many dimensions and between high or low orthogonality (that is, non-correlation) of these dimensions. Representations with only few dimensions – orthogonal or correlated – should lead to narrow-scope prototypes of the superordinate category and representations with many orthogonal dimensions should lead to more complex representations of superordinate categories. In both cases, ingroup projection should be reduced, because the prototype of the superordinate category is not clearly defined (Mummendey & Wenzel, 1999). Representations, however, that use many correlated dimensions should lead to a well-defined prototype of the superordinate category that contains many prototypical positions on the various dimensions and should trigger ingroup projection.

In a study with undergraduate psychology students of a South African university Waldzus, Meireles et al. (2009) manipulated the use of many versus few dimensions and the orthogonality of these dimensions by a mindset priming. After that, ingroup projection was measured by two indicators assessing relative prototypicality of the ingroup (psychology students) in comparison to the outgroup (law students) within the superordinate category (students of the university in general). The mindset priming made no reference to the intergroup context. Instead, participants were presented with descriptions of persons and had to select the best-fitting one out of a number of possible names. Each person description contained one or more attributes (e.g., a woman that is likable). The task was divided into six subtasks and, depending on whether participants

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had to switch to a new subtask after matching three or seven names to persons, the use of few versus many dimensions was primed, respectively. The use of orthogonal vs. correlated dimensions was manipulated by either cumulating attributes over the person descriptions within one block (e.g., a woman that is likable; a woman that is likable and bright; a woman that is likable, bright and determined) or not (e.g., a woman that is likable; a woman that is bright; a woman that is determined), respectively. The assumption was that cumulating attributes would produce the tendency to interpret the cumulated attributes as non-redundant (Grice, 1975), thus priming the use of dimensions as orthogonal. The hypothesis was that relative ingroup prototypicality should be reduced in the conditions priming the use of many orthogonal dimensions (complex) or the use of only a few dimensions (narrow scope). Results confirmed the hypothesis, but only on the more subtle prototypicality measure using attribute ratings. There was no effect on the more blatant pictorial measure.

The same result was found in another study for Portuguese Business students (higher status group), but not for Accountancy students (lower status group). That is, although a cognitive process, the effect of the mindset priming on perceived prototypicality was adaptive to the social context (e.g., status). Moreover, in the latter study factor loadings of attribute ratings of the superordinate category in a factor analysis with forced one-factor solution was used as an indicator of the degree of definition of the prototype of the superordinate category, and this variable mediated the effect of the manipulation.

To conclude, although normative, strategic or ideological processes might be involved in the effects of complexity on relative ingroup prototypicality, the fact that priming mindsets that undermine a clear definition of the prototype of the superordinate

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category reduces ingroup projection supports the argument that indeed a cognitive process plays a mediating role.

And cognitive complexity?

Is it possible to conclude from this result that people with higher cognitive complexity are more tolerant, that is, less prone to ingroup projection? For instance, cognitive complexity has been found to be associated with less ingroup bias, less extreme ingroup and outgroup evaluations, and more perceived variability within the ingroup and the outgroup (Ben-Hari, Kedem & Levy-Weiner, 1992). However, it seems that the relation between cognitive complexity and ingroup projection is less straightforward. Meireles (2007) found in a study with alumni of a Portuguese university that, although the manipulation of cognitive complexity had a similar, though weak, effect as manipulations of complex superordinate categories, cognitive complexity measured as an inter-individual difference variable (using Scott's H, Scott, Osgood, & Peterson, 1979) was positively related to the relative prototypicality of participants' professional ingroup! One explanation can be that cognitively highly complex people use more dimensions but do not always represent social categories as more complex. When repeatedly processing information on the same social category, they may activate prototypical positions on many dimensions simultaneously, which leads in the long run to strong associations between them and to representations that use many correlated instead of many orthogonal dimensions. Thus, paradoxically, although having the cognitive capacity for complex representations, particularly when confronted with new categories, cognitively complex individuals may hold richer ingroup stereotypes, as more dimensions are involved. In most social contexts these more elaborated self-stereotypes may be functional, but they can also be responsible for

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ingroup projection triggering ethnocentric bias. More research is necessary to clarify these processes.

Implications for policy and practice

The overall conclusion from the accumulated research reported here is clear: Inducing a more complex representation of superordinate categories, positive or negative, can promote intergroup tolerance and attenuate negative self-evaluations of disadvantaged groups, as it contributes to judgments of equal prototypicality in intergroup contexts. Before going into detail, however, I would like to emphasize that this chapter does not advocate tolerance or complexity in every case. Sometimes, there is too much tolerance (e.g., towards corruption, domestic violence, human rights violations). Whether or not tolerance is desirable depends on political goals and cultural norms rather than on psychological principles. In our rapidly changing society, however, we face increasing diversity in many social contexts, globally (e.g., challenge of western dominance in international relations) and locally (e.g., in families, schools, cities, organizations) for which ethnocentric intergroup comparisons due to simplified superordinate categories are dysfunctional as they can trigger unnecessary conflicts and hostility. Moreover, historical changes have made status differences between important social categories (e.g., Blacks and Whites, men and women) obsolete in most social contexts, but without eliminating the perception of status related prototypicality differences by a large part of the population. What this research shows are some fundamental psychological principles that can eliminate perceptions of unequal prototypicality in cases in which tolerance and equality is desirable but difficult to achieve.

As these are fundamental processes, they are potentially relevant for all social contexts in which superordinate categories are used as source of standards and norms

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that serve as reference for the evaluation of others and of ones own group. Politicians may emphasize in their rhetoric not only the unity, but also the complexity of superordinate categories when they attempt to mobilize several groups in society for an important common goal, just as that time Senator Barack Obama did in his legendary speech “A More Perfect Union” on March 18, 2008

(<http://www.youtube.com/watch?v=pWe7wTVbLUU>, retrieved September 22, 2009).

The media, if they do not intend to blindly re-enforce resentment, dysfunctional stereotypes and prejudice might reflect on whether they pay the actual complexity of superordinate groups enough tribute when framing their messages (e.g., Seyle & Newman, 2006). Social workers, consultants or leaders in public service and in the business world might use complex representations of superordinate categories as a means for conflict prevention and resolution. Finally, teachers may consider supporting children in the development of the ability to take on a complexity mindset if necessary.

Outlook

Social change processes that increase social and cultural diversity can be a challenge and a chance for a better life for everybody. The knowledge about how complex superordinate categories affect judgments on relative prototypicality is important for the understanding of how our psychological equipment deals with them, leading to desired or undesired outcomes. However, it should not be understood in isolation. The nested structure of intergroup contexts within superordinate categories is a particular case of more general constellations of multiple categorizations (Crisp & Hewstone, 2007). Superordinate categories play a key role in intergroup contact (Allport, 1954; Brown & Hewstone, 2005, Gaertner & Dovidio, 2000; Pettigrew, 1998). They affect people’s social identity complexity (Miller, Brewer & Arbuckle, 2009;

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Roccas & Brewer, 2002), acculturation strategies (Berry, 1984, Bourhis, et al., 1997), group-based emotions (e.g., Wohl & Branscomb, 2005), belief systems (Kessler et al., in press; Weber et al., 2002), justice perceptions (Wenzel, 2000; 2004), ideology (Park & Judd, 2005), power relations (Simon & Oakes, 2006; Turner, 2005) and many other important variables. Compared to this importance, research on characteristics of such superordinate categories is in a relatively early stage. For instance, more sophisticated measures have to be developed in order to disentangle the cognitive, normative, motivational and strategic processes that are involved. Interventions have to be developed, implemented and evaluated in longitudinal studies before we can be sure whether complex superordinate categories can hold what they promise: to provide the psychological conditions of tolerance and appreciation of intergroup difference.

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Table 1: Effects of a complex representation of the superordinate category on perceived relative ingroup prototypicality for higher and lower status groups in positive and negative contexts found in the reported studies.

<i>Study</i>	<i>Positive Superordinate</i>		<i>Negative Superordinate</i>	
	<i>Category</i>		<i>Category</i>	
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
Waldzus et al. 2003	Decrease			
Waldzus et al. 2005	Decrease			
Alexandre et al. 2009a, Study 1	Decrease	Increase		
Alexandre et al. 2009a, Study 2	Decrease	Increase		
Alexandre et al. 2009b, Study 1	Decrease	Increase	Increase	Decrease
Alexandre et al. 2009b, Study 2			Increase	Decrease

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Figure captions

Figure 1: Relative ingroup prototypicality in the conditions with a clear or unclear prototype of the superordinate category (SC) for participants with different levels of identification with the ingroup (IG) and the SC (data from Waldzus et al., 2003, study 1)

Figure 2: Relative ingroup prototypicality in the conditions with a simple or complex representation of the superordinate category (SC) for participants with different levels of identification with the ingroup (IG) and the SC (data from Waldzus et al., 2003, study 2)

Figure 3: Ratings of Europeans on attributes distinctive for Germans in comparison to the British (counter-British) and to Italians (counter-Italian) depending on the salient outgroup of Germans and complexity of the superordinate category representation (data from Waldzus et al., 2005)





