Incorporating Status Bias into Prejudice Research

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By

Anne Speer

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Supervisors:
Prof. Dr. Olaf Groh-Samberg
Prof. Dr. Patrick Sachweh
Dr. Lusine Grigoryan

Bremen International Graduate School of Social Sciences

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"Are negative evaluations the problem

and is getting us to like one another more the solution?"

Dixon et al., 2012, p. 411

Extended Summary

Is prejudice against social groups rooted in intergroup distinctions or in the groups' low status? Whereas much research has focused on the former idea, this dissertation examines the latter. This form of prejudice is of particular concern as it puts members of disadvantaged groups at further disadvantage through prejudice and discrimination targeted against them. To consider this form of prejudice, I propose incorporating status bias, the tendency to prefer high-status groups over low-status groups, into prejudice research. Building on Social Dominance Theory, I conceptualize status bias as rooted in objective group status, consistent with the idea that it reinforces actual group-based inequalities. Throughout seven empirical studies using various study designs and methods, this dissertation examines status bias and its contributions to two major issues in prejudice research: the ideological foundations of prejudice and its reduction through intergroup contact. The results demonstrate that status bias forms group evaluations jointly with other biases and varies in its strength across evaluations of different kinds of target groups. Moreover, distinguishing between status bias and ingroup bias is promising for the study of the ideological foundations of prejudice, particularly SDO and RWA. Both ideologies were previously thought to motivate ingroup bias; however, this research did not differentiate it from status bias. The results reveal that SDO was not associated with stronger ingroup bias; instead, it was associated with stronger status bias, suggesting that incorporating the distinction between the biases into research on the ideological foundations of prejudice is a promising approach. Furthermore, distinguishing between status bias and ingroup bias can improve the assessment of the effectiveness of interventions to reduce prejudice. As such, intergroup contact was associated with weaker ingroup bias but stronger status bias. This pattern has previously been unobserved due to the lack of distinction between biases. Together, the findings demonstrate the merit of incorporating status bias into different fields of prejudice research.

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Chapter 1. Group-Based Inequalities: Introduction

Many societies are facing fundamental challenges due to high – and often rising – levels of economic inequality (Piketty & Saez, 2014; Wilkinson & Pickett, 2010). These inequalities are accompanied by a range of social problems, including poorer health, higher rates of homicides, lower life satisfaction, and reduced trust (Pickett et al., 2024; Wilkinson & Pickett, 2010). Inequalities are not randomly distributed among individuals; they are group-based. Members of certain social groups have more resources at their disposal than members of other social groups. They possess more (political) power, are more likely to be hired for a job, and the like (Sidanius & Pratto, 1999). As such, higher levels of economic inequality are accompanied by more pronounced gender and race disparities (Pickett et al., 2024). The median wealth of European Americans is 9.2 times higher than that of African Americans (Kochhar & Moslimani, 2023).

Group-based inequality is the unequal distribution of power between social groups, while power is the asymmetric control over valued resources such as wealth, status, good health, or high levels of education (Magee & Smith, 2013; Sidanius & Pratto, 1999). According to Social Dominance Theory (Sidanius & Pratto, 1999), the extent of group-based inequalities varies across societies and over time. They are produced and maintained at different levels of social organization: at the system-wide level through legitimizing myths and social institutions, at the intergroup level through asymmetrical group behavior and social contexts, and at the personal level through ideologies, orientations, and – the focus of this dissertation – individual discrimination (Sidanius & Pratto, 2012).

Group-based inequalities are thought to result in discrimination of groups at the bottom of the social hierarchy: It systematically puts certain individuals at a further disadvantage through discrimination based on their group memberships (Pratto et al., 2006; Sidanius & Pratto, 1999, 2012). Social Dominance Theory highlights that discrimination serves to maintain

unequal intergroup relations. Racism, sexism, classism, and other group-based evaluations and discriminations can be understood as "particular instantiations of a more general process through which dominant groups establish and maintain social, economic, and military supremacy over subordinate groups" (Sidanius et al., 2017, p. 149). Therefore, it has been argued that intergroup evaluations and behaviors cannot be fully understood without considering group-based dominance (Badaan & Jost, 2020).

The discrimination of low-status groups is to some extent consensual: negative associations, stereotypes, and evaluations of these groups are often shared even among their members (Hagendoorn, 1995; Rubin & Hewstone, 2004). Social Identity Theory (Tajfel & Turner, 1979) has elaborated on options for members of groups at the bottom of the social hierarchy to cope with their stigmatized group identity. Depending on whether they perceive the social hierarchy as legitimate and group boundaries as permeable, they may either seek social change or disidentify with their social groups.

Some approaches do recognize group-based inequalities in the study of prejudice, emphasizing its function of keeping disadvantaged groups in their position (Badaan & Jost, 2020; Hodson, 2021) and recognizing that "'punching up' is not the same as 'punching down'" (Hodson, 2021, p. 941). However, despite this acknowledgement, the form of prejudice that is based on group status is often overlooked. Large parts of the study of prejudice fall into the field of intergroup relations, which, as the name suggests, focuses on intergroup dynamics and group distinctions as the primary interpretative framework. As such, prejudice research has often been approached with the goal of reducing outgroup prejudice and enhancing intergroup liking (Pettigrew & Tropp, 2006), sometimes examining prejudice broadly without considering the context of group-based inequalities (e.g., Brandt & Crawford, 2020). Thus, whereas the form of prejudice grounded in group distinctions (i.e., ingroup bias; Hewstone et al., 2002) has

been extensively described and studied, the form of prejudice grounded in group status falls far behind.

Throughout this dissertation, I propose incorporating status bias into prejudice research: the tendency to prefer high-status groups over low-status groups. This bias reflects the prejudice that is rooted in group-based inequalities. It is therefore distinct from ingroup bias, which reflects prejudice rooted in group distinctions. Incorporating status bias into prejudice research acknowledges existing group-based inequalities and quantifies their impact on prejudice.

Overview of the Dissertation

In this dissertation, I am introducing a refined conceptualization and measurement of status bias, enabling the quantification of its strength in comparison to other biases. Then, I incorporate status bias into research on the ideological foundations of prejudice and its reduction through intergroup contact. This dissertation includes three empirical chapters with a total of seven empirical studies to test hypotheses derived from the notion of status bias. The studies include cross-sectional and longitudinal study designs, as well as a vignette experiment, and use data from various sources, including representative surveys with a large number of participants.

Results indicate that prejudice is formed by multiple biases jointly. The strengths of biases varied across different measurements of prejudice and across different kinds of groups that were evaluated. Furthermore, higher levels of Social Dominance Orientation were associated with stronger status bias, providing insights into the ideological foundation of status bias. Moreover, intergroup contact was associated with weaker ingroup bias but stronger status bias, particularly for belief-indicative groups. This pattern has been overlooked in previous research where status bias was not addressed.

Table 1.1

Central Findings of the Empirical Chapters

Chapter 3: Multiple Forms of Prejudice? Ingroup Bias, Status Bias, and Similarity-Attraction as Distinct Biases Shaping Group Evaluation (Collaborator: Klaus Boehnke)
• Multiple biases form group evaluation. • Status Bias is distinct from ingroup bias and similarity-attraction. • The strengths of the biases vary across studies and across the evaluation of different kinds of groups.
Chapter 4: Ideological Foundations of Ingroup Bias and Status Bias (Collaborator: Lusine Grigoryan)
• Status bias is motivated by SDO, although not robustly in one of two studies. • Ingroup bias is not motivated by RWA.
Chapter 5: Friends Without Benefits? Contact Does Not Predict Weaker Status Bias
• Overall, contact is associated with weaker ingroup bias, but stronger status bias • This applied in particular to the evaluation of belief-indicative groups.

Together, the studies demonstrate that incorporating status bias into prejudice research can unravel novel insights with major implications for our understanding of what motivates prejudice and how prejudice can be reduced. Not addressing status bias conveys the risk of misinterpreting findings and employing interventions that turn out to be ineffective. A rigorous addressing of status bias, in contrast, provides a more nuanced understanding of prejudice with

implications for its ideological foundations, its reduction, and potentially further areas of prejudice research. Table 1.1 summarizes the central findings of the empirical chapters.

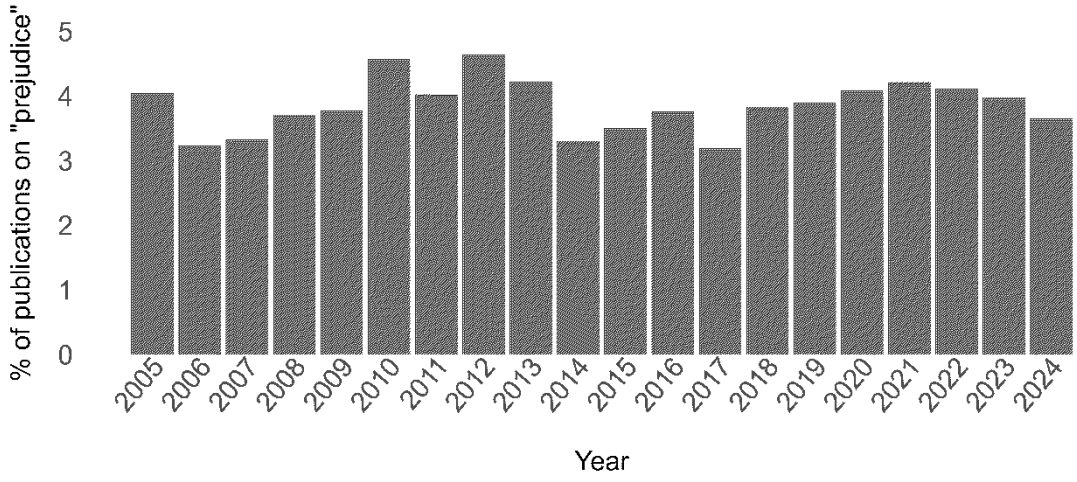
The dissertation is structured as follows. Chapter 2 introduces the theoretical background and proposes a refined conceptualization and measurement of status bias. Chapter 3 elaborates on a perspective from which prejudice is formed by multiple biases, which vary in their strengths. Next, status bias is incorporated into research on the ideological foundations of prejudice in Chapter 4 and into research on prejudice reduction through intergroup contact in Chapter 5. Finally, Chapter 6 summarizes the findings and discusses the broader implications of the notion of status bias for prejudice research.

Chapter 2. The Tendency to Prefer High-Status Groups

The scientific study of prejudice has a long history and was accelerated in the aftermath of WWII with Allport's (1954) famous analyses of "The Nature of Prejudice" and Adorno's (1950) analyses of "The Prejudiced Personality". Ever since, prejudice has remained a crucial topic in Social Psychology. Across the past 20 years, between 182 and 450 papers have been published in the field of social psychology on this topic, contributing to 3-5% of all research in the field (see Figure 2.1).

Figure 2.1

Number of Papers Published in Social Psychology on Prejudice from 2005 to 2024



Note. Retrieved January 25, 2025, from Web of Science.

Defining Prejudice

The term "prejudice" seems relatively straightforward at first glance, as it is often used in everyday language with a general understanding of its meaning. However, the scientific community has not fully agreed on its precise definition. The minimal definition of prejudice is simply that of a pre-judgment made about a social group or a person based on their group membership (American Psychological Association, n.d., b.). Some definitions additionally require this judgment to be negative or unfair (Association, n.d., a.; Jackson, 2020; Stangor,

2015), false (Allport, 1954; Oxford University Press, n.d.), or targeted at marginalized groups or maintaining status relations between groups (Dixon et al., 2012; Dovidio et al., 2010; Hodson, 2021). Prejudice is typically not explicitly defined as being targeted at outgroups (but see, e.g., Ibáñez et al., 2009); however, this addition is often implied (Bergh et al., 2016), grounded in the extensive focus on intergroup distinctions in the field (Allport, 1954; Pettigrew & Tropp, 2006; Tajfel & Turner, 1979). As such, in empirical studies it is common practice to remove the members of target groups from the sample of participants to ensure the assessment of outgroup prejudice.

Thus, more than seven decades after Allport's (1954) seminal work, the nature of prejudice is still contested. The variety of prejudice definitions form the impression that researchers aim to incorporate its problematic nature into its definition, but they disagree about what is problematic about prejudice. For instance, some argue that negativity itself is problematic (Brandt & Crawford, 2020), while others propose that it is only problematic to the extent that it is targeted at marginalized groups or to the extent that it maintains status relations between groups (Hodson, 2021). To facilitate a discussion of the problematic nature of prejudice separately from its definition, I will use the minimal definition of prejudice throughout this dissertation: a pre-judgment made about a social group or a person based on their group membership. I will use it as equivalent to the term "group evaluation" to stress its minimal definition.

Ingroup Bias

Prejudice research is strongly focused on intergroup distinctions (Bergh et al., 2016), with influential theories and approaches such as social identity theory (Tajfel & Turner, 1979) and intergroup contact (Allport, 1954; Pettigrew & Tropp, 2006) stressing the importance of distinguishing between ingroups and outgroups. As such, a great number of studies concerning prejudice examine ingroup bias (or: intergroup bias), the "systematic tendency to evaluate one's

own membership group (the in-group) or its members more favorably than a nonmembership group (the out-group) or its members" (Hewstone et al., 2002, p. 576).

Ingroup bias has been described as functional in promoting a favorable view of oneself and one's group (Abrams & Hogg, 1988; Tajfel & Turner, 1979). Moreover, it has been argued that ingroup bias serves to avoid potential conflicts with outgroups (Schaller & Neuberg, 2012), and to validate one's cultural worldview (Solomon et al., 1991). Ingroup bias has received overwhelming empirical support (for a review, see Hewstone et al., 2002), even emerging in minimal groups where the distinction between ingroup and outgroup is based on a neutral criterion such as randomly assigned colors. Ingroup bias has been found to be driven more by ingroup positivity than by outgroup negativity (Brewer, 1999). While blatant assaults are probably not caused by ingroup positivity alone, everyday discrimination (e.g., choosing a job applicant) does not require outgroup negativity.

Despite the merit of acknowledging group distinctions for understanding intergroup relations, strong arguments have been made that prejudice is particularly problematic when targeted at disadvantaged groups, thereby maintaining group-based inequalities (Dixon et al., 2012; Hodson, 2021; Sidanius & Pratto, 1999). This qualification, I propose, is not sufficiently addressed in the study of ingroup bias. The context of inequality in which intergroup relations are embedded is often mentioned, sometimes addressed, and rarely measured. This is despite its high relevance for the field, as group-based inequalities are thought to generate prejudice and prejudice is thought to reinforce group-based inequalities (Sidanius & Pratto, 1999). It has been argued that it is crucial to consider these inequalities (Dixon et al., 2012; Hodson, 2021) and I suggest that incorporating status bias into prejudice research is a promising way of doing so.

Addressing Status Bias

Evidence has accumulated for a form of prejudice rooted in group-based inequalities: status bias – the tendency to prefer high-status groups over low-status groups. This section reviews the evidence and proposes a refined conceptualization and measurement of status bias.

Group Status and Group Evaluation

Previous research suggests that groups are evaluated based on their status. Various models in the field of social cognition have proposed that groups are readily perceived and evaluated along a horizontal dimension of warmth and communion and a vertical dimension of competence and agency (Abele et al., 2021; Abele & Wojciszke, 2014; Fiske et al., 2002; Koch et al., 2016; Leach et al., 2007; Yzerbyt & Corneille, 2005). The horizontal dimension relates to perceptions of the group's intentions and is informative about the potential to 'get along'. The vertical dimension relates to the group's (prerequisites for gaining) valued resources and is informative about its capacity to 'get ahead'. These two dimensions are fundamental in the perception of social groups as they are informative about their willingness and capacity to promote or impede one's goals. The vertical dimension is predicted by perceptions of socioeconomic group status (Fiske et al., 2002) and is therefore more consensual (Yzerbyt & Cambon, 2017). This line of research indicates that people readily perceive the status of social groups and evaluate them accordingly. Ingroup membership is typically not considered in this work, but importantly, this implies that group status emerged as relevant for evaluation irrespective of ingroup bias.

The notion that groups are evaluated based on their status, irrespective of whether the evaluating individual is a member of the group or not, has been supported by research on prejudice dimensions. Prejudice dimensions were identified by applying factor-analytical approaches to evaluations of a variety of target groups. Bergh et al. (2016, study 7) have found support for a high-status (e.g., CEOs, Dutch-Americans) and a low-status (e.g., Wall-Street

protesters, Colombian-Americans) prejudice dimension using confirmatory factor analysis. Bergh and Brandt (2022) derived three dimensions through exploratory and confirmatory factor analysis: prejudice against marginalized groups, privileged/conservative groups, and unconventional groups. Prejudice against privileged/conservative groups and unconventional groups was found to be endorsed by individuals with opposing ideologies. The factor-analytical approach provides additional support for the idea that group status is a relevant dimension by which social groups are evaluated. Again, this research does not account for shared group memberships, indicating that group status emerged as a relevant prejudice dimension irrespective of group boundaries.

In sum, these findings suggest that group evaluations rely on group status. Notably, the research reviewed here did not distinguish between evaluations of ingroups and outgroups, suggesting that evaluations based on group status cross-cut group boundaries: Individuals evaluate groups based on their status, irrespective of whether they are ingroups or outgroups. These findings suggest that status bias is a form of prejudice distinct from ingroup bias.

Asymmetrical Ingroup Bias

Despite the findings reported in the previous section, the relevance of status for group evaluation has primarily been studied and interpreted within the framework of intergroup distinctions. More specifically, group status has been studied as a moderator of ingroup bias: Ingroup bias is typically stronger for high-status groups, while low-status groups often exhibit weaker ingroup bias, no ingroup bias, or even outgroup favoritism (Bettencourt et al., 2001; Pratto et al., 2006; Tajfel & Turner, 1979). Group status moderates ingroup bias across a variety of social groups (for a review see Bettencourt et al., 2001), including racial groups (Hailey & Olson, 2013) and education-based groups (Kuppens et al., 2018), as well as for implicit (Dasgupta, 2004; Newheiser et al., 2014) and explicit (Hailey & Olson, 2013) biases. When group boundaries are perceived as impermeable and illegitimate (Tajfel & Turner, 1979), and

when collective self-esteem is high (Li et al., 2021), low-status groups may show stronger ingroup bias. This, however, is rather the exception than the norm. Typically, high-status groups show stronger ingroup bias than low-status groups (Bettencourt et al., 2001), a phenomenon also known as asymmetrical ingroup bias (Pratto et al., 2006).

I suggest that considering status bias merely as a moderator of ingroup bias poses major limitations to the study of prejudice. It implies a dependency on ingroup bias, whereas status bias should be understood, studied, and interpreted as a form of prejudice distinct from ingroup bias. Studying status bias as a dependency of ingroup bias restricts it to intergroup comparisons. Yet, status bias can be present when evaluating multiple outgroups (preferring high-status outgroups over low-status outgroups), or multiple ingroups (preferring high-status ingroups over low-status ingroups).

The empirical findings of asymmetrical ingroup bias are compatible with the idea that ingroup bias and status bias are two distinct biases that jointly form prejudice. For high-status groups, both biases form group evaluation, leading them to prefer their high-status ingroups over low-status outgroups. For low-status groups, the biases have diverging implications for group evaluation: ingroup bias would in this case lead to the preference of the low-status ingroup over the high-status outgroup, while status bias would in this case lead to the preference of the high-status outgroup over the low-status ingroup. When these two biases jointly form evaluations, they can result in different patterns of preference, depending on the strength of both biases; they can result in a preference for the low-status ingroup, the high-status outgroup, or no preference in case both biases are equally strong.

Distinction Between Ingroup Bias and Status Bias

Only relatively recently have researchers begun to explicitly address the distinction between ingroup bias and status bias. As such, Grigoryan et al. (2023) used vignette studies to test whether various social groups are evaluated based on ingroup bias or status bias. They

distinguished between "status-indicative groups" (e.g., educational groups), which indicate their members' status, and "belief-indicative groups" (e.g., Christians), which are indicative of their members' beliefs. They found that for status-indicative group memberships, high-status groups were preferred over low-status groups irrespective of participants' own group memberships. For belief-indicative groups, they found that participants preferred their own membership groups over non-membership groups. These studies suggest that whether individuals show preferences for their ingroups or high-status groups depends on the kind of group being evaluated. These studies make a strong case for considering group status in prejudice research, as well as distinguishing between different kinds of groups. However, similar to previous research on asymmetrical ingroup bias, they attributed patterns of preferences to the dominant bias instead of assessing the strengths of the biases.

Bergh et al. (2016) created scenarios in which ingroup bias and status bias made conflicting predictions. For example, they assessed prejudice against high-status and low-status outgroups and found evidence for status bias, as high-status outgroups were preferred over low-status outgroups (Study 5). Furthermore, they compared the factor structure of the evaluation of various marginalized groups between individuals who belonged to one of the groups and those who did not belong to any group (Studies 2,3,4). They found that the factor structure was similar and concluded that commonalities among prejudices (i.e., generalized prejudice) are grounded more in status bias than ingroup bias. These studies stress the importance of considering group status in prejudice research. However, they observed only commonalities among prejudices without assessing the actual strengths of ingroup bias and status bias.

All in all, a direct assessment of the strengths of ingroup bias and status bias would contribute to their distinction but has, to my knowledge, so far been unseen in previous research. The differential impact of group memberships and group status on group evaluation should be separated to gain more nuanced insights into the composition of prejudices. From the

perspective that ingroup bias and status bias jointly form group evaluations, I propose that their strengths can and should be assessed empirically. Moreover, researchers have ascribed status to social groups, mostly as dichotomously high or low. This obscures gradual status differences between groups: a comparison of a high- and low-status group can involve two groups that differ either barely or greatly in their status. Evaluative differences between groups based on their status may be larger when status differences are larger. Addressing these crucial points, I suggest a definition of status bias and discuss implications for its measurement in the following sections.

Defining Status Bias

The form of prejudice grounded in group status has been given various names in the literature, such as the "preference for higher status" (Grigoryan et al., 2023, p. 1), "high-status group favoritism" (Levin et al., 2002, p. 144), or "prejudice against marginalized groups" (Bergh & Brandt, 2023, p. 99). As reported throughout this chapter, one major challenge in studying this form of prejudice is its lack of differentiation from ingroup bias. Therefore, in distinction to ingroup bias, I refer to the tendency to prefer high-status groups over low-status groups as "status bias".

Status bias is considered a proper bias distinct from ingroup bias. This notion implies a perspective from which prejudice is shaped by multiple biases. From this perspective, the biases are considered evaluative *tendencies* that can result in certain observable *patterns* of group evaluation. Their strengths determine the extent to which evaluations of social groups are favorable or unfavorable, potentially jointly with other biases. As such, the empirical finding of outgroup favoritism by low-status group members is best interpreted not as the absence of ingroup bias but as status bias outweighing ingroup bias. In other words, from this perspective of multiple biases shaping group evaluation, the observation of outgroup favoritism indicates

that ingroup bias was weaker than status bias in that particular situation. Status bias and ingroup bias are thus conceptually different from the observed pattern of group evaluation.

It should be noted that "status" here refers to actual unequal distribution of resources and power between social groups, as opposed to subjective social status. Only in this way does it capture actual group-based inequalities, align with theoretical accounts (Jost et al., 2004; Sidanius & Pratto, 1999), and remain conceptually and empirically distinguishable from ingroup bias.

Measuring Status Bias

Observable patterns of group evaluations are typically attributed to certain biases, such as ingroup bias. I propose that to make inferences, biases should be measured directly to avoid misattribution. The direct measurement of biases that are thought to jointly form group evaluation has great advantages over merely attributing the observed evaluative pattern to specific biases. The latter is a matter of interpretation which could be misguided. For example, the finding of strong ingroup preferences among high-status groups is frequently attributed to ingroup bias with a narrative of general tendencies to prefer ingroups over outgroups. The reviewed research suggests that part of this preference, however, reflects the tendency to prefer high-status groups. When this is so, this prejudice based on group-based inequalities is at risk of being misattributed to general ingroup preferences. With an empirical distinction between the two biases, such attributions no longer need to be left to interpretation. I suggest that the strengths of the biases should be measured to gain more insights into the nature of prejudice.

The empirical distinction of status bias and ingroup bias is challenging. This is partly because ingroup bias and status bias are sometimes redundant; they go hand in hand for high-status groups evaluating low-status groups, which is a common research scenario. That is, when high-status group members are asked to evaluate their high-status ingroup and a low-status outgroup, ingroup bias and status bias would both lead them to prefer their high-status ingroup

over the low-status outgroup. In the case of low-status groups, ingroup bias would lead them to prefer their low-status ingroup and status bias would lead them to prefer the high-status outgroup. Thus, for them, ingroup bias and status bias diverge, and may result in no preference, a (weak) preference for the low-status ingroup over the high-status outgroup, or vice versa. Therefore, assessing prejudice among high-status groups toward low-status groups is not sufficient. A clear distinction between ingroup bias and status bias requires the assessment of the evaluations of groups with various status levels by members of groups with various status levels.

For the evaluation of multiple groups, the relative strengths of ingroup bias and status bias can be measured. The strength of ingroup bias can be measured by predicting group evaluation with shared group membership: whether the evaluating participant is a member of the target group. The strength of status bias can be measured by predicting group evaluation with group status: the objective status a group holds in the particular society. This method allows for the direct measurement of the extent to which group evaluation is based on group membership and group status. In this way, ingroup bias and status bias can be empirically distinguished in their coexistence. The measurement of status bias is a crucial necessity for its integration into prejudice research as a proper bias.

Incorporating Status Bias into Prejudice Research

The notion of status bias provides an opportunity to inherently incorporate group-based inequalities into prejudice research. Theoretical considerations and empirical findings suggest that status bias should be considered a bias distinct from ingroup bias. Yet, its distinction from ingroup bias has been explicitly addressed in only a few studies, each with their limitations. Moreover, no prior research has addressed status bias as grounded in actual and gradual group-based inequalities. Without a clear distinction between biases, particularly ingroup bias and status bias, prejudice is at risk of being misattributed to intergroup distinctions when it is

actually rooted in group status. Chapter 3 further contributes to the theoretical and empirical distinction between status bias and two other biases: ingroup bias and similarity-attraction. Moreover, the notion of status bias has major implications for two key areas of prejudice research in particular: the ideological foundations of prejudice (Chapter 4) and the reduction of prejudice through intergroup contact (Chapter 5).

Ideological Foundations of Prejudice

I propose that distinguishing between ingroup bias and status bias has the potential to advance research on the ideological foundations of prejudice. The two most substantial and elaborated ideological foundations of prejudice are Social Dominance Orientation and Right-Wing Authoritarianism (Cowling et al., 2019; Duckitt & Sibley, 2009). Social Dominance Orientation (SDO; Pratto et al., 1994) originates from Social Dominance Theory (Sidanius & Pratto, 1999) and refers to an individual's preference for group-based inequality and group-based domination. Right-Wing Authoritarianism (RWA; Adorno et al., 1950; Altemeyer, 1998) was initially conceptualized when psychologists sought to understand the Nazi "German mentality" and was later developed to encompass three dimensions: submission to authorities, aggression against deviant groups and "outsiders," and conventional attitudes. SDO and RWA have been extensively studied as ideological foundations of prejudice. High levels of SDO and RWA typically go hand in hand with higher levels of prejudice, and their contributions to explaining prejudice appear to be distinct rather than redundant (Altemeyer, 1998; Anderson & Ferguson, 2018; Sibley et al., 2006).

A theoretical model of great importance in the study of SDO and RWA is the dual-process motivational model of prejudice (Duckitt & Sibley, 2009). Within this model, the personality trait of tough-mindedness, along with the social context of resource scarcity, inequality, and competition facilitate the development of competitive world beliefs. These beliefs motivate SDO, which in turn, predicts prejudice and other intergroup attitudes through

competitiveness over relative group superiority and power. Within the other process, the personality traits of low openness and high conscientiousness, along with the social context of danger and threat, facilitate the development of dangerous world beliefs. These beliefs motivate RWA, which, in turn, predicts prejudice and other intergroup attitudes through perceived social threat.

Ideological foundations of prejudice have typically been studied without distinguishing between ingroup bias and status bias. In fact, the dual process model has treated prejudice as outgroup prejudice, particularly toward low-status groups, without allowing for a differentiation between ingroup bias and status bias. Consequently, most empirical tests of the dual-process model have focused on the evaluation of low-status outgroups or have not reported the extent to which the evaluated groups were outgroups to the participants. Only a few studies have examined how SDO and RWA motivate prejudice against low- versus high-status outgroups (Asbrock et al., 2010; Cantal et al., 2015; Cohrs & Asbrock, 2009; Duckitt & Sibley, 2007), but a clear distinction between ingroup bias and status bias is still lacking.

The distinction between ingroup bias and status bias has the potential to contribute to research on the ideological foundations of prejudice, as it differentiates between distinct forms of prejudice. In line with their theoretical conceptualizations, RWA can be expected to primarily motivate ingroup bias, whereas SDO can be expected to primarily motivate status bias. The distinction between ingroup bias and status bias, as elaborated in this dissertation, is promising for bringing novel insights into the distinct forms of prejudice that RWA and SDO motivate. Chapter 4 examines how RWA and SDO differentially motivate ingroup bias and status bias, enhancing our understanding of the ideological foundations of prejudice and further contributing to the distinction between ingroup bias and status bias.

Prejudice Reduction through Intergroup Contact

Another major area of prejudice research that I suggest could benefit from a distinction between ingroup bias and status bias is prejudice reduction through intergroup contact. In his seminal work The *Nature of Prejudice*, Gordon Allport (1954) formulated the contact hypothesis: positive personal contact experiences with an outgroup member can generalize to more positive attitudes toward the outgroup as a whole. Further research has expanded the contact hypothesis into a full-fledged contact theory (Pettigrew, 1998). A comprehensive meta-analysis has found strong support for the relationship between intergroup contact and lower levels of prejudice (Pettigrew & Tropp, 2006). In its further advancements, research has thoroughly examined whether contact affects prejudice against groups that are not directly involved in the contact situation (the secondary-transfer effect; Pettigrew, 2009), whether imagined contact is sufficient to reduce prejudice (e.g., Crisp & Turner, 2012), and whether the prejudice-reducing effects of positive contact are distinct from the prejudice-increasing effects of negative contact (e.g., Paolini et al., 2024).

One major challenge in studying the effects of intergroup contact on prejudice is its bidirectional causality, known as the causal sequence problem: not only does intergroup contact reduce prejudice, but prejudice also decreases the willingness to engage in intergroup contact (Pettigrew & Tropp, 2006). While cross-sectional studies typically provide strong support for the association between intergroup contact and prejudice, longitudinal and experimental studies do not always replicate this finding, emphasizing the need for such research designs (Friehs et al., 2024; Guffler & Wagner, 2017; Hodson & Meleady, 2024; Paluck et al., 2019; Reimer et al., 2022; Wölfer et al., 2016),

Already in the early stages of the contact hypothesis, status was considered an important factor (Allport, 1954). One of four conditions deemed necessary for intergroup contact to reduce prejudice was that individuals should have equal status. However, its consideration was

largely limited to the roles that the individuals involved take in the contact situation. While Pettigrew (1998) acknowledged that power differences between social groups impact the equal-status condition, he assumed that societal norms supporting intergroup harmony would be sufficient to establish equal-status contact. Group-based inequalities outside the contact situation received little rigorous attention in this early work.

In its more recent development, intergroup contact has been criticized for focusing solely on improving intergroup harmony, whereas the ultimate goal should be to reduce group-based inequalities. In other words: "The question that we need to ask is not so much whether contact leads us to like outgroup members, but whether liking outgroup members is the way to get rid of prejudice" (Reicher, 2012, p. 41). This critique has brought forward research exploring how intergroup contact effects attitudes towards social change (Reimer & Sengupta, 2023) and the conditions under which intergroup contact fosters social change toward greater group-based equality (Hässler et al., 2021).

Intergroup contact may also impact social change through reducing or enhancing status bias. Addressing the effects of intergroup contact on status bias can help to understand whether contact attenuates or enhances group-based inequalities through prejudice. Research on intergroup contact could therefore greatly benefit from differentiating between ingroup bias and status bias, as this distinction can provide insights into which form of prejudice it is capable of reducing. When prejudice in a certain context is primarily rooted in low group status, we currently do not know whether intergroup contact is an effective intervention to address it. Without such knowledge, intergroup contact interventions risk being ill-informed and potentially ineffective. Ideally, we would first identify whether the primary issue in a specific group context is ingroup bias or status bias, and then select an intervention tailored to address it. In Chapter 5, I present the first empirical evidence on how intergroup contact differentially affects ingroup bias and status bias.

Overview of the Empirical Chapters

The strong focus on group distinctions in prejudice research risks attributing any evaluative patterns to ingroup-outgroup behavior and failing to acknowledge prejudice rooted in group-based inequalities. This can result in the dismissal of such prejudice throughout the research process, including the research questions, study designs, interpretation of results, and implications of studies. The notion of status bias, as distinct from ingroup bias, can help in accurately attributing prejudice to group distinctions and group-based inequalities. The incorporation of status bias into prejudice research is, therefore, highly relevant throughout the research process. It has the potential to enrich prejudice research and efforts to reduce prejudice by providing a more nuanced understanding of prejudice. Against this background, rigorous engagement with status bias as a distinct form of prejudice is lacking. This dissertation aims to fill this research gap by incorporating status bias into prejudice research throughout seven studies. By doing so, group-based hierarchies find inherent consideration in prejudice research and interventions. The following three chapters present seven empirical studies conducted to gain insights into status bias as a form of prejudice distinct from ingroup bias, as well as into its ideological foundation, and potential reduction through intergroup contact. Together, they contribute to incorporating status bias into major areas of prejudice research.

Two major obstacles to addressing this research gap are the insufficiently developed conceptual distinction of status bias from ingroup bias, and the difficulty of empirically disentangling the two biases. Therefore, this dissertation advances the conceptual distinction between ingroup bias and status bias throughout all chapters and employs methods in the empirical chapters (Chapter 3–5) that allow for their effects to be distinguished empirically. All in all, the current dissertation takes a first step in incorporating status bias into prejudice research. More precisely, I address the research gap concerning the lack of consideration of status bias by distinguishing status bias from other biases conceptually and empirically (Chapter

3) and incorporating this distinction into the study of ideological foundations of prejudice (Chapter 4) and prejudice reduction through intergroup contact (Chapter 5).

Throughout the dissertation, I also address related aspects that have been shown to be relevant to the present topic: In Chapter 3, I address similarity-attraction, the tendency to prefer similar groups over dissimilar groups. As the literature reviewed in this chapter indicates, similarity in ideology (Bergh & Brandt, 2022), status, and beliefs (Koch et al., 2016) is a relevant aspect in group evaluation. Moreover, I distinguish between belief-indicative and status-indicative groups (Grigoryan et al., 2023) in Chapters 3 and 5. As the literature reviewed in this chapter indicates, status bias and ingroup bias may operate differently for belief-indicative and status-indicative groups.

Theoretical Model

The theoretical model underlying this dissertation is presented in Figure 2.2. Ingroup bias is represented by the path from shared group membership to group evaluation. When the evaluating person shares group membership with the target group or individual – meaning they are evaluating an ingroup – group evaluation is expected to be more favorable than when group membership is not shared (i.e., when evaluating an outgroup). Status bias is represented by the path from group status to group evaluation. The status of the evaluated group, in terms of its members' average access to valued resources, is expected to impact group evaluation such that higher status is associated with more favorable evaluations. Chapter 3 investigates ingroup bias and status bias in evaluating belief-indicative and status-indicative groups, and additionally tests the impact of value similarity. Status bias, ingroup bias, and similarity-attraction are all expected to exert distinct effects on group evaluation. A selection of central hypotheses tested in Chapter 3 is shown in Table 2.1. This chapter advances the perspective of prejudice as being formed by multiple biases.

Figure 2.2

Theoretical Model: Ingroup Bias and Status Bias Form Group Evaluations Jointly

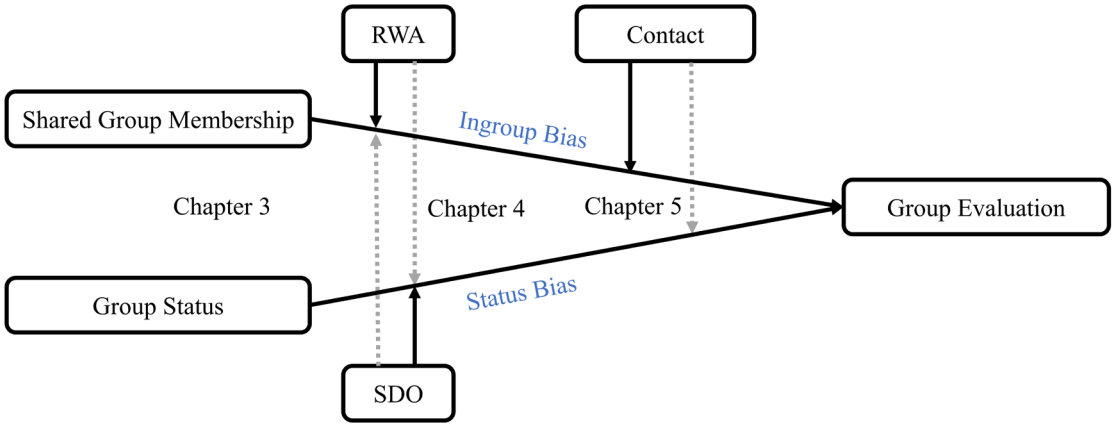


Table 2.1

Overview of Central Hypotheses Tested in Chapter 3 (Selection)

Chapter 3: **Multiple Forms of Prejudice? Ingroup Bias, Status Bias, and Similarity-Attraction as Distinct Biases Shaping Group Evaluation**	
Abbr.	**Hypothesis**
H1	Shared group membership predicts more favorable group evaluations (ingroup bias)
H2b	Value similarity predicts more favorable group evaluations beyond ingroup bias (similarity-attraction)
H3b	Group status predicts more favorable group evaluations beyond ingroup bias (status bias)

Table 2.2

Overview of Central Hypotheses Tested in Chapter 4 (Selection)

Chapter 4: Ideological Foundations of Ingroup Bias and Status Bias	
Abbr.	**Hypothesis**
H1c	The relation between shared group membership and group evaluations is moderated more strongly by RWA than SDO
H2c	The relation between group status and group evaluations is moderated more strongly by SDO than RWA.

Prejudice is differentially motivated by RWA and SDO. The presented theoretical model allows for the distinction between the effects of RWA and SDO on ingroup bias and status bias. This is represented by the paths from RWA and SDO, which moderate the effects of shared group membership and group status on group evaluation. Given their distinctiveness as rooted in shared group membership and group status, ingroup bias and status bias are expected to be motivated differently by RWA and SDO. Ingroup bias is expected to be motivated by RWA more than by SDO, whereas status bias is expected to be motivated by SDO more than by RWA. Chapter 4 investigates the associations of RWA and SDO with ingroup bias and status bias, thereby incorporating status bias into research on the ideological foundations of prejudice. A selection of central hypotheses tested in Chapter 4 is shown in Table 2.2.

Intergroup contact is extensively studied as an intervention that potentially reduces prejudice. The present theoretical model allows for testing its distinct impact on ingroup bias and status bias. This distinct impact is reflected in contact moderating the effects of shared group membership and status bias on group evaluation. Contact is expected to reduce ingroup

Table 2.3

Overview of Central Hypotheses Tested in Chapter 5 (Selection)

Chapter 5: **Friends Without Benefits? Contact Does Not Predict Weaker Status Bias**	
Abbr.	**Hypothesis**
H3	Contact reduces ingroup bias, that is, it negatively moderates the effect of shared group membership on group evaluation
H4a	Contact does not reduce status bias, that is, it does not negatively moderate the effect of group status on group evaluation

bias more than status bias. Chapter 5 investigates the associations of contact with ingroup bias and status bias, thereby incorporating status bias into research on prejudice reduction efforts. A selection of central hypotheses tested in Chapter 5 is shown in Table 2.3.

Methodological Approach

Regarding the acknowledgment of status bias as a distinct bias, I have suggested a perspective on prejudice as being shaped by multiple biases. This is reflected in the theoretical model, where ingroup bias and status bias are represented by the paths from shared group membership and group status to group evaluation. The slopes of these relationships represent the strengths of the biases. To distinguish between ingroup bias and status bias, the methodological approach taken here involves assessing the evaluation of a variety of social groups, including high-status groups, low-status groups, as well as groups that are ingroups and outgroups to the study participants. This approach ensures empirical variation in group status and shared group memberships for distinguishing ingroup bias and status bias empirically. The approach of assessing evaluations of multiple groups has been used in prior research to examine the impact of similarity in political positions (Brandt & Crawford, 2020; Brandt et al., 2014)

and perceived group status on group evaluations (Brandt, 2017). However, shared group membership, has not found consideration in this research. In this dissertation, group evaluations of various social groups are regressed on shared group membership and group status to empirically distinguish between ingroup bias and status bias.

In the theoretical model, status bias is represented by regressing group evaluations on group status. The measurement of group status requires some elaboration. Status bias is rooted in actual group-based inequality, the differential access to valued resources and power across social groups (Sidanius & Pratto, 1999). The operationalization of group status in previous research typically remains at the level of ascribing high or low status to various groups (e.g., Bergh et al., 2016; Paolini et al., 2024), or assessing perceptions of status differences (e.g., Brandt, 2017), which are at risk of being biased (Hauser & Norton, 2017; Sidanius & Pratto, 1999) and confounded with group evaluations (Son Hing et al., 2011). The measurement of actual group status thus remains superficial, relying either on status perceptions as a proximate measure or on categorizing group status into two or three levels. This is somewhat surprising, given the importance placed on the validity of measuring various constructs within social psychology.

Given that status bias is grounded in actual inequalities, which are not confined to just two or three categories, group status is *measured* in this dissertation. Group status is measured by calculating the average status of all group members identified in a representative survey. This results in a measurement of actual inequalities between groups that aligns with theoretical considerations. Objective group status is measured as the objective socioeconomic status of its members, operationalized as an index constructed from the highest level of education and household income, adjusted to account for household size. Group status, in terms of its members' average access to valued resources, has – to my knowledge – not been empirically assessed before in the context of prejudice research. I suggest that addressing status bias

benefits from quantifying status differences between groups and measuring evaluation as a dependency thereof. The measurement of group status allows for assessing the gradual nature of status bias: larger status differences could lead to larger biases. Binary distinctions between high- and low-status groups obscure such rather interesting patterns.

The Context: Germany

All seven studies presented in the empirical chapters were conducted in Germany, a country that has witnessed some of the world's most detrimental group conflicts in modern history. Nowadays, discriminatory potential within society is still high, with 18.1% to 34.1% of the population reporting agreement with blatantly racist statements, 7.2% to 16.5% reporting agreement with blatantly anti-Semitic statements, and 10.6% to 12.2% reporting agreement with blatantly sexist statements (Mokros & Zick, 2023). Overall, economic inequalities are at a high level, with the wealthiest 10% of the population possessing 56% of the total wealth (Statistisches Bundesamt (Destatis) et al., 2024), whereas 14% are in danger of poverty (Statistisches Bundesamt (Destatis), n.d.). This places Germany at an intermediate level in international comparison (Pickett et al., 2024). Group-based inequalities are considerable and particularly pronounced between religious groups, with Muslims receiving less income and holding lower educational degrees than Christians (see Chapters 3–5).

The empirical studies fall into a time when major societal and political events affected the everyday lives of the German population. The Covid-19 pandemic, with its first infections in January 2020, the invasion of Ukraine by Russia starting in February 2022, as well as the armed conflict between Israel and Hamas starting in October 2023, brought major changes, ranging from feelings of uncertainty to health issues to economic hardships caused by the shutdown of public life and rising inflation rates. Moreover, in 2015 and 2016, Germany received the highest number of refugees among all European Union member states, fleeing from the civil war in Syria or other hardships (Eurostat, 2017). This has fueled the political debate

around migration, resulting in the strengthening of the populist radical right party, 'Alternative für Deutschland' (Alternative for Germany, AfD). This trend has taken hold, with the AfD reaching a vote share of 10.3% in the elections of the German government in 2021 (Bundeswahlleiterin, 2021), catering to high political tensions. The empirical studies fall within this period of multiple crises.

Overview of Data, Study Designs, and Analyses

The empirical chapters of this dissertation provide novel insights into major areas of prejudice research by incorporating status bias. They draw on various study designs, analytical techniques, and datasets with a large number of participants. This section provides an overview of these methods.

Chapter 3 investigates the distinctiveness of status bias, ingroup bias, and similarity-attraction. It draws on two cross-sectional studies using the first wave of the German Social Cohesion Panel (SCP; n = 8,803; FGZ-Datenzentrum, 2022), a panel survey administered by the Research Institute Social Cohesion (RISC) in collaboration with the German Socio-economic Panel (SOEP), and its pilot study (n = 571; Gerlitz et al., 2024, p.; see Table 2.4). The strengths of ingroup bias, status bias, and similarity- attraction are analyzed using multilevel analyses, with group evaluations nested in persons. This chapter contributes to the conceptual and empirical distinction of status bias from other biases and assesses their comparative strengths for evaluating belief-indicative and status-indicative groups.

Chapter 4 incorporates the distinction between ingroup bias and status bias into the study of the ideological foundations of prejudice, specifically RWA and SDO. It draws on two longitudinal studies: the intake and final questionnaire of an experience sampling study (n = 210) and the first and third wave of the SCP (n = 6,845; see Table 2.5). The differential effects of RWA and SDO on ingroup bias and status bias are analyzed using Multilevel Structural Equation Modeling (Rabe-Hesketh et al., 2007). The differentiation between RWA and SDO

Table 2.4

Overview of the Data and Number of Participants by Study for Chapter 3

Chapter 3		
Multiple Forms of Prejudice? Ingroup Bias, Status Bias, and Similarity-Attraction as Distinct Biases Shaping Group Evaluation		
Study	**Data**	***n***
1	SCP Pilot Study and ESS 2016	571
2	SCP Wave 1	8,803

in motivating ingroup bias and status bias contributes to the incorporation of status bias into research on the ideological foundations of prejudice.

Chapter 5 incorporates the distinction between ingroup bias and status bias into the study of prejudice reduction via intergroup contact. It is composed of a cross-sectional study using the SCP pilot study (n = 589), a longitudinal study using Wave 1 and 3 of the SCP (n = 6,995), and a vignette study implemented in Wave 4 of the SCP (n = 3,007; see Table 2.6). The potential of intergroup contact to reduce ingroup bias and status bias is analyzed with multilevel regression models. This chapter incorporates status bias into research on prejudice reduction, providing insights into the potential of intergroup contact to reduce different biases.

Table 2.5

Overview of the Data and Number of Participants by Study for Chapter 4

Chapter 4		
Ideological Foundations of Ingroup Bias and Status Bias		
Study	**Data**	***n***
1	Experience Sampling Study and ESS 2022	210
2	SCP Waves 1 and 3	6,845

Table 2.6

Overview of the Data and Number of Participants by Study for Chapter 5

Chapter 5		
Friends Without Benefits? Contact Does Not Predict Weaker Status Bias		
Study	**Data**	***n***
1	SCP Pilot Study and ESS 2016	589
2	SCP Waves 1 and 3	6,995
3	SCP Vignette Experiment	3,007

Chapter 3: Multiple Forms of Prejudice? Ingroup Bias, Status Bias, and Similarity-Attraction as Distinct Biases Shaping Group Evaluation[1]

Abstract

Prejudice is often attributed to a particular bias (e.g., ingroup bias) without directly measuring it. We suggest that this practice leaves much room for interpretation and should instead be grounded in solid evidence, considering multiple biases. This study regards three biases: ingroup bias, similarity-attraction, and status bias. We employ direct measurements of the biases to test their empirical distinctiveness and strengths across the first wave of the German Social Cohesion Panel (Study 2) and its pilot study (Study 1). The results show that all three biases were distinct and that their strengths varied depending on the measure of group evaluation and the kind of target group. Moreover, the results provide the first evidence that status bias is grounded in actual group-based inequalities. The findings suggest that all three biases contribute to forming group evaluations. This perspective of multiple biases forming prejudice has implications for future prejudice research.

[1] This chapter is collaborative work with Klaus Boehnke, Constructor University, Bremen, Germany

The existence of multiple biases shaping group evaluation has been acknowledged, including ingroup bias (the tendency to prefer ingroups over outgroups; Hewstone et al., 2002), similarity-attraction (the tendency to prefer similar over dissimilar groups; Byrne, 1997), and what we call status bias (the tendency to prefer high-status over low-status groups; Bergh et al., 2016; Grigoryan et al., 2023; Sidanius & Pratto, 1999). However, the study of the three biases faces challenges that have yet to be overcome to test their strengths and distinctiveness. Distinguishing the biases is crucial for understanding how hierarchical intergroup relations intersect with cultural differences to shape prejudice. When prejudice is assessed, assumptions about which bias is involved should be based on solid evidence; however, such evidence is still in its infancy.

A rigorous differentiation of the three biases is yet pending, which, we suggest, is due to various challenges the field faces. First, researchers often infer the existence or strength of a specific bias (e.g., ingroup bias; Tajfel & Turner, 1979) from patterns of group evaluations; however, from the perspective we take, such patterns are shaped by multiple biases. For example, the ingroup preference of majority group members is likely shaped by ingroup bias *and* status bias. Instead of attributing patterns of group evaluation to specific biases, the biases should be measured directly. Second, most research on similarity-attraction and status bias relies on perceptions of similarities and group status. However, greater perceived similarities follow from positive evaluations (Morry, 2007; Sprecher, 2014), and perceived status does not reveal how evaluations are rooted in actual inequalities between groups (Sidanius & Pratto, 1999). Therefore, we propose that similarities and group status should be measured objectively to avoid bidirectional causality and to align with the theoretical foundations of the biases.

In the present research, we address these challenges by directly assessing the strengths of ingroup bias, similarity-attraction, and status bias, and by measuring objective value similarities and group status. In this way, the present study is the first to measure status bias

based on gradual actual group-based inequalities and test the biases' distinctiveness. We test their relative strengths across evaluations of status-indicative and belief-indicative groups.

Multiple Biases

Group evaluation is biased (e.g., Hewstone et al., 2002; Tajfel & Turner, 1979). Ingroup bias, similarity-attraction, and status bias are probably among the most fundamental biases of group evaluation. Ingroup bias is the most well-established one in social-psychological research (Hewstone et al., 2002). Similarity-attraction lies at its core but extends beyond group boundaries, as the extent to which one is similar to groups differs between various ingroups as well as outgroups (Byrne, 1997). Status bias is the least well-established of the three. Major theories of the field have noted such prejudice against disadvantaged groups (Jost et al., 2004; Sidanius & Pratto, 1999), but it was only within the past decade that it was directly measured for the first time (Bergh et al., 2016; Brandt, 2017; Grigoryan et al., 2023), although with certain limitations. This section discusses each of the three biases.

Ingroup Bias

Ingroup bias, or intergroup bias, is the "systematic tendency to evaluate one's own membership group (the in-group) or its members more favorably than a nonmembership group (the out-group) or its members" (Hewstone et al., 2002, p. 576). It has been thoroughly investigated and found robust across various social groups (for a detailed review, see Hewstone et al., 2002). Group membership involves categorizing oneself and others into ingroups and outgroups based on similarity in a particular trait. Therefore, ingroup membership can be seen as a special case of similarity that might bring about identification with the group. Motivations for ingroup bias are partly derived from group identification, such as the desire to see one's group favorably (Tajfel & Turner, 1979). Motivations for ingroup bias can also derive from similarities with other group members and dissimilarity with outgroup members, such as norm

similarity that promotes survival in small groups (Schaller & Neuberg, 2012) or the desire to validate and defend one's worldview.

Similarity-Attraction

Similarity-attraction is the tendency to prefer similar groups over dissimilar groups (Byrne, 1997). Similarity is gradual by nature and may comprise non-group-defining characteristics, so that similarity-attraction may explain why some outgroups (or ingroups) are preferred over others. The similarity-attraction phenomenon has received broad empirical support. The preference for similar others and groups has been found, among others, for values and attitudes (Montoya & Horton, 2013), status characteristics (Koch et al., 2020), the number of shared group memberships (Grigoryan, 2020), and political ideology (Brandt & Crawford, 2020). In the present research, we focus on value similarity, as this has been argued to particularly drive evaluations (Abele et al., 2021; Brandt & Crawford, 2020; Heine et al., 2006).

Status Bias

We define status bias as the tendency to prefer high-status groups over low-status groups, which emerges from actual power and resource differences between social groups. This phenomenon has been described elsewhere as the "preference for higher status" (Grigoryan et al., 2023, p. 1), "high-status group favoritism" (Levin et al., 2002, p. 144), or "prejudice against marginalized groups" (Bergh & Brandt, 2022, p. 99). According to Social Dominance Theory, status bias reflects actual group-based inequalities, i.e., the unequal distribution of resources and power between groups (Pratto et al., 2006; Sidanius & Pratto, 1999). These inequalities are internalized and endorsed through ideologies. Furthermore, according to System Justification Theory, people are motivated to justify the existing social system and its inequalities (Jost et al., 2004). Believing that social groups have their status position for a good reason, in turn, produces status bias. Another motivation for status bias is that high-status individuals can help

promote people's goals, making positive relationships with them instrumental (Abele et al., 2021).

To the extent that status bias can be assumed when low-status groups show less ingroup bias than high-status groups, status bias has been found for implicit (Dasgupta, 2004; Newheiser et al., 2014) and explicit (Hailey & Olson, 2013) bias, and for a variety of social groups (Bettencourt et al., 2001), including racial groups (Hailey & Olson, 2013) and education-based groups (Kuppens et al., 2018). Under certain conditions, marginalized low-status groups do not follow this pattern but instead even show stronger ingroup bias than high-status groups. This is likely when group boundaries are perceived as impermeable and illegitimate (Tajfel & Turner, 1979) and when collective self-esteem is high (Li et al., 2021). These findings stem from studies that report differences in ingroup bias between high-status and low-status groups. No study to date has directly measured status bias based on gradual differences in objective group status (e.g., the average socioeconomic status of the group members). Understanding and addressing the issue of status bias is of utmost importance due to its implications for social equality and justice.

Challenges in Studying the Three Biases

Ingroup bias, similarity-attraction, and status bias are assumed to shape group evaluation jointly. However, their study is facing various challenges. One challenge to studying the three biases has been noted in earlier research: prejudice is often (implicitly) defined as outgroup prejudice (Bergh et al., 2016). This hinders the study of multiple biases, as biases can be commonly shared by members of the stigmatized group (e.g., Bettencourt et al., 2001; Sidanius & Pratto, 1999; Tajfel & Turner, 1979). The definition has also been criticized for reducing the problematic nature of prejudice to preferential tendencies and dismissing inequalities between groups (e.g., Dixon et al., 2012; Hodson, 2021). Alternative suggestions to define prejudice as targeted at disadvantaged (out-)groups (see Hodson, 2021), similar to status bias, does not allow

for studying multiple biases. In order to differentiate between the three biases, the definition of prejudice should not be restricted to any of them. Therefore, we define prejudice as a pre-judgment about a social group or an individual based on their group membership (American Psychological Association, n.d., b.), and use the term 'group evaluation' with the same meaning to emphasize its neutrality. In this way, particular contexts of shared group memberships or inequalities between groups are considered in the biases that shape prejudice rather than in its definition.

We propose that a second challenge to study the three biases is to infer the existence or strength of a specific bias from *patterns* of group evaluations, which are likely shaped by *multiple* biases. For example, evaluative patterns of preferring high-status ingroups over low-status outgroups are typically attributed to ingroup bias (e.g., Bettencourt et al., 2001; Tajfel & Turner, 1979). Alternatively, these preferences could be attributed to status bias or a combination of both biases. The empirical evaluative patterns are compatible with all of these attributions. Attributing patterns of group evaluations to specific biases creates the risk of misinterpretation. As such, the well-known finding of outgroup favoritism (i.e., preferring the outgroup over the ingroup) among low-status groups (Tajfel & Turner, 1979) could alternatively be interpreted as status bias outweighing ingroup bias in specific situations. Therefore, we suggest that biases should be assessed directly. From this perspective, status bias is reflected in the extent to which group status predicts group evaluation, similarity-attraction in the extent to which similarity predicts group evaluation, and ingroup bias in the extent to which shared group membership predicts group evaluation. Such direct assessments are common for studying similarity-attraction (e.g., Brandt & Crawford, 2020), but rarely applied to the other two biases.

A third challenge to studying similarity-attraction and status bias is, we propose, the reliance on perceptions. Perceived similarity is much more strongly related to group evaluation

than actual similarity (Montoya & Horton, 2013; Montoya et al., 2008). This has been shown to occur because not only does similarity cause liking, but liking also causes the perception of similarity (Morry, 2007; Sprecher, 2014). To assess the effect of similarity in actual characteristics, similarities should be objectively measured. Regarding status bias, Social Dominance Theory (Sidanius & Pratto, 1999) and System Justification Theory (Jost et al., 2004) pronounce the importance of actual unequal distributions of resources and power between social groups. The extent to which these objective power differences are consciously perceived and accurately reflected may vary between contexts and individuals. To illustrate the possible extent of misperception of actual power differences, Sidanius and Pratto presented a public opinion survey from 1960, which showed that 79% of European Americans and 46% of African Americans believed both groups had the same chances to get 'any kind of job' (1999, p. 106). To not rely on potentially biased perceptions, we suggest objectively measuring group status (e.g., as the group members' average socioeconomic status) when assessing status bias.

The present study addresses the identified challenges by assessing ingroup bias, similarity-attraction, and status bias as the effects of ingroup membership, objective value similarity, and objective status, respectively, on group evaluation. This way, the three biases can be tested in their distinctiveness and strengths.

Differentiating Between Biases

While earlier research has not tested the distinction among all three biases, it provides insights into each bias pair's intersection, albeit with the limitations discussed in the previous section.

Ingroup Bias and Similarity-Attraction

Ingroup bias and similarity-attraction share motivational foundations and tend to produce comparable outcomes. By definition, ingroup members are similar in the group-defining characteristic and may be more or less similar in other traits. Greater similarity to a

stereotypical ingroup member increases the self-identification with the ingroup, which in turn suggests more positive ingroup evaluations (Turner et al., 1987). Regarding similarity with outgroups, Social Identity Theory (Tajfel & Turner, 1979) has predicted negative evaluations of outgroups that are similar to the ingroup, as they may threaten group distinctiveness. This, however, has been shown to be likely only under specific conditions, such as strong group identification (Jetten et al., 2001).

Ingroup Bias and Status Bias

Status bias has typically been studied as a moderator of ingroup bias, influencing the extent to which ingroup bias is expressed. Ingroup bias was found to be more pronounced in high-status groups, whereas low-status groups often show weak ingroup bias, no bias, or even outgroup favoritism (Bettencourt et al., 2001; Pratto et al., 2006; Tajfel & Turner, 1979). Only relatively recently have researchers started systematically differentiating between ingroup bias and status bias. For example, Bergh et al. (2016, studies 2,3,4,6) created scenarios in which ingroup bias and status bias made conflicting predictions. They found that evaluations of various low-status groups were interrelated even among individuals who belonged to one of the evaluated groups, albeit to a lesser extent. They concluded that the commonalities among prejudices (generalized prejudice) can be attributed more to prejudice against low-status groups than to prejudice against outgroups. Their approach, however, did not allow for assessing the strengths of ingroup bias and status bias, and was limited to binary distinctions of high-and low-status groups.

Grigoryan et al. (2023) conducted vignette experiments in which fictitious individuals were described as belonging to multiple groups. They found evidence of ingroup bias for belief-indicative group characteristics (those indicative of their members' beliefs, e.g., religious affiliation) and status bias for status-indicative group characteristics (those indicative of their members' status, e.g., educational attainment). These studies suggest that in multiple

categorization scenarios, the strength of ingroup bias and status bias varies depending on the kind of group characteristic.

Similarity-Attraction and Status Bias

Brandt (2017) predicted prejudice based on similarity in political ideology and the interaction between group status ratings and participants' ideology. He found that status bias was more pronounced among conservative participants; however, this interaction effect contributed little to explaining prejudice once person-group similarity in political ideology was considered. Taking another approach, researchers have mapped group evaluations onto different dimensions based on similarities between them. As such, Bergh et al. (2016, study 7) found support for a high-status (e.g., CEOs, Dutch-Americans) and a low-status (e.g., wall-street protestors, Colombian-Americans) prejudice dimension using confirmatory factor analysis, indicative of a high relevance of group status for group evaluation. Using a similar approach, Bergh and Brandt (2022) have identified three dimensions through exploratory and confirmatory factor analysis: prejudice against marginalized groups, privileged/conservative groups, and unconventional groups. The factor of prejudice against marginalized groups resonates with status bias. Prejudice against privileged/conservative groups and unconventional groups was endorsed by different people, namely those with the respective opposite ideology, resonating with similarity attraction. However, whether participants were members of the groups they evaluated is unknown.

The Current Research

Three notable observations can be made from the reviewed studies. Firstly, their findings suggest that ingroup bias, similarity-attraction, and status bias are distinct biases that shape group evaluation. The biases may complement or compete with one another, depending on the specific combination of the characteristics of the person evaluating and the evaluated group. Their strengths may vary empirically across contexts and individuals. Depending on

which bias is more substantial and dominant in a given context, the observable pattern of group evaluation may take different forms: ingroups may or may not be preferred over outgroups, similar groups may or may not be preferred over dissimilar groups, and high-status groups may or may not be preferred over low-status groups. From this perspective, ingroup bias, similarity-attraction, and status bias can be seen as shaping group evaluation together. Only their additive effect determines the observable patterns of group evaluation. Accordingly, we expect that ingroup bias, similarity-attraction, and status bias uniquely contribute to predicting group evaluations. We measure the biases directly, as the previous research falls short in doing so. We expect to find ingroup bias in the present studies (H1). We also expect to find similarity-attraction (H2a), and given its gradual nature, we expect that it holds beyond ingroup bias (H2b). Next, we expect to find status bias (H3a), and given that status bias is conceptually distinct from ingroup bias and similarity-attraction, we expect to find it beyond ingroup bias (H3b).

Secondly, as indicated by Grigoryan and colleagues' series of vignette studies (2023) where multiple group memberships are known, the strength of ingroup bias and status bias might differ depending on the kind of target group. We therefore explore whether the biases differ in their strengths depending on the kind of target group.

Thirdly, no study above has examined the social groups' actual status regarding access to valued resources. We assess the socioeconomic status of the evaluated social groups, operationalized as the average income and level of education of all group members as identified in a representative sample. Likewise, we investigate the role of objective value similarity between the evaluating persons and the social groups to avoid bidirectional causality between perceived similarity and group evaluation.

Similar to the empirical approach taken by Brandt (2017), all survey participants evaluate multiple social groups. For each observation of a participant evaluating a social group,

the following can be defined: 1) shared group membership (whether the participant is a member of the target group) for ingroup bias, 2) similarity between the participant and the group for similarity-attraction, and 3) the socioeconomic status of the target groups for status bias. Groups might be evaluated concerning aspects that can be abstracted to the two dimensions of warmth/communion and competence/agency (Abele et al., 2021). In the case of evaluating multiple groups, however, the efficiency goal is activated so that these two dimensions become highly correlated, getting close to a unidimensional evaluation of overall good or bad, like or dislike. We intend to capture such valanced evaluations of social groups.

We tested all hypotheses across two studies using two independent samples: the German Social Cohesion Panel (Study 2) and its pilot study (Study 1). The two studies assessed evaluations of the same social groups and differed in measuring group evaluation.

Study 1

Data and Participants

Study 1 uses data from the pilot study of the German Social Cohesion Panel (SCP) 2020. The SCP is a quantitative household panel conducted by the Research Institute Social Cohesion (RISC) in cooperation with the German Socio-economic Panel (SOEP). Its pilot study was conducted, among other purposes, to test the study design and gain insights into cohesion-related topics (Task Force FGZ-Datenzentrum, 2022). It was sampled from German participants of the European Social Survey 2016 (ESS 8). After completion of the ESS survey, participants were asked if they were willing to participate in another study at a later time. Those who agreed (i.e., the anchor persons) and all their household members aged 17 or older were invited by mail to participate in the SCP pilot study in self-completion mode, either online or using pen and paper. Anchor persons were compensated 15€ and asked for consent to connect their responses to the two surveys. The German subsample of the ESS 8 was used to calculate the average values and socioeconomic status of the target groups and to identify whether participants were

members of the groups. The SCP pilot study (N = 868) was used for the primary analyses as it included a measure of group evaluation and additional information for identifying if participants belonged to the evaluated groups. We excluded participants for whom responses to both surveys were unavailable, that is, all household members (N = 198), and participants who either did not agree to connect their responses to the two surveys or for whom it was technically impossible (N = 80). This left us with N = 589 participants, each evaluating 16 social groups. After the casewise deletion of missing observations on any predictor or the dependent variable, we retained N = 8,913 valid observations from N = 571 participants, which we held constant for the subsequent analyses.

Measures

Group evaluation was assessed in the SCP pilot study by one item from the social distance scale (Bogardus, 1925): "How pleasant would it be if a member of the following groups married into your family?". Participants responded on an 11-point scale from 1 (*very unpleasant*) to 11 (*very pleasant*). Attitudes toward 17 social groups were assessed. Evaluations of one social group (homosexuals) were excluded from the analyses because no information was available on whether respondents belonged to that group. This left us with 16 social groups for the present analysis. The target groups were selected by the RISC research data center and represent four salient cultural groups (e.g., Christians), four salient status groups (e.g., people with university diploma), four salient political groups (e.g., leaning toward the political right), and four salient regional groups (e.g., living in a rural area). In reference to the typology by

Grigoryan et al. (2023), status groups can be considered status-indicative, while cultural and political groups can be considered belief-indicative.[2]

Basic Human Values were assessed in the ESS 8 using the 21-item Portrait Value Questionnaire (PVQ; Schwartz et al., 2015; Schwartz et al., 2001). Participants were asked to assess to what degree a fictitious person is like them on a six-point scale ranging from 1 (*very much like me*) to 6 (*not like me at all*). A sample item is: "It is important to her/him to listen to people who are different from her/him. Even when she/he disagrees with them, she/he still wants to understand them." The participants' responses to the 21 value items were reversed so that higher scores corresponded to greater importance and were ipsatized to obtain relative value priorities (Schwartz, 2007).

Education and income served as indicators of socioeconomic status. In the ESS 8, the highest level of education was assessed as the highest school- and professional education, provided in the form of seven standardized educational categories (ESS-ISCED). We reduced them to five categories by collapsing the two lowest and the two highest levels of education to achieve a balanced categorization appropriate to the German educational system. Household income was provided in deciles and converted to the approximate income in € (European Social Survey, 2016). It was then adjusted to household size by dividing it by the square root of the number of household members, and finally, it was grouped into quintiles.

Group membership information indicated whether a participant belonged to each evaluated group. The SCP pilot study assessed such information for the region of residence, the size of the community, immigration status, German nationality, religious denomination and

[2] Regional groups are comparably weakly informative of status and beliefs. Empirically, they vary relatively little on status and values in our data, see Appendix 3A.

religiosity, political party preferences and political position, and the ESS 8 for income and education.

Results

The dependent variable in all subsequent analyses was group evaluation across the 16 target groups. The predictor indicating ingroup bias was group membership: A binary variable was created, indicating for each observation whether the participant is a member of the target group. For example, a politically right-leaning Christian evaluated an ingroup when evaluating Christians and an outgroup when evaluating politically left-leaning persons. On average, participants were members of $M = 4.6$ ($SD = 1.28$) groups they evaluated. Table 3.1 presents the number of identified ingroup members used to calculate the status index, the number of participants evaluating these groups in the SCP pilot study, and the mean evaluation of each target group. Note that the number of group members differs considerably between groups due to different proportions of group members within society and sampling bias. Appendix 3A shows that balancing the sample regarding group members yields similar results but impacts the sample's representativeness and significantly reduces sample size.

The socioeconomic status of the 16 target groups was the predictor indicating status bias. The participants' socioeconomic status was calculated by standardizing their categorized income and education onto a scale from 0 to 1 and averaging it to a status index. Then, group status was calculated by averaging the status index across all their members. For example, to calculate the status of religious Muslims, the status index was averaged across all respondents who reported to be religious Muslims. To calculate the status of "the rich" and "the poor," the status index was averaged across the highest and lowest adjusted income quintiles, respectively. The average status index of the social groups is shown in Appendix 3B. Across all 16 groups, the average status index was $M = .50$, $SD = .19$.

Table 3.1

Target Group Characteristics and Evaluation

	Evaluation *M* (*SD*)	*n* Evaluations	*n* Shared Group Membership	Group Status	*n* Group Status Calculation
City	6.52 (1.62)	564	167	0.57	741
Countryside	6.86 (1.75)	562	180	0.49	812
Western Germany	6.64 (1.54)	563	377	0.53	1,696
Eastern Germany	6.40 (1.51)	561	194	0.47	839
German citizenship	7.26 (1.94)	564	556	0.52	2,389
With mig. back.	6.19 (1.51)	562	36	0.43	252
Muslim	4.82 (1.99)	557	8	0.26	82
Christian	6.69 (1.78)	562	205	0.53	924
With tertiary degree	7.06 (1.71)	565	197	0.82	719
Without voc. training	4.71 (1.84)	566	51	0.22	102
Poor	5.03 (1.67)	537	81	0.19	561
Rich	6.51 (1.91)	531	114	0.87	482
Likes the Greens	6.39 (1.91)	561	52	0.66	197
Likes the AfD	3.08 (2.30)	560	23	0.45	95
Pol. left-leaning	5.67 (2.29)	548	264	0.55	1,081
Pol. right-leaning	3.35 (2.23)	550	108	0.52	493

Note. n evaluations = number participants evaluating the target group. *n* shared group membership: number of participants sharing group membership with the target group. Group status = socioeconomic group status calculated by averaging the socioeconomic status of all identified members. *n* Group Status Calculation = number of group members used for group status calculation.

The predictor indicating similarity-attraction was value similarity. The value similarity between the participant and the target group was calculated for each observation of a particular participant evaluating a specific group. The groups' average values are presented in Appendix 3B. The Euclidean distance between the respondents' and the groups' 21 value items was calculated. It was then *z*-standardized across all observations, and its values were reversed so that higher values indicated greater similarity.

Multilevel modeling with random intercepts and fixed slopes was used in all subsequent analyses to account for the hierarchically structured data with observations of group evaluations (Level 1) nested in participants (Level 2). The variance of the multilevel model can be broken down into variance on the between-person level, reflecting how mean levels differ between participants, and variance on the within-person level, reflecting variance within participants across the 16 group evaluations. Since we are interested in how the predictors affect group evaluation within individuals (at Level 1), they were *z*-standardized within individuals. This way, they generate unbiased estimates (see Enders & Tofighi, 2007) that are comparable to each other within and across models. A null model containing the dependent variable indicates that Level 1 variance amounts to 6.6% of the total variance (ICC = .066). We used the R package lmer for the subsequent analyses. The model syntax can be found in the supplemental material [https://osf.io/nfmc3]. Given the large sample sizes at the level of observations, we used a significance level of $\alpha = .001$. Table 3.2 displays the means, standard deviations, and interrelations between participant-standardized predictors and the dependent variable across all observations[3]. The correlations between the predictors range between $r = .09$ and $r = .23$.

[3] Note that means and standard deviations of the predictors are standardized to zero and one, respectively, within participants but show slightly different values across participants.

Table 3.2

Means, Standard Deviations, and Correlations of the Dependent and Independent Variables

Variable	*n*	*M*	*SD*	1	2	3	4
1. Attitude	8,913	5.83	2.23	–			
2. Shared group membership	8,913	0.001	0.98	.28***	–		
3. Value Similarity	8,913	-0.002	0.98	.13***	.23***	–	
4. Group Status	8,913	-0.002	0.97	.26***	.14***	.09***	–

Note. Insert General Note here (e.g., Standard errors are in parentheses).

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

We calculated a multilevel regression model with shared group membership as a predictor of group evaluation (Model 1). In line with Hypothesis 1, the effect of shared group membership on group evaluation was positive and significant ($\beta = .29$, $t(8{,}340.82) = 28.68$, $SE = 0.01$, $p < .001$, $R^2 = .078$), indicating that participants evaluated ingroups more positively than outgroups.

We then calculated a multilevel regression model with value similarity as a predictor for group evaluation (Model 2a). In line with Hypothesis 2a, the effects were positive and significant with $\beta = .13$, $t(8{,}345.72) = 12.70$, $SE = 0.01$, $p < .001$. However, the level-2 variance that the model explained was low ($R^2 = .02$). Next, we added value similarity to Model 1 to test whether it was a significant predictor beyond shared group memberships (Model 2b). Value similarity contributed to group evaluation above ingroup bias ($\beta = .07$, $t(8{,}344.16) = 6.69$, $SE = 0.01$, $p < .001$). The model fit improved compared to Model 1 ($\Delta\chi^2 = 44.69$, $p < .001$), and the amount of explained variance increased slightly ($R^2 = .082$). These results support Hypothesis 2b, indicating that the similarity predicts group evaluation – at least somewhat – beyond ingroup bias.

Table 3.3

Model Summaries Main Analyses

Effect	Model 1	Model 2a	Model 2b	Model 3a	Model 3b	Model 4
			Fixed effects			
Intercept	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)
Shared Group Membership	0.29*** (0.01)		0.27*** (0.01)		0.26*** (0.01)	0.25*** (0.01)
Value Similarity		0.13*** (0.01)	0.07*** (0.01)			0.06*** (0.01)
Group Status				0.28*** (0.01)	0.24*** (0.01)	0.24*** (0.01)
			Random effects			
Variance components						
Level 1	0.89	0.96	0.88	0.90	0.83	0.83
Level 2	0.07	0.07	0.07	0.07	0.08	0.08
			Goodness of fit and model information			
N Participants	571	571	571	571	571	571
N Observations	8,913	8,913	8,913	8,913	8,913	8,913
Pseudo r^2	0.08	0.02	0.08	0.07	0.13	0.13
Deviance	24,695	25,319	24,650	24,783	24,132	24,102
AIC	24,717	25,341	24,681	24,805	24,163	24,142
Log-Likelihood	-12,354	-12,667	-12,336	-12,398	-12,077	-12,065
$\Delta\chi^2$			44.69***		563***	593***

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Next, we calculated a multilevel regression model with group status as a predictor for group evaluation (Model 3a). In line with Hypothesis 3a, the effect was positive and significant ($\beta = .28$, $t(8340.10) = 26.94$, $SE = 0.01$, $p < .001$). The amount of explained variance was considerable ($R^2 = .07$). Next, we added group status as a predictor to Model 1 to test whether it was significant beyond shared group membership (Model 3b). In line with Hypothesis 3b,

Table 3.4

Model Summaries for the Evaluation of Belief-Indicative and Status-Indicative Groups

Effect	All groups (Model 4)	Status-indicative groups	Belief-indicative groups
	Fixed effects		
Intercept	0.01 (0.02)	0.02 (0.02)	0.004 (0.01)
Ingroup membership	0.25*** (0.01)	0.19*** (0.03)	0.35*** (0.02)
Value Similarity	0.06*** (0.01)	-0.0003 (0.02)	0.02 (0.02)
Group Status	0.24*** (0.01)	0.50*** (0.02)	0.13*** (0.01)
	Random effects		
Variance components			
Level 1	0.83	0.77	0.87
Level 2	0.08	0.05	0.01
	Goodness of fit and model information		
N Participants	571	570	571
N Observations	8,913	2,199	4,464
Deviance	24,101.84	5,790.77	12,098.28
AIC	24,142.50	5,825.78	12,136.60
Log-Likelihood	-12,065.25	-2,906.89	-6,062.30

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

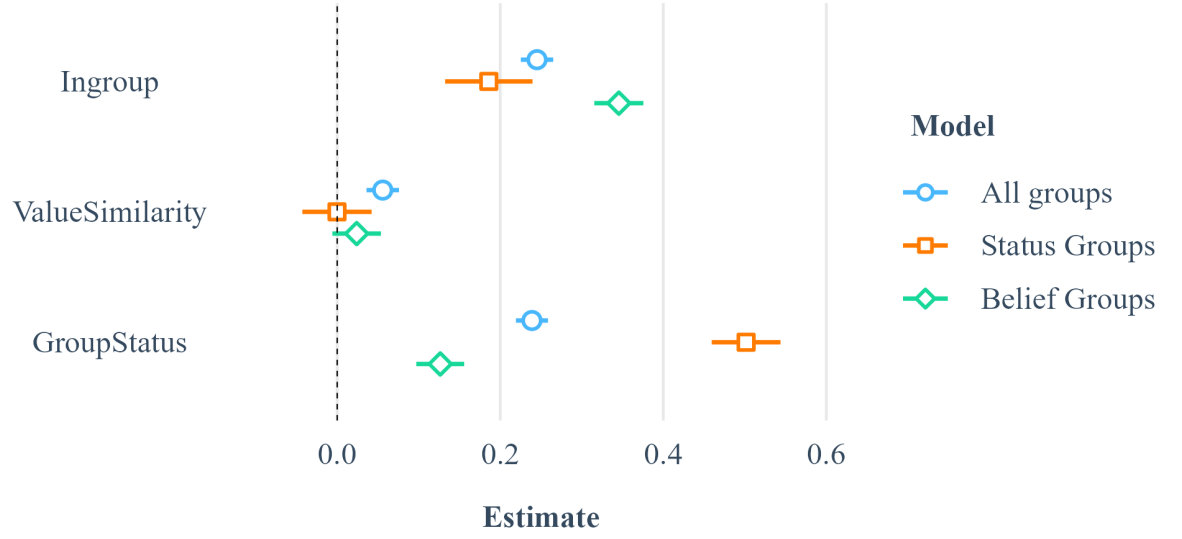
† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

group status was still significant ($\beta = .24$, $t(8{,}337.83) = 24.12$, $SE = 0.01$, $p < .001$). The model fit improved compared to Model 1 ($\Delta\chi^2 = 562.61$, $p < .001$). The explained variance increased to $R^2 = 0.13$, indicating that ingroup bias and status bias explained largely different shares of the variance in group evaluation.

Including all predictors in one model (Model 4) reveals similar results: shared group membership ($\beta = .25$, $t(8{,}337.85) = 24.17$, $SE = 0.01$, $p < .001$) and group status ($\beta = .24$, $t(8{,}336.44) = 22.41$, $SE = 0.01$, $p < .001$) were similarly strong predictors, while value similarity

Figure 3.1

Coefficient Plot for the Evaluation of All Groups, Status-Indicative Groups, and Belief-Indicative Groups



(β = .06, t(8,342.06) = 5.50, SE = 0.01, p < .001) was a relatively weak predictor of group evaluation. The model results are summarized in Table 3.3.

We next explored how shared group membership, group status, and value similarity predicted group evaluation differently for status-indicative and belief-indicative groups. Similar to Model 4, we calculated two multilevel models with all predictors, one for evaluating status-indicative groups and one for evaluating belief-indicative groups.[4] The evaluation of status-indicative groups was most strongly and positively predicted by group status (β = 0.50, t(1,652.88) = 23.33, SE = 0.02, p < .001) followed by shared group membership (β = 0.19, t(1,653.78) = 6.80, SE = 0.03, p < .001). The evaluation of belief-indicative groups was most

[4] More complex models such as a three-level multilevel model or a model with crossed random effects did not reach convergence

strongly and positively predicted by shared group membership (β = 0.35, t(3,895.58) = 22.49, SE = 0.02, $p < .001$), followed by group status (β = 0.13, t(3,899.21) = 8.43, SE = 0.01, $p <$ .001). The models are summarized in Table 3.4, and the estimated coefficients are plotted in Figure 3.1.

Discussion

This study tested the strengths of ingroup bias, similarity-attraction, and status bias for the evaluation of 16 target groups. We found strong support for ingroup bias (H1). Value similarity emerged as a significant predictor of group evaluation (H2a) beyond ingroup bias (H2b). Socioeconomic group status predicted group evaluation (H3a) beyond ingroup bias (H3b); moreover, it did so to a similar extent as ingroup bias. These findings, first and foremost, support the emerging literature suggesting that ingroup bias, status bias, and similarity-attraction are distinct biases (Bergh & Brandt, 2022; Grigoryan et al., 2023). Moreover, their co-occurrence supports our suggestion that they form group evaluations jointly.

The results further reveal that ingroup bias and status bias play a role in evaluating status-indicative and belief-indicative groups, suggesting that people infer a group's beliefs and socioeconomic status and evaluate them accordingly. Ingroup bias was stronger for evaluating belief-indicative groups, and status bias was stronger for evaluating status-indicative groups, aligning with previous findings in multiple categorization scenarios (Grigoryan et al., 2023). It predicted evaluations across all groups, but not evaluations of status- or belief-indicative groups specifically. Value similarity predicted evaluations across all groups, but not evaluations of status- or belief-indicative groups specifically.

Study 2

Study 2 tests whether the findings from Study 1 replicate using a larger, representative sample and a different measurement of group evaluation.

Data and Participants

In Study 2, we analyze the first wave of the German Social Cohesion Panel (SCP; 2021; N = 17,031; Gerlitz et al., 2024). The SCP employed a probability sample representative of the German population living in private households. Sampled participants were invited by mail. They were incentivized 5€ before and another 10€ after completion of the survey. These participants functioned as anchor persons for their households: they were asked to report any household members, who, then, were invited to participate in the survey, too. The survey was split into two parts to lower the participation burden. The first part of the survey contained an assessment of group evaluation, participant income, education, and group memberships, and the second part of the survey assessed participants' values, among other. We calculated the average socioeconomic status of social groups based on all anchor persons (N = 13,055) and calculated the average values of social groups and value similarities between participants and groups based on the sub-sample of participants who took part in both parts of the survey. To assure comparability between analyses, we kept N constant using the subsample of N = 9,171 participants for the primary analyses. As in the pilot study, each participant evaluated 16 social groups. Listwise exclusion of missing observations resulted in N = 137,902 valid observations from N = 8,803 participants. The analyses of this dataset were preregistered at OSF [https://osf.io/vmt9n/][5].

[5] We differed from the preregistration plan in the following aspects: The numeration of hypotheses has changed; We refrained from including status similarity into the analyses due to conceptual overlap with group status for participants with high status; We did not include wealth as an indicator of socioeconomic status for better comparability with Study 1; We report the interaction effects only in Appendix 3C for the sake of conciseness.

Measures

Group evaluation was assessed using a one-item feeling thermometer adapted to German: "Which feelings do you have about people who… ". Participants responded on an 11-point scale from 0 (*strong antipathy*) to 10 (*strong sympathy*). Attitudes toward the same 17 social groups as in the SCP pilot study were assessed.

The assessment and transformation of basic human values were identical to those employed in Study 1. The highest level of education was assessed as the highest school and professional education. We categorized the participants according to ESS-ISCED (Schneider, 2020) criteria and reduced the number of categories to five, equivalent to the procedure in Study 1. The survey also contained information on all group memberships.

Results

The predictors indicating ingroup bias, status bias, and value similarity were created in the same way as for Study 1. Participants were members of, on average, $M = 5.02$ ($SD = 1.33$) groups they evaluated. Table 3.5 presents the number of identified group members among the anchor persons used to calculate the status index, the number of participants evaluating these groups, and the mean evaluation of each target group. Again, the number of group members differs considerably between groups. Balancing the sample regarding group members yields similar results but impacts the sample's representativeness and sample size (see Appendix 3A). The average status index of the social groups is shown in Appendix 3B. Across all 16 groups, the average status index was $M = .52$, $SD = .18$.

Like in Study 1, multilevel modeling with random intercepts and fixed slopes was applied. A null model containing the dependent variable only indicated that the Level 1 variance amounts to 15.0% of the total variance (ICC = .150). Given the large sample sizes at the level of observations, we again used a significance level of $\alpha = .001$. The model syntax can be found in the supplemental material [https://osf.io/nfmc3].

Table 3.5

Target Group Characteristics and Evaluation

	Evaluation *M* (*SD*)	*n* Evalua-tions	*n* Shared Group Member-ship	Group Status	*n* Group Status Calcula-tion
City	6.23 (2.02)	8,750	5,978	0.55	7,111
Countryside	7.08 (1.87)	8,742	1,055	0.48	1,327
Western Germany	6.49 (2.22)	8,710	5,712	0.55	6,846
Eastern Germany	6.53 (1.89)	8,698	3,091	0.50	3,892
German citizenship	6.78 (1.82)	8,688	8,446	0.53	10,195
With mig. back.	5.87 (1.91)	8,699	637	0.50	971
Muslim	5.06 (2.32)	8,668	211	0.37	238
Christian	6.18 (1.99)	8,683	4,264	0.54	5,250
With tertiary degree	6.42 (1.78)	8,469	2,734	0.84	3,100
Without voc. training	5.03 (2.09)	8,682	379	0.23	482
Poor	5.51 (1.93)	8,256	1,613	0.21	2,256
Rich	4.57 (2.15)	8,256	1,775	0.88	2,190
Likes the Greens	5.20 (2.69)	8,628	1,703	0.65	1,146
Likes the AfD	1.74 (2.41)	8,636	371	0.40	260
Pol. left-leaning	4.86 (2.53)	8,658	3,562	0.57	4,063
Pol. right-leaning	2.69 (2.53)	8,679	2,140	0.53	2,641

Note. n evaluations = number participants evaluating the target group. *n* shared group membership: number of participants sharing group membership with the target group. Group status = socioeconomic group status calculated by averaging the socioeconomic status of all identified members. *n* Group Status Calculation = number of group members used for group status calculation.

Table 3.6

Means, Standard Deviations, and Correlations of the Dependent and Independent Variables

Variable	*n*	*M*	*SD*	1	2	3	4
1. Attitude	137,902	5.39	2.57	–			
2. Shared group membership	137,902	< .0001	1.00	.25***	–		
3. Value Similarity	137,902	0.001	1.00	.21***	.22***	–	
4. Group Status	137,902	-0.004	0.99	.07***	.15***	.01*	–

Note. † $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3.6 displays the means, Standard deviations, and interrelations of the participant-standardized predictors and the dependent variable across all observations.[6] The intercorrelations between the predictors range between $r = .01$ and $r = .22$. Identical to Study 1, we calculated six multilevel regression models to analyze the evaluation of all social groups. In line with Hypothesis 1, the effect of shared group membership on group evaluation was positive and significant ($\beta = .25$, $t(129{,}112.90) = 106.08$, $SE = 0.002$, $p < .001$, $R^2 = 0.064$; Model 1), indicating that participants evaluated ingroups more positively than outgroups.

In line with Hypothesis 2a, the effect of value similarity on group evaluation was positive and significant ($\beta = .20$, $t(129{,}197.65) = 85.58$, $SE = 0.002$, $p < .001$; Model 2a), indicating that participants evaluated similar groups more positively than dissimilar groups. The level-2 variance that the model explained was about two-thirds the variance ($R^2 = .043$) that

[6] Note that means and standard deviations of the predictors are standardized to zero and one, respectively, within participants but show slightly different values across participants.

Table 3.7

Model Summaries Main Analyses

Effect	Model 1	Model 2a	Model 2b	Model 3a	Model 3b	Model 4
			Fixed effects			
Intercept	0.0001 (0.005)	< .0001 (0.005)	< .0001 (0.005)	0.0004 (0.005)	0.0002 (0.005)	0.0002 (0.005)
Shared Group Membership	0.25*** (0.002)		0.22*** (0.002)		0.24*** (0.002)	0.21*** (0.002)
Value Similarity		0.20*** (0.002)	0.16*** (0.002)			0.16*** (0.002)
Group Status				0.07*** (0.002)	0.04*** (0.002)	0.04*** (0.002)
			Random effects			
Variance components						
Level 1	0.77	0.79	0.74	0.83	0.77	0.74
Level 2	0.15	0.15	0.15	0.15	0.15	0.15
			Goodness of fit and model information			
N Participants	8,803	8,803	8,803	8,803	8,803	8,803
N Observations	137,902	137,902	137,902	137,902	137,902	137,902
Pseudo r^2	0.06	0.04	0.09	0.01	0.07	0.09
Deviance	367,249	370,915	362,913	377,143	367,013	362,608
AIC	367,277	370,942	362,953	377,170	367,052	362,659
Log-Likelihood	-183,634	-185,467	-181,471	-188,581	-183,521	-181,324
$\Delta\chi^2$			4,336***		237***	4,642***

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

ingroup bias explained in Model 1. Value similarity contributed to group evaluation above ingroup bias (β = .16, t(129.192.15) = 66.40, SE = 0.002, $p < .001$; Model 2b). The model fit improved significantly compared to Model 1 ($\Delta\chi^2$ = 4,336.31, $p < .001$), and the explained variance increased somewhat to R^2 = .088. These results support Hypothesis 2b, indicating that the similarity predicts group evaluation beyond ingroup bias.

Table 3.8

Model Summaries for the Evaluation of Belief-Indicative and Status-Indicative Groups

Effect	All groups (Model 4)	Status-indicative groups	Belief-indicative groups
	Fixed effects		
Intercept	0.0002 (0.005)	-0.003 (0.01)	0.002 (0.004)
Ingroup membership	0.21^{***} (0.002)	0.12^{***} (0.004)	0.34^{***} (0.003)
Value Similarity	0.16^{***} (0.002)	0.02^{***} (0.004)	0.14^{***} (0.003)
Group Status	0.04^{***} (0.002)	0.02^{***} (0.004)	0.11^{***} (0.003)
	Random effects		
Variance components			
Level 1	0.74	0.60	0.71
Level 2	0.15	0.33	0.08
	Goodness of fit and model information		
N Participants	8,803	8,745	8,803
N Observations	137,902	33,649	69,339
Deviance	362,607.66	88,379.43	179,253.36
AIC	362,659.32	88,426.63	179,303.14
Log-Likelihood	-181,323.66	-44,207.32	-89,645.57

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

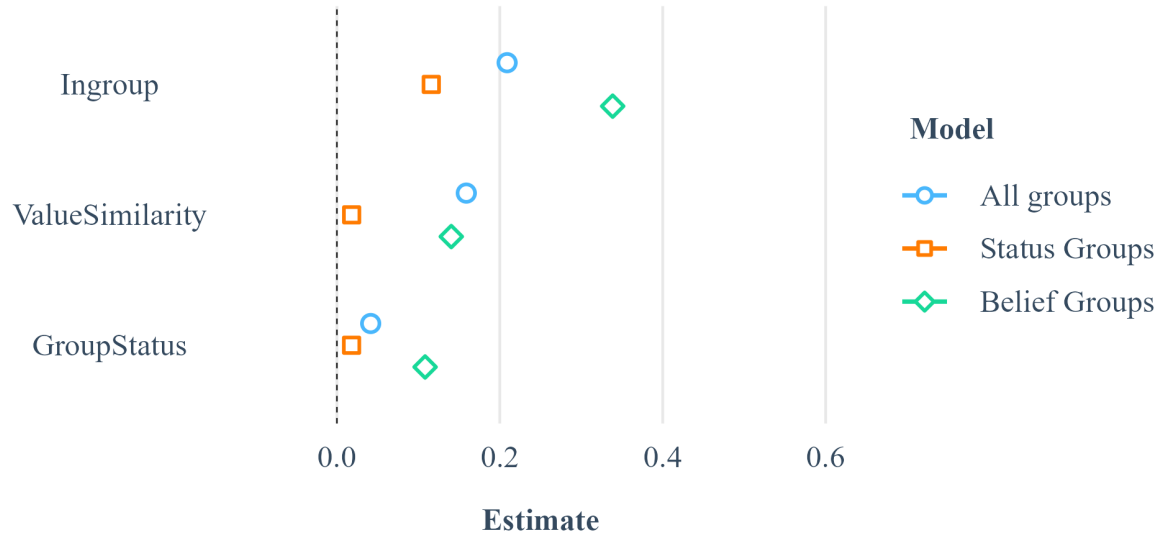
† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

In line with Hypothesis 3a, the effect of group status on group evaluation was positive and significant ($\beta = .07$, $t(129{,}133.82) = 30.00$, $SE = 0.002$, $p < .001$; Model 3a). The amount of explained variance was negligible ($R^2 = .005$). However, in line with Hypothesis 3b, group status contributed to group evaluation beyond ingroup bias ($\beta = .03$, $t(129{,}132.98) = 15.39$, $SE = 0.002$, $p < .001$). The model fit improved compared to Model 1 ($\Delta\chi^2 = 236.36$, $p < .001$), and the explained variance increased slightly to $R^2 = .065$.

Including all predictors in one model (Model 4) reveals similar results: shared group membership ($\beta = .21$, $t(129{,}116.33) = 87.22$, $SE = 0.002$, $p < .001$) and value similarity ($\beta =$

Figure 3.2

Coefficient Plot for the Evaluation of All Groups, Status-Indicative Groups, and Belief-Indicative Groups



.16, $t(129{,}191.56) = 66.94$, $SE = 0.002$, $p < .001$) were the strongest predictors, while group status ($\beta = .04$, $t(129{,}138.50) = 17.49$, $SE = 0.002$, $p < .001$) was the weakest predictor of group evaluation. All model results are summarized in Table 3.7.

We next explored how shared group membership, group status, and value similarity predicted group evaluation differently for status-indicative and belief-indicative groups. Similar to Model 4, we calculated two multilevel models with all predictors, one for evaluating status-indicative groups and one for evaluating belief-indicative groups.

The results show that the evaluation of status-indicative groups was most strongly and positively predicted by shared group membership ($\beta = 0.12$, $t(24{,}954.13) = 27.23$, $SE = 0.004$, $p < .001$) and significantly but only slightly by value similarity ($\beta = 0.02$, $t(25{,}081.24) = 4.21$, $SE = 0.004$, $p < .001$) and group status ($\beta = 0.02$, $t(24{,}982.71) = 4.14$, $SE = 0.004$, $p < .001$). These results suggest that the evaluation of status-indicative groups depended on all biases,

although the contributions of similarity-attraction and status bias were relatively weak. The evaluation of belief-indicative groups was most strongly and positively predicted by shared group membership (β = 0.34, t(60,562.25) = 98.81, SE = 0.003, $p < .001$), followed by value similarity (β = 0.14, t(60,619.95) = 41.91, SE = 0.003, $p < .001$) and group status (β = 0.11, t(60,571.37) = 32.52, SE = 0.003, $p < .001$). These results suggest that evaluating belief-indicative groups depended on all biases. All model results are summarized in Table 3.8. The estimated coefficients are plotted in Figure 3.2.

Discussion

This study aimed to validate the findings from Study 1 by using a larger, representative sample and an alternative measure of group evaluation. Again, we found support for ingroup bias (H1), value similarity (H2a) beyond ingroup bias (H2b), and status bias (H3a) beyond ingroup bias (H3b). These findings provide further evidence for that ingroup bias, status bias, and similarity-attraction together shape group evaluation.

While in Study 1, status bias was about as relevant to group evaluation as ingroup bias, in Study 2, it lagged far behind. Instead, similarity-attraction emerged as a more relevant predictor. The different assessments of group evaluation might explain the varying strengths of similarity-attraction and status bias: evaluations measured as social distance (i.e., having a group member married into one's family) may be primarily guided by ingroup bias and status bias as this reflects a rather concrete behavioral intention. In contrast, evaluations measured using a feeling thermometer (i.e., feeling sympathy for a group member) may be primarily guided by ingroup bias and similarity-attraction, as this reflects a more abstract attitude. In such cases, ideologies are more likely to be applied (Liberman et al., 2007), making value differences more important in the context of the feeling thermometer assessment. In the concrete scenario, personal goals might be activated and extended to family members who could 'get ahead' by marrying a high-status group member. Another explanation is that the feeling thermometer and

the social distance item captured two different dimensions of group evaluations (Abele et al., 2021): the horizontal dimension (warmth/communion) and the vertical dimension (competence/agency), respectively. Ingroup bias appears evident in both dimensions, whereas similarity-attraction is primarily reflected in the horizontal dimension, and status bias is mainly reflected in the vertical dimension of evaluation.

The results further reveal that ingroup bias, similarity-attraction, and status bias all play a role when evaluating status-indicative as well as belief-indicative groups. This finding supports the idea that without further information, people infer a group's beliefs and socioeconomic status and evaluate them accordingly (Koch et al., 2016). Ingroup bias was more influential than status bias in evaluating status-indicative groups. This did not replicate the findings from Study 1 or previous studies, where the opposite pattern was observed in multiple categorization scenarios (Grigoryan et al., 2023). We may have found these differences because of the different measurements of group evaluation discussed above. Future research should investigate whether different methods of assessing group evaluation capture the biases to different extents.

General Discussion

This paper aimed to test the distinctiveness and strengths of ingroup bias, similarity-attraction, and status bias and how it varies across different kinds of groups. Importantly, we measured the biases directly and assessed objective group status and value similarities. We found consistent support for ingroup bias (H1), similarity-attraction (H2a) beyond ingroup bias (H2b), and status bias (H3a) beyond ingroup bias (H3b). The strength of similarity-attraction and status bias varied across the two studies: status bias was considerably strong only in Study 1, while similarity-attraction was considerably strong only in Study 2. Furthermore, we found in both studies that evaluating status-indicative groups could be attributed to ingroup bias and status bias, although status bias was stronger in Study 1 than in Study 2. Additionally, it could

be attributed to similarity-attraction in Study 2, although this effect was very small. Moreover, we found in both studies that the evaluation of belief-indicative groups could be attributed to ingroup bias and status bias. Additionally, it could be attributed to similarity-attraction in Study 2.

The analyses present the first direct assessment of status bias based on objective socioeconomic group status. The presence of status bias in our analyses indicates that the evaluation of group members depends on their status in terms of their average access to valued resources. The finding that status bias was about as strong as ingroup bias in Study 1 demonstrates a potentially vastly underestimated impact of group-based inequalities on group evaluation. It strongly supports the suggestions from Social Dominance Theory (Sidanius & Pratto, 1999) and System Justification Theory (Jost et al., 2004) that actual inequalities between social groups are reflected by group evaluation. This is a vicious circle for disadvantaged groups: when their members are more negatively evaluated than members from advantaged groups (e.g., in a job interview), they might face more difficulties in advancing economically, which in turn reinforces their group-based disadvantage, which in turn reinforces negative evaluation of the group members. It should be noted that the studies show considerable variation in the strength of status bias, which should be further investigated in future research.

The present study supports our suggestion that ingroup bias, status bias, and similarity-attraction are distinct biases forming group evaluation jointly. This perspective offers a reinterpretation of previous findings in the field, such as the finding that low-status groups show no ingroup bias, weaker ingroup bias, or even outgroup bias (Bettencourt et al., 2001): alternatively, these groups may show ingroup bias, but status bias outweighs it. Such differences are only observable when measuring the biases directly rather than interpreting the resulting pattern of group evaluation. Thus, the present study suggests that researchers should be careful when interpreting patterns of group evaluation as indicative of a specific bias.

The differentiation between ingroup bias, similarity-attraction, and status bias offers opportunities to test and understand interventions to improve intergroup relations. For example, and most prominently, intergroup contact may improve attitudes toward various social groups (Allport, 1954; Pettigrew & Tropp, 2006). However, which bias it addresses is unknown, particularly whether it can attenuate status bias to reduce prejudice rooted in inequalities. Different biases might require different interventions. Our findings suggest that affirmative action policies may be effective candidates for reducing status bias, as they address actual intergroup inequalities that status bias is rooted in. Further research is needed to examine the potential of interventions to reduce different biases.

Belief-indicative groups appear to be evaluated based on their status in society, in terms of their access to valued resources. We found this effect consistently across the two studies, although to a lesser extent in Study 2. Actual value similarity, in contrast, only played a role in Study 2 for evaluating belief-indicative groups. Some researchers emphasize the importance of value dissimilarities for negative evaluations of culturally different groups (e.g., Chambers et al., 2013; Wetherell et al., 2013). One possible explanation for this discrepancy is that, rather than value similarity, other kinds of similarity may play a more important role in group evaluation, with political ideology or morality being possible candidates. Another possible explanation is that high objective group status leads to greater perceived similarity, which, in turn, is associated to more positive group evaluations (Grigoryan, 2020). This suggests that group evaluation might, to some extent, be misattributed to (dis)similarity while stemming from the groups' status. Future research should clarify the relationship between group status, similarity, and group evaluation. Measuring actual similarities can help to draw more solid conclusions.

No research is without limitations, and neither is ours. Both studies were limited to the evaluation of 16 social groups. A larger number of social groups could better exploit the full

range of status and value characteristics, thereby increasing the validity of the findings. In particular, the target groups were often extreme cases (e.g., rich people, poor people), whereas assessing attitudes toward intermediate category groups would allow for examining more nuanced trends.

We focused on three biases related to certain characteristics of the evaluated group. Future research may address additional biases that could be relevant for group evaluation. It may also consider individual differences and contextual moderators for a more comprehensive understanding of group evaluation. For example, societal factors such as the level of inequality might influence the strengths of the biases (Grigoryan, 2019), and so might individual differences such as Right-Wing Authoritarianism and Social Dominance Orientation (Duckitt & Sibley, 2009).

Both studies were cross-sectional, leaving the possibility for reversed causal paths. While group evaluations are unlikely to significantly affect the participants' group memberships or their actual value similarities with social groups, it is plausible that frequent negative group evaluations have long-term effects on a group's objective status. Moreover, in both studies, group evaluation was assessed using a single item due to concerns about participant burden, which may have affected the reliability of the assessment. Last but not least, it should be noted that we investigated general tendencies in group evaluation that apply to a variety of social groups. We acknowledge that the evaluation of each social group may be driven by motivations specific to that particular social group.

Conclusion

Across two studies using large samples from the general German population, we examined the distinctiveness and strengths of ingroup bias, similarity-attraction, and status bias. We found evidence for all three biases, with varying strengths across the two studies and the evaluation of different kinds of groups. We thereby propose a perspective from which ingroup

bias, similarity-attraction, and status bias are viewed as distinct biases forming group evaluations jointly.

Chapter 4: Ideological Foundations of Ingroup Bias and Status Bias[7]

Abstract

Recent advances in the study of prejudice strongly support the need to differentiate between prejudice based on outgroup-ness (ingroup bias) and prejudice based on group status (status bias). We suggest that this fundamental distinction should be applied to research on the ideological foundations of prejudice, particularly Social Dominance Orientation (SDO) and Right-Wing Authoritarianism (RWA), which, to date, conflate the two biases. The present paper investigates, across two studies ($N = 210$ and $N = 6{,}845$), whether individual differences in SDO and RWA motivate different biases. The results show that neither ideology was associated with stronger ingroup bias. SDO was associated with stronger status bias, although this effect was not robust in Study 1. These findings suggest that prior SDO and RWA research may have been misguided by placing a strong focus on outgroup prejudice. A clear theoretical and empirical distinction between the biases will help to better understand the ideological foundations of prejudice.

[7] This chapter is collaborative work with Lusine Grigoryan, University of York, UK

Recent studies make a strong case for a need to differentiate ingroup bias, the tendency to prefer ingroups over outgroups (Hewstone et al., 2002), from status bias, the tendency to prefer high-status groups over low-status groups (Bergh et al., 2016; Bergh & Brandt, 2023; Grigoryan et al., 2023). Ingroup bias has been researched thoroughly and found to be strong across a variety of social groups (for a detailed review see Hewstone et al., 2002). Status bias has been acknowledged in earlier theories (Jost et al., 2004; Sidanius & Pratto, 1999; Tajfel & Turner, 1979) but clearly differentiated from ingroup bias conceptually and empirically only relatively recently (Bergh et al., 2016; Grigoryan et al., 2023; Speer & Boehnke, 2025). The two biases have been shown to be distinct, together forming group evaluation. They eventually result in a preference for ingroups over outgroups, high-status groups over low-status groups, or neither, depending on their relative strengths in a specific situation (Speer & Boehnke, 2025). In past research, prejudices against low-status outgroups have often been attributed to ingroup bias. It is crucial to question this assumption not only to accurately understand intergroup relations but also to design interventions aiming to reduce existing biases.

The strengths of the two biases may vary across individuals, as prejudice is deeply rooted in individual-level ideological attitudes. The dual-process motivational model of prejudice (Duckitt & Sibley, 2009) argues that the two key ideological attitudes – Right-Wing Authoritarianism (RWA) and Social Dominance Orientation (SDO) – differentially motivate prejudice. However, their differentiation has so far mainly been limited to distinguishing between prejudices against various marginalized outgroups, providing limited insights into how SDO and RWA may differentially predict ingroup bias and status bias.

In the current study, we aim to bridge the gap between the well-established literature on RWA and SDO and the emerging distinction between ingroup bias and status bias as two fundamental biases (Bergh et al., 2016; Grigoryan et al., 2023; Speer & Boehnke, 2025).

Most prejudice research combines two features of target groups: they are outgroups to the study participants *and* are marginalized or low-status groups. This has either been stated explicitly or implied by the groups studied. Likewise, some definitions of prejudice include the notion that it targets marginalized groups (Dixon et al., 2012; e.g., Hodson, 2021). To differentiate ingroup bias from status bias, neither should be included in the definition of prejudice itself. Therefore, we build on a minimal definition of prejudice as a pre-judgment made about a social group or a person based on their group membership (American Psychological Association, n.d., b.), or refer to the broader term of group evaluation.

In its short history, the concomitant study of ingroup bias and status bias has been concerned with their differentiation and measurement (Speer & Boehnke, 2025), with predicting which bias emerges for the evaluation of different kinds of target groups (Grigoryan et al., 2023), and how these biases are anchored in personality (Bergh et al., 2016). A better understanding of their motivational grounds requires examining their ideological foundation, which remains unexplored to date. Prejudice is deeply rooted in ideology (Duckitt & Sibley, 2009), and the dual-process motivational model of prejudice (Duckitt & Sibley, 2009) suggests that the kind of prejudice people endorse may vary among individuals with different ideologies. We now turn to the discussion of Right-Wing Authoritarianism and Social Dominance Orientation as ideological drivers of prejudice, along with the evidence to date for their differential impact on attitudes toward various outgroups.

Ideological Foundations of Prejudice

Social Dominance Orientation and Right-Wing Authoritarianism

One of the most well-established approaches to the ideological foundation of prejudice is the distinction between Social Dominance Orientation (SDO; Pratto et al., 1994) and Right-Wing Authoritarianism (RWA; Adorno et al., 1950; Altemeyer, 1998). The concept of Social Dominance Orientation originates from Social Dominance Theory (Sidanius & Pratto, 1999),

which posits that intergroup relations in societies are structured hierarchically, with certain social groups holding more power than others. That is, they have more resources at their disposal, greater (political) power, more prestigious jobs, and the like. SDO refers to an individual's preference for such group-based inequality (Pratto et al., 1994). People with high levels of SDO legitimize hierarchical intergroup relations through so-called hierarchy-enhancing legitimizing myths, such as meritocracy. Originally, SDO was additionally conceptualized as the "extent to which one desires that one's ingroup dominate and be superior to outgroups" (Pratto et al., 1994, p. 742). This, however, conflicts with the desire for hierarchical intergroup relations in the case of low-status groups. The conceptualization of SDO was therefore revised to exclude the desire for ingroup domination (Pratto et al., 2006). This revised conceptualization aligns with findings that SDO is associated with outgroup favoritism among low-status groups (Ho et al., 2015; Levin et al., 2002). Yet, not all researchers have adopted this revision, resulting in conceptual ambiguity in SDO studies to this day.

The concept of Right-Wing Authoritarianism originated in the aftermath of the Second World War, when psychologists analyzed the "German mentality," which they characterized by submission to the Nazi regime and a desire for dominance over other groups (Adorno et al., 1950). Altemeyer (1998) revised this theory and further developed it into a personality trait theory encompassing authoritarian submission (a preference for submission to established authorities), authoritarian aggression (support for aggression by authorities toward deviants), and conventionalism (a preference for conventional social norms).

SDO and RWA both go hand in hand with higher levels of prejudice (e.g., Anderson & Ferguson, 2018). Moreover, the contributions of SDO and RWA to explaining prejudice are distinct rather than redundant, suggesting that they motivate prejudice in substantially different ways (Sibley et al., 2006). Together, they are probably the most important predictors of

prejudice at the individual level (Altemeyer, 1998) and are shown to temporally precede generalized prejudice (Osborne et al., 2021).

SDO & RWA Differently Motivate Prejudice

How SDO and RWA differentially motivate prejudice has been studied regarding their prediction of prejudice against different kinds of (mostly marginalized) outgroups. The most influential model in this regard is the dual-process motivational model of prejudice (Duckitt & Sibley, 2009). It elaborates on how personality and contextual factors cultivate either a competitive or a dangerous worldview, which predict RWA and SDO, respectively, which in turn both predict prejudice. Given this differentiation, RWA prejudice is fueled by security concerns and threats to conventions and ingroup norms whereas SDO prejudice is fueled by threats to established group-based hierarchies (Sidanius & Pratto, 2012; Thomsen et al., 2008). In consequence, RWA was expected to motivate prejudice against threatening outgroups and SDO against low-status or competitive outgroups (reflecting the conceptual ambiguity of SDO noted earlier). Regarding ingroup bias and status bias we refine this prediction: 1) since RWA is more strongly concerned with ingroup norms, and therefore group boundaries and group membership, we expect it to motivate ingroup bias more strongly than SDO does, and 2) since the kernel of SDO is the maintenance and endorsement of group-based hierarchies, irrespective of one's own group membership (Ho et al., 2015; Levin et al., 2002), we expect it to motivate status bias more than RWA does.

Building on the dual-process model, various studies have tested and broadly supported the idea that RWA predicts prejudice against 'dangerous' outgroups (e.g., violent criminals, drug dealers), SDO against 'derogated' outgroups (e.g., Africans, obese people), and both against 'dissident' outgroups (e.g., protestors, prostitutes; Asbrock et al., 2010; Cantal et al., 2015; Cohrs & Asbrock, 2009; Duckitt & Sibley, 2007). Cohrs & Asbrock (2009) found that RWA, but not SDO, predicted prejudice against an ethnic minority group when it was framed as either

threatening or socially weak and badly integrated, whereas neither predicted prejudice when the group was framed as competitive. These studies indicate that SDO and RWA predict prejudice differently against various mostly marginalized outgroups. Even though people high in SDO and RWA do not exhibit ingroup bias against every outgroup, they generally tend to show stronger ingroup bias than those low in SDO and RWA. Regarding status bias, these studies show that prejudice against derogated or low-status groups has relatively consistently been endorsed by people high in SDO and only occasionally by people high in RWA.

Further empirical evidence comes from advances in the study of generalized prejudice, the notion that people who are prejudiced against one group also tend to be prejudiced against other groups (Allport, 1954; Bergh et al., 2016). Generalized prejudice is typically operationalized by factor analyses of prejudices against various marginalized groups. Bergh et al. (2016) argued that such a generalized prejudice factor represents status bias more than ingroup bias, as its structure was found to be similar even when one of the target groups was an ingroup to the study participants (i.e., women in Study 3 and overweight people in Study 4). Certain personality traits (including altruism/empathy and openness to experience, but not agreeableness) predicted such a generalized prejudice factor, whereas only openness to experience predicted an outgroup prejudice factor (Study 5). The authors concluded that status bias is more strongly rooted in personality traits than ingroup bias. Notably, this was the case primarily for personality traits that are associated with SDO rather than with RWA (for associations between personality traits, SDO and RWA, see Duckitt & Sibley, 2009; Sibley & Duckitt, 2008; Sidanius et al., 2013).

Lastly, the evidence from minimal group experiments is mixed. Across four experiments, different researchers have found only occasional support for RWA and SDO as predictors of ingroup bias. More specifically, Sidanius et al. (1994) and Amoit and Bourhis (2005) found that people with higher levels of SDO exhibited stronger discrimination in favor

of their minimal ingroups. Reynolds et al. (2007) found in their first study that RWA, but not SDO, predicted discrimination in favor of the minimal ingroup. In their second study, they found that SDO predicted discrimination only when power over the session was given to the participants, while RWA predicted discrimination only when groups were said to have been allocated randomly. Ingroup bias outside the lab can be expected to involve stronger identification and often a life-long socialization to ingroup norms, which may be threatened by outgroups, thereby fueling RWA prejudice.

We can make three concluding observations from the literature and studies reviewed in this section: First, the dual-process model was concerned with the evaluation of outgroups only, reflecting an implicit definition of prejudice as outgroup prejudice. This does not allow for differentiating between ingroup bias and status bias. As a consequence, empirical tests of the dual-process model's prediction did not clearly distinguish between evaluations of outgroups and evaluations of marginalized groups. Second, indirect empirical evidence from such studies as well as from individual differences in generalized prejudice, broadly supports our suggestion that RWA primarily motivates ingroup bias, while SDO primarily motivates status bias. Third, none of the reviewed studies assessing prejudice toward groups differing in status have actually measured group status based on objective differences in power or access to valued resources. Building on Social Dominance Theory (Sidanius & Pratto, 1999), status bias has been argued to derive from actual group-based differences in power and access to valued resources (Speer & Boehnke, 2025). This qualification is important because only this way does status bias maintain actual group-based inequalities. The suggestion made by Social Dominance Theory (Pratto et al., 2006) that SDO-driven prejudice maintains actual group-based inequalities has not yet been put to a test where objective group status is assessed and where status bias is clearly separated from ingroup bias.

The Current Research

The current research investigates whether ingroup bias and status bias are differentially motivated by SDO and RWA. Ingroup bias is expected to be motivated more strongly by RWA than by SDO because individuals high in RWA are primarily concerned with ingroup norms and security, which may be perceived as threatened by outgroups. Individuals high in SDO may also show enhanced ingroup bias; however, ingroup norms and group boundaries are not their primary concern. Status bias, in contrast, is expected to be more strongly motivated by SDO than by RWA because individuals high in SDO generally support hierarchical intergroup relations and endorse hierarchy-enhancing ideologies. Individuals high in RWA may also exhibit enhanced status bias, as they tend to support hierarchies, too (Osborne et al., 2023). However, as this is only a secondary aspect of RWA, it is expected to be either unrelated to status bias or motivate it less strongly than SDO. The effects of the two ideologies differentially motivating the two biases will be tested by RWA and SDO moderating the effect of shared group membership on group evaluation (ingroup bias) and the effect of socioeconomic group status on evaluation (status bias), respectively.

In particular, regarding ingroup bias, we expect that

H1a) shared group membership predicts group evaluations positively

H1b) this relation is moderated by RWA in a way that it is stronger for individuals high in RWA

H1c) this relation is moderated more strongly by RWA than SDO.

Regarding status bias, we expect

H2a) higher group status predicts group evaluations positively

H2b) this relation is moderated by SDO in a way that it is stronger for individuals high in SDO

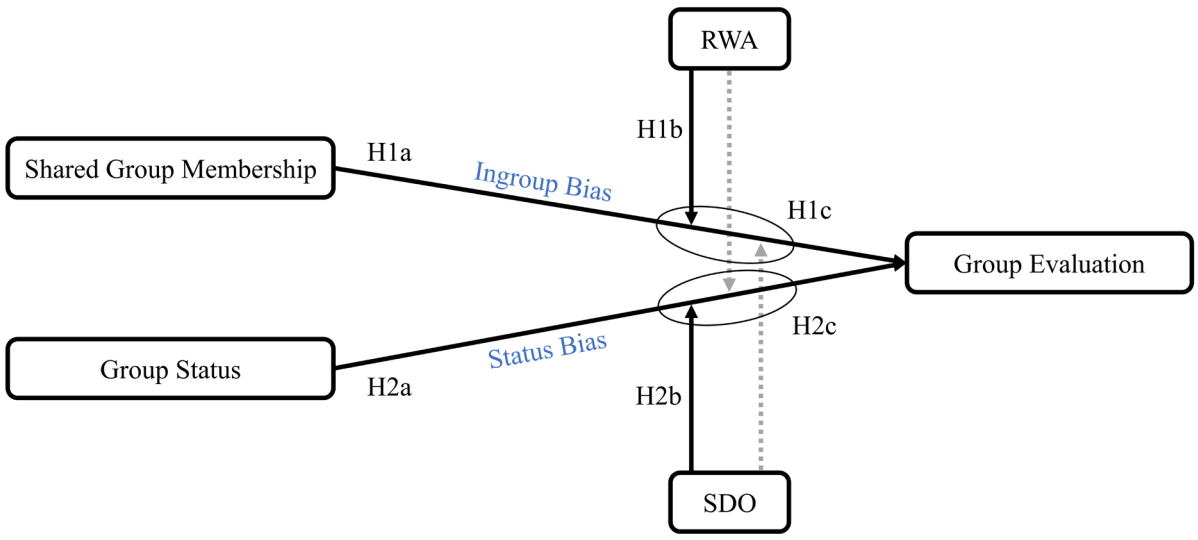
H2c) this relation is moderated more strongly by SDO than RWA.

The theoretical model is presented in Figure 4.1.

In order to test these hypotheses, we adopt the empirical approach implemented by Speer & Boehnke (2025) to differentiate between ingroup bias and status bias. Each participant evaluated various social groups, allowing the following to be defined for each observation of a participant evaluating a social group: 1) shared group membership (whether the participants belong to the groups they are evaluating), and 2) the socioeconomic status of the target group (the average socioeconomic status of all group members). The extent to which shared group membership predicts group evaluations reflects ingroup bias, while the extent to which group status predicts group evaluations reflects status bias. This approach moves beyond a binary a priori distinction of groups being categorized as either high- or low-status and instead implies a gradual logic: the higher the groups' status, the more it is expected to be favored.

Figure 4.1

Theoretical Model: Effects of RWA and SDO on Ingroup Bias and Status Bias



We tested the hypotheses across two preregistered longitudinal studies: a 2-week experience sampling study, in which RWA and SDO were measured at the beginning and attitudes toward 23 social groups were measured at the end of the study period (Study 1), and a representative survey, in which RWA and SDO were measured in Wave 1 and attitudes toward

17 social groups were measured in Wave 3, two years apart (Study 2). Both studies were conducted in Germany and differed in their samples, target groups, and the group evaluation measures.

Study 1

We conducted an experience sampling study in Germany between August 2022 and June 2023. Participants first completed an intake survey that included measures of right-wing authoritarianism and social dominance orientation, as well as information about participants' socioeconomic status and membership in various social groups. During the 14-day experience sampling period, participants reported their daily interactions with others four times a day. At the end of the study, they completed the final questionnaire, which included measures of attitudes toward a range of social groups. The study included other measures that are outside the scope of the current study; see study materials on OSF (https://osf.io/rjn29) for the full list of measures. The study was approved by the psychology ethics committee of Bochum University and the analyses were pre-registered on OSF (https://osf.io/eaws4).

Method

Participants. We aimed to recruit a balanced sample that would include similar numbers of ethnic minority (Turkish) and majority (German) participants, women and men, and not more than 50% young student participants (≤ 30 years old). To reach community samples, we advertised the study on online ad portals and neighborhood blackboards in supermarkets. We also distributed flyers at Turkish community centers, Mosques, and Turkish-owned businesses. Students could choose to receive compensation as course credit, all other participants were compensated with €50 if they completed the study. They received 10% of the total amount (€5) for completing the intake questionnaire and the remaining 90% only if they responded to at least 75% of all prompts during the experience sampling period and completed the final questionnaire. Data was collected via Qualtrics survey platform (Qualtrics, 2021). We

used the Samply app (Shevchenko et al., 2021) to send out notifications during the experience sampling period.

A total of $N = 210$ participants completed the study, an 82% completion rate in relation to those who completed the intake survey. Participants were 18 to 70 years old, M(age) = 28 (SD = 10). About 62% identified as women, 36% as men, and 1.5% as nonbinary. About half (54%) of participants had a migration background. About half (47%) identified as ethnically Turkish, 41% as German, and 12% belonged to another ethnic group. Regarding the level of education, 49% finished high school and/or vocational training, 45% were either currently studying at university or had completed a tertiary degree, and 7% had no or lower secondary education (German Realschule or Hauptschule). Finally, about 45% of participants considered their income lower than average, 42% average, and 12% higher than average.

Measures. ***Group Evaluation.*** We assessed attitudes toward 23 social groups along nine different categorization dimensions: gender (men and women), age (young, middle-aged, and older people), migration background (people with and without migration background), ethnicity (Germans, Turks), religion (Muslims, Christians, and Atheists), political positions (right-leaning and left-leaning), occupation (manual workers, professionals, unemployed people), education (people with lower secondary education ("Hauptschulabschluss"), with vocational training, and university graduates), and income (people with below average income, average income, and above average income). Attitudes toward three social groups differing in their sexual orientation (bisexual, homosexual, and heterosexual people) were also assessed but had to be excluded from the analyses because their socioeconomic group status could not be determined based on existing data.

Attitude toward each group was measured with three items capturing warmth (to what extent one feels warm or cold toward a group), competence (to what extent one believes the group members are competent), and social distance (to what extent one would like to have a

Table 4.1

Target Group Characteristics and Evaluation

	Evaluation *M* (*SD*)	*n* Evaluations	*n* Shared Group Membership	Group Status	*n* Group Status Calculation
Men	67.83 (16.79)	193	76	0.56	1,078
Women	75.42 (16.18)	192	130	0.49	1,045
Young people	66.83 (17.75)	198	164	0.49	312
Middle-aged	70.82 (16.65)	197	39	0.57	1,034
Older adults	66.88 (18.49)	191	7	0.47	777
With mig. back.	70.90 (17.29)	194	114	0.49	511
Without mig. back.	70.35 (17.01)	191	96	0.53	1,605
Turks	70.34 (18.52)	192	86	0.48	34
Germans	71.60 (15.83)	193	99	0.53	1,712
Muslims	66.93 (21.58)	195	80	0.38	68
Christians	68.52 (19.16)	192	59	0.53	1,007
Atheists	68.02 (20.83)	188	64	0.53	1,034
Pol. left-leaning	26.20 (24.48)	196	43	0.57	802
Pol. right-leaning	59.05 (22.58)	190	167	0.52	511
Manual workers	76.00 (15.75)	190	43	0.35	412
Professionals	76.40 (15.94)	190	162	0.66	1,083
Unemployed	57.08 (21.07)	192	5	0.27	59
With lower education	74.57 (14.93)	190	14	0.12	138
With voc. training	62.51 (19.49)	187	102	0.44	1,423
With tertiary degree	78.05 (14.98)	188	94	0.82	562
With low income	68.10 (19.30)	180	95	0.21	427
With average income	72.70 (17.08)	183	88	0.53	1,352
With high income	67.33 (20.18)	181	27	0.86	344

Note. n evaluations = number participants evaluating the target group. *n* shared group membership: number of participants sharing group membership with the target group. Group status = socioeconomic group status calculated by averaging the socioeconomic status of all

identified members. *n* Group Status Calculation = number of group members used for group status calculation.

group member as a neighbor; full item wording can be found in study materials on OSF: https://osf.io/vmjru). We measured attitudes both in the intake and the final surveys, but will only use group evaluations as reported in the final survey to allow for a 2-week temporal gap between the measures of RWA and SDO and group evaluations. The three items correlated strongly and produced a reliable measure of attitude (α = .88). Table 4.1 presents all evaluated social groups and their average evaluation.

Social Dominance Orientation. SDO was measured with the 12-item German adaptation of Pratto et al. (1994) by Cohrs & Asbrock (2009). The scale showed good reliability as a unidimensional measure of SDO (α = .89).

Right-Wing Authoritarianism. RWA was measured with the 9-item KSA-3 scale (Beierlein et al., 2014; α = .82) that covers all three sub-dimensions. An example item is "Rules in society should be enforced without pity". Participants responded on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Socioeconomic Group Status. Socioeconomic group status was calculated using the German sample of the European Social Survey round 11, 2022 (N = 2,420). Education and income served as indicators of socioeconomic status. The highest level of education was provided as an ESS-adapted ISCED categorization (Schneider, 2020), an ordinal variable with seven categories designed to harmonize educational degrees across countries. Participants were categorized in this scheme according to their highest school- and highest professional education. We reduced the number of categories to five by combining each of the two lowest, and the two highest levels of education to achieve a balanced categorization appropriate to the German educational system. Household income was assessed in deciles and transformed into

household income quintiles equivalized for household size: We converted the income deciles into the approximate income in Euros (€), adjusted it to household size by dividing through the square root of the number of household members, and finally grouped into quintiles, similar to the procedure in Groh-Samberg et al. (2023). The participants' socioeconomic status was calculated by standardizing their categorized income and education onto a scale from 0 to 1 and averaging it to a status index. The status index likewise takes on possible values between 0 and 1. Then, socioeconomic group status was calculated by averaging the status index across all of their members. For example, to calculate the status of Turks, the status index was averaged across all ESS participants who lived in Germany and identified as Turks. The number of group members across which the status index was averaged differed per social group correspondingly to the number of identified ingroup members among the participants (see Table 4.1). The social groups' average status index is shown in Table 4.1. Across all 23 groups, the mean status index was $M = .50$ ($SD = .17$).

Shared Group Membership. In the intake questionnaire, we asked about the participants' group memberships on all categorization dimensions for which we assessed their attitudes: gender, age, occupation, education, subjective income, migration background, ethnicity, religion, and political positions. The categorizations either matched those we assessed attitudes toward or could be grouped to match them. Table 4.1 presents the evaluated groups with the number of their identified ingroup members. Note that the number of ingroup members differs between groups. This is due to different proportions of group members within society as well as sampling bias. Participants shared group memberships with on average 38% groups they evaluated.

Measurement Model. The measurement model lacked satisfactory fit, so that three SDO item pairs were allowed to correlate based on modification indices and an inspection of the scale (see Appendix 4A). This resulted in a satisfactory model fit of the measurement model

($\chi 2(176, N = 4383) = 323.193$, $p < 0.001$; CFI = 0.895; TLI = 0.875; RMSEA = 0.014; SRMR within < 0.001; SRMR between = 0.078).

Results

Preliminary Analyses. Means, Standard deviations and interrelations of the within-person standardized shared group membership and group status, the RWA and SDO factor scores, and group evaluation are displayed in Appendix 4B. The data was hierarchically structured with observations of group evaluations (Level 1) nested in participants (Level 2). Shared group membership and Group status are Level 1 predictors while SDO and RWA are Level 2 moderators. Therefore, we applied multilevel structural equation modeling. Models with random slopes produce a within- and a between-person covariance matrix, in contrast to models without random slopes which produce a single covariance matrix. Absolute model fit indices are based on the single common covariance matrix and are therefore not applicable to models with random slopes and not provided in Mplus. Therefore, we do not report absolute model fit indices below but only the structural weights from the models.

The variance of the multilevel structural equation models predicting group evaluation can be broken down into variance on the between-person level, reflecting how mean levels differ between participants and variance on the within-person level, reflecting variance within participants that differs across the 23 target groups that each participant evaluated. A Null model that only contains the dependent variable of group evaluation indicates that the amount of Level 2 variance amounts to 29.3% of the total variance (ICC = .29). Since we are interested in how the level 1 predictors shared group membership and group status affect group evaluation within individuals (at Level 1), they were *z*-standardized within individuals. This way, they generate comparable and unbiased estimates (Enders & Tofighi, 2007). We used Mplus version 8.5 (Muthén & Muthén, 1998-2017) for the subsequent analyses. The model syntax can be found in the supplemental material [https://osf.io/zxy2c].

Main Analyses. We estimated eight models with increasing complexity[8]. The model results are presented in Table 4.2. Starting from the null-model (Model 0), we added the predictors successively. Shared group membership (Model 1) and group status (Model 2) predicted group evaluation positively when entered separately into the model (β = 0.14, *SE* = 0.01, $p < .001$ and β = 0.03, *SE* = 0.01, $p < 0.01$, respectively), indicating evidence for ingroup bias and status bias. However, when entered into the model simultaneously (Model 3), the effect of group status on group evaluation became insignificant (β = 0.02, *SE* = 0.01, p = .146) so that only the effect of shared group membership remained significant (β = 0.14, *SE* = 0.01, $p < .001$). We thus accept H1a as we find evidence for ingroup bias but reject H2a as we do not find evidence for status bias in the joint model.

For assessing the effects of SDO and RWA on ingroup bias and status bias, we modeled the effects of shared group membership and group status on group evaluation as random slopes (hereafter referred to as ingroup bias slope and status bias slope, respectively). When added to the model separately, RWA did not predict the ingroup bias slope (Model 4; β = -0.03, *SE* = 0.03, p = .375), and SDO predicted the status bias slope positively (Model 5; β = 0.06, *SE* = 0.02, p = .007).

When added to the model simultaneously (Model 6), this pattern persisted with SDO predicting the status bias slope positively (β = 0.07, *SE* = 0.02, p = .003) and RWA not predicting the ingroup bias slope (β = -0.04, *SE* = 0.03, p = .207). Moreover, SDO and RWA were not directly related to group evaluation (β = -0.21, *SE* = 0.16, p = .203 and β = 0.31, *SE*

[8] We estimated three additional models as reported in the preregistration, but do not present there here for reasons of simplicity. An overview of all eleven models and their results can be found in Appendix 4C.

=0.27, p = .255, respectively). In sum, model 6 shows support for H2b (SDO predicting status bias) but not for H1b (RWA predicting ingroup bias).

Table 4.2

Model summaries Main Analyses

	M1	M2	M3	M4	M5	M6	M7
Evaluation ON Shared Group Membership	0.14*** (0.01)		0.14*** (0.01)				
Evaluation ON Group Status		0.03** (0.01)	0.02 (0.01)				
Evaluation ON RWA				0.2 (0.19)		0.31 (0.27)	0.24 (0.23)
Evaluation ON SDO					-0.03 (0.08)	-0.21 (0.16)	-0.17 (0.15)
Ingroup Bias (RS) ON RWA				-0.03 (0.03)		-0.04 (0.03)	-0.03 (0.03)
Status Bias (RS) ON RWA							0.08* (0.03)
Ingroup Bias (RS) ON SDO							-0.02 (0.03)
Status Bias (RS) ON SDO					0.06** (0.02)	0.07** (0.02)	0.01 (0.04)
LL	-5633	-5692	-5632	-7912	-8527	-10784	-10780
Parameters	4	4	5	45	48	87	87
AIC	11274	11392	11274	15914	17150	21742	21735

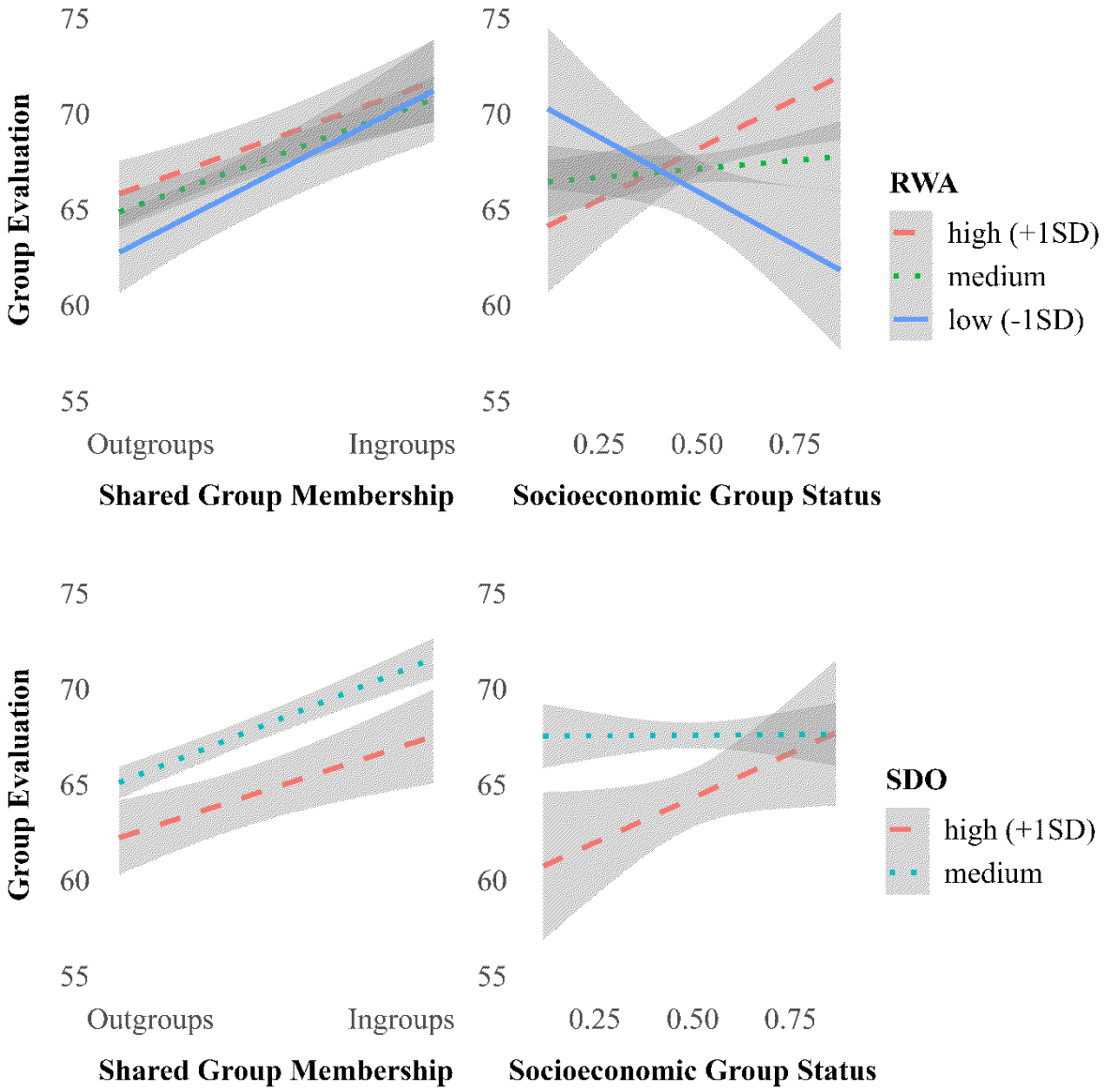
Note. RS = random slope, LL = Log Likelihood, AIC = Alkaike Information Criterion.

Standard errors are in parentheses.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Figure 4.2

Associations between Group Evaluation and Shared Group Membership (Left), and Socioeconomic Group Status (Right), by Levels of RWA (Top) and SDO (Bottom)



Note. Participants were grouped into only two groups based on their level of SDO, as no participant had SDO values lower than -1 *SD* (*SD* = 1.01) from the mean (*M* = 2.25).

When RWA and SDO were both allowed to predict both slopes (Model 7)[9], unexpectedly, only the effect of RWA on status bias was significant (β = 0.08, *SE* = 0.03, p = .014). The effect of SDO on status bias (β = 0.02, *SE* = 0.04, p = .665) and ingroup bias (β = -0.02, *SE* = 0.03, p = .43), as well as the effect of RWA on ingroup bias (β = -0.03, *SE* = 0.03, p = .405) were not significant. This finding is in contrast to the predictions of H1c (RWA predicts ingroup bias more than SDO does) and H2c (SDO predicts status bias more than RWA does). Furthermore, it reveals that the effect of SDO on status bias was robust against the inclusion of RWA in the model, but not against the inclusion of the effect of RWA on the status bias slope. The interaction effects are plotted in Figure 4.2.

Exploratory and Robustness Analyses. In order to better understand why we did not find an effect of group status on group evaluation when tested in a common model with shared group membership, we looked at the evaluations of warmth, competence, and social distance separately. These exploratory analyses revealed that the effect of group status on group evaluation remained significant for competence (β = 0.06, *SE* = 0.01, p < .001), but not for social distance (β = 0.01, *SE* = 0.01, p = .462) and warmth (β = -0.02, *SE* = 0.01, p = .076) which even tends toward a reversed status bias, rendering the total effect insignificant. Meanwhile, the effect of shared group membership remained positively significant for all three single measures and was strongest for the evaluation of warmth (competence: β = 0.07, *SE* = 0.01, p < 0.001; social distance: β = 0.14, *SE* = 0.01, p < 0.001; warmth: β = 0.16, *SE* = 0.01, p < .001). Despite the high Cronbach's alpha (α = .88), these various group evaluations seem to

[9] In model 7 and related models in the exploratory and robustness analyses, the residual variance of the status bias slope became negative. This can happen, among other, due to small sample sizes or skewed variables. We fixed the estimate to zero to prevent problems with the estimation of the models.

align less well for status bias than they do for ingroup bias. Groups with higher status are evaluated more positively in terms of competence and social distance, but not warmth.

In order to better understand the unexpected finding of RWA predicting status bias more than SDO did, we explored if this effect was driven by all its three dimensions (authoritarian aggression, authoritarian submission, and conventionalism) or by any one or two dimensions particularly. We thus estimated a model similar to Model 7 but specified the three RWA dimensions as separate factors. Results show that only authoritarian submission predicted the status bias slope ($\beta = 0.05$, $SE = 0.02$, $p = .045$).

Last but not least, we ran a robustness analysis to test the sensitivity of the results to the exclusion of one target group: People on the political right were evaluated most negatively by far and may thus have disproportionately influenced the estimates. Therefore, we tested whether the results of Model 7 were robust against the exclusion of this group. Indeed, the direction and significance levels remained the same.

Discussion

In Study 1, we found evidence for ingroup bias (confirming H1a) and status bias; however, the latter was not robust against inclusion of ingroup bias in the model (contrary to H2a). Exploratory analyses revealed that status bias remained significant above ingroup bias only in assessments of competence. Ingroup bias, meanwhile, was stronger in assessments of warmth rather than competence or social distance. This supports the notion from previous research that measures of group evaluation may differ in their ability to capture ingroup bias and status bias (Speer & Boehnke, 2025).

We expected that RWA would predict ingroup bias because individuals with high levels of RWA are primarily concerned with ingroup norms and security, which may heighten the perception of threat posed by outgroups and make group boundaries more salient. We found no evidence for this effect, contrary to Hypothesis H1b. Possibly, RWA only motivates ingroup

bias under certain circumstances, such as when the target group is perceived as particularly threatening or when group identification is especially high. Many of the target groups in the present study are unlikely to be perceived as particularly threatening. Yet, the finding that outgroup prejudice is not rooted in RWA is surprising, given the large number of studies supporting this relationship (e.g., Duckitt & Sibley, 2009; Ekehammar et al., 2004; Sibley & Duckitt, 2008). Perhaps, RWA-related prejudice is based solely on other factors (e.g., group status, perceived threat) rather than outgroup membership, and these factors were conflated with outgroup membership in earlier study designs.

Moreover, we found that SDO predicted stronger status bias (confirming H2b); however, this effect was not robust when RWA was also allowed to predict status bias (contrary to H2c). This suggests that SDO predicted stronger status bias due to shared variance with RWA. Exploratory analyses revealed that the effect of RWA on status bias was driven by the dimension of authoritarian submission. This dimension reflects the desire for strong leadership and submissive obedience to their authority. In a sense, this reflects a desire for social order and acceptance of hierarchy, similar to SDO. Moreover, SDO may not have been able to capture much variance due to a floor effect: on a scale from 1 (strong rejection of SDO) to 7 (strong endorsement of SDO; after recoding of reverse-coded items) the mean was only $M = 2.25$ and the median was $Mdn = 1$ for five of the twelve items. For comparison: for RWA, which used a scale from 1 (strong rejection of RWA) to 5 (strong endorsement of RWA) the mean was $M = 2.27$ and the median for all single items was at least $Mdn = 2$. The study utilized a convenience sample that balanced the categorization dimensions of gender and ethnicity but was skewed in other ways, such as overrepresenting students with low incomes, young age, and left-leaning political positions. The sample composition may partly explain the low average levels of SDO, as ethnic minorities and individuals on the political left typically exhibit lower levels of SDO (Pratto et al., 2006; Pratto et al., 1994).

It should be noted that the generalization of the results is limited due to the non-representativeness of the sample. Furthermore, the target groups were selected based on a preliminary study on salience of social groups in Germany but do not represent the full variety of visible social groups in German society. The group's socioeconomic status was calculated using the German subsample of the ESS 11, where in some cases only a few group members could be identified for the status calculations (e.g., Turks, Muslims, Unemployed). The calculated socioeconomic group status for these groups should therefore be interpreted with caution. In Study 2, we tested the same hypotheses using a different set of target groups and a representative sample.

Study 2

This study uses the German Social Cohesion Panel (SCP; Gerlitz et al., 2024) Wave 1, fielded in two parts from September 2021 to April 2022 (N = 17,031 and N = 9,171 in the first and second part, respectively) and Wave 3, fielded from May to September 2023 (N = 7,993; for a detailed description of the study and the participant characteristics see Gerlitz et al., 2024). The SCP is a household panel survey based on a probability sample representative of the German population conducted by the Data Center of the Research Institute Social Cohesion in cooperation with the German Socioeconomic Panel (SOEP). The analyses were pre-registered on OSF (https://osf.io/fy9sx).

Method

Participants. Participants were invited by mail and were sent an unconditional 5€ before completion of the first wave and another 10€ after completion of each wave of the survey. All of their adult household members were invited to participate in the survey, too, and incentivized 10€ after completion of each wave. Socioeconomic group status and the participants' shared group memberships were derived from the representative probability sample of the first wave (N = 13,053; sampled participants without their household members).

SDO, RWA and group memberships were assessed in Wave 1 and group evaluation in Wave 3. Each participant rated 17 target groups so the data is structured with observations of group evaluation nested in participants. This resulted in N = 114,205 valid observations of group evaluation from N = 6,845 participants after exclusion of missing data for Wave 1 and Wave 3, respectively.

Measures. ***Group Evaluation.*** Group evaluation was assessed in Wave 3. A one-item feeling thermometer was adapted to the German language: "Which feelings do you have about people who… ". Participants responded on an 11-point scale from 0 (*strong antipathy*) to 10 (*strong sympathy*). Attitudes toward 18 social groups were assessed. These target groups were selected to represent salient regional groups (e.g., living in a rural area), cultural groups (e.g., Christians), status-groups (e.g., people with university diploma) and political groups (e.g., leaning toward the political right). One social group (heterosexuals) was excluded from the analyses because respondents' group membership in this group could not be identified. This left 17 social groups for the present analyses. Table 4.3 presents all evaluated social groups and their average evaluation.

Social Dominance Orientation. SDO was assessed in the second part of Wave 1 using selected items from the SDO-7 Scale (α = .67; Ho et al., 2015; Saldarriaga et al., 2017). Four items were selected, two for each sub-dimension. One item from each sub-dimension had reversed phrasing. An example item is "An ideal society requires some groups to be on top and others to be on the bottom." Participants responded on a 5-point Likert scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

Right-Wing Authoritarianism. RWA was assessed in the second part of Wave 1 in the same way as in Study 1 (α = .82).

Socioeconomic Group Status. Socioeconomic group status was calculated the same way as in Study 1 but from the SCP sample including all anchor persons in Wave 1 (excluding

Table 4.3

Target Group Characteristics and Evaluation

	Evaluation *M* (*SD*)	*n* Evaluations	*n* Shared Group Membership	Group Status	*n* Group Status Calculation
City	6.22 (1.87)	6,666	4,615	0.55	7,111
Countryside	7.02 (1.7)	6,676	848	0.48	1,327
Western Germany	6.52 (2.07)	6,673	4,391	0.55	6,846
Eastern Germany	6.46 (1.78)	6,662	2,455	0.50	3,892
Without mig. back.	6.46 (1.64)	6,629	6,380	0.53	9,734
With mig. back.	5.71 (2.04)	6,642	442	0.50	971
Muslims	5.54 (2.21)	6,614	151	0.37	238
Christians	6.46 (1.91)	6,609	3,346	0.54	5,250
With tertiary degree	6.53 (1.69)	6,479	2,128	0.84	3,100
Without voc. training	5.35 (2.05)	6,635	290	0.23	482
Poor	5.66 (1.93)	6,359	1,226	0.21	2,256
Rich	4.75 (2.16)	6,360	1,367	0.88	2,190
Likes the Greens	4.73 (2.81)	6,606	1,280	0.65	1,146
Likes the AfD	2.16 (2.6)	6,604	300	0.40	260
Pol. left-leaning	4.92 (2.45)	6,615	2,762	0.57	4,063
Pol. right-leaning	2.77 (2.45)	6,635	1,706	0.53	2,641
Jews	6.52 (1.85)	6,596	9	0.53	18

Note. n evaluations = number participants evaluating the target group. *n* shared group membership: number of participants sharing group membership with the target group. Group status = socioeconomic group status calculated by averaging the socioeconomic status of all identified members. *n* Group Status Calculation = number of group members used for group status calculation.

all household members; N = 13,053). As in Study 1, we categorized the participants according to ESS-ISCED (Schneider, 2020) criteria based on their highest school- and highest professional education and reduced the number of categories to five by combining each of the two lowest, and the two highest levels of education to achieve a balanced categorization appropriate to the German educational system. Household income was assessed in Euros (€) and then, like in Study 1 adjusted to household size by dividing by the square root of the number of household members, and finally grouped into quintiles. Socioeconomic group status was calculated the same way as in Study 1. The number of group members across which status was averaged as well as the social groups' average status index is shown in Table 4.3. Across all 17 groups, the mean group status index was M = .52 (SD = .17).

Shared Group Membership. Participants' group memberships were asked in Wave 1 on all categorization dimensions in which we assessed their attitudes: region of residence, community size, immigration status, nationality, religious denomination and religiosity, political party preferences, and political positions. The categorizations either matched those we assessed attitudes toward or could be grouped to match them. From all target groups participants evaluated, they evaluated on average M = 4.89 (SD = 1.31) ingroups in Wave 3. Table 4.3 presents the evaluated groups with the number of their identified ingroup members. Note that the number of ingroup members differs considerably between groups. This is due to different proportions of group members within society as well as sampling bias.

Measurement Model. We applied multilevel structural equation modeling as in Study 1. The fit of the measurement model was satisfactory ($\chi 2$(56, N = 109782) = 1293, p < 0.001; CFI = 0.924; TLI = 0.894; RMSEA = 0.014; SRMR within = 0.000; SRMR between = 0.039).

Results

Preliminary Analyses. Means, standard deviations and interrelations of the within-person standardized shared group membership and group status, the RWA and SDO factor

scores, and group evaluation are displayed in Appendix 4B. As in Study 1, the data was hierarchically structured with observations of group evaluations (Level 1) nested in participants (Level 2) so that the same multilevel analyses were employed. The null model indicates that the Level 2 variance amounts to 18.2% of the total variance (ICC = .18). The Level 1 predictors shared group membership and group status were *z*-standardized within individuals to generate comparable and unbiased estimates (Enders & Tofighi, 2007). We used Mplus version 8.5 (Muthén & Muthén, 1998-2017) for the subsequent analyses. The model syntax can be found in the supplemental material [https://osf.io/zxy2c]. Given the large sample sizes at the level of observations, we used a significance level of $\alpha = .001$.

Main Analyses. We estimated the same eight models with increasing complexity as in Study 1[10]. We calculated all models using the sampling weights available in the German Social Cohesion Panel accounting for sampling bias and differential attrition between the first and second part of the first wave. The model results are presented in Table 4.4. Starting from the null model (Model 0), we added the predictors successively. Shared group membership (Model 1) and group status (Model 2) predicted group evaluation positively when entered separately into the model ($\beta = 0.19$, $SE < 0.01$, $p < 0.001$ and $\beta = 0.05$, $SE < 0.01$, $p < 0.001$, respectively), indicating evidence for ingroup bias and status bias. When entered into the model simultaneously (Model 3), both effects remained significant ($\beta = 0.19$, $SE < 0.01$, $p < 0.001$ for ingroup bias and $\beta = 0.02$, $SE < 0.01$, $p < 0.001$ for status bias). We thus accept H1a and H2a as we find evidence for ingroup bias and status bias, respectively, in the joint model.

[10] We estimated three additional models as reported in the preregistration, but do not present there here for reasons of simplicity. An overview of all eleven models and their results can be found in Appendix 4C.

Table 4.4

Model summaries Main Analyses

	M1	M2	M3	M4	M5	M6	M7
Evaluation ON Shared Group Membership	0.19*** (< 0.01)		0.19*** (< 0.01)				
Evaluation ON Group Status		0.05*** (< 0.01)	0.02*** (< 0.01)				
Evaluation ON SDO					-0.15*** (0.01)	-0.12*** (0.02)	-0.12*** (0.02)
Evaluation ON RWA				-0.09*** (0.01)		-0.05*** (0.01)	-0.05*** (0.01)
Ingroup Bias (RS) ON RWA				-0.01*** (< 0.01)		-0.01*** (< 0.01)	< 0.01 (< 0.01)
Ingroup Bias (RS) ON SDO							-0.04*** (< 0.01)
Status Bias (RS) ON RWA							< 0.01 (< 0.01)
Status Bias (RS) ON SDO					0.04*** (< 0.01)	0.04*** (< 0.01)	0.04*** (< 0.01)
LL	-152836	-155316	-152808	-232563	-189807	-266364	-266345
Parameters	4	4	5	44	20	58	60
AIC	305681	310639	305626	465213	379654	532844	532810

Note. RS = Random slope, LL = Log Likelihood, AIC = Alkaike Information Criterion.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

For assessing the effects of SDO and RWA on ingroup bias and status bias, we modeled the effects of shared group membership and group status on group evaluation as random slopes

(hereafter referred to as ingroup bias slope and status bias slope, respectively)[11]. When added to the model separately, RWA predicted the ingroup bias slope negatively (β = -0.01, SE < 0.01, p < .001; Model 4) with higher levels of RWA predicting weaker ingroup bias, and SDO predicted the status bias slope positively (β = 0.04, SE < 0.01, p < .001; Model 5) with higher levels of SDO predicting stronger status bias. These effects were robust when added to the model simultaneously (β = 0.01, SE < 0.01, p < .001 for ingroup bias regressed on RWA, and β = 0.04, SE < 0.01, p < .001 for status bias regressed on SDO; Model 6). Thus, we found support for H2b but not for H1b.

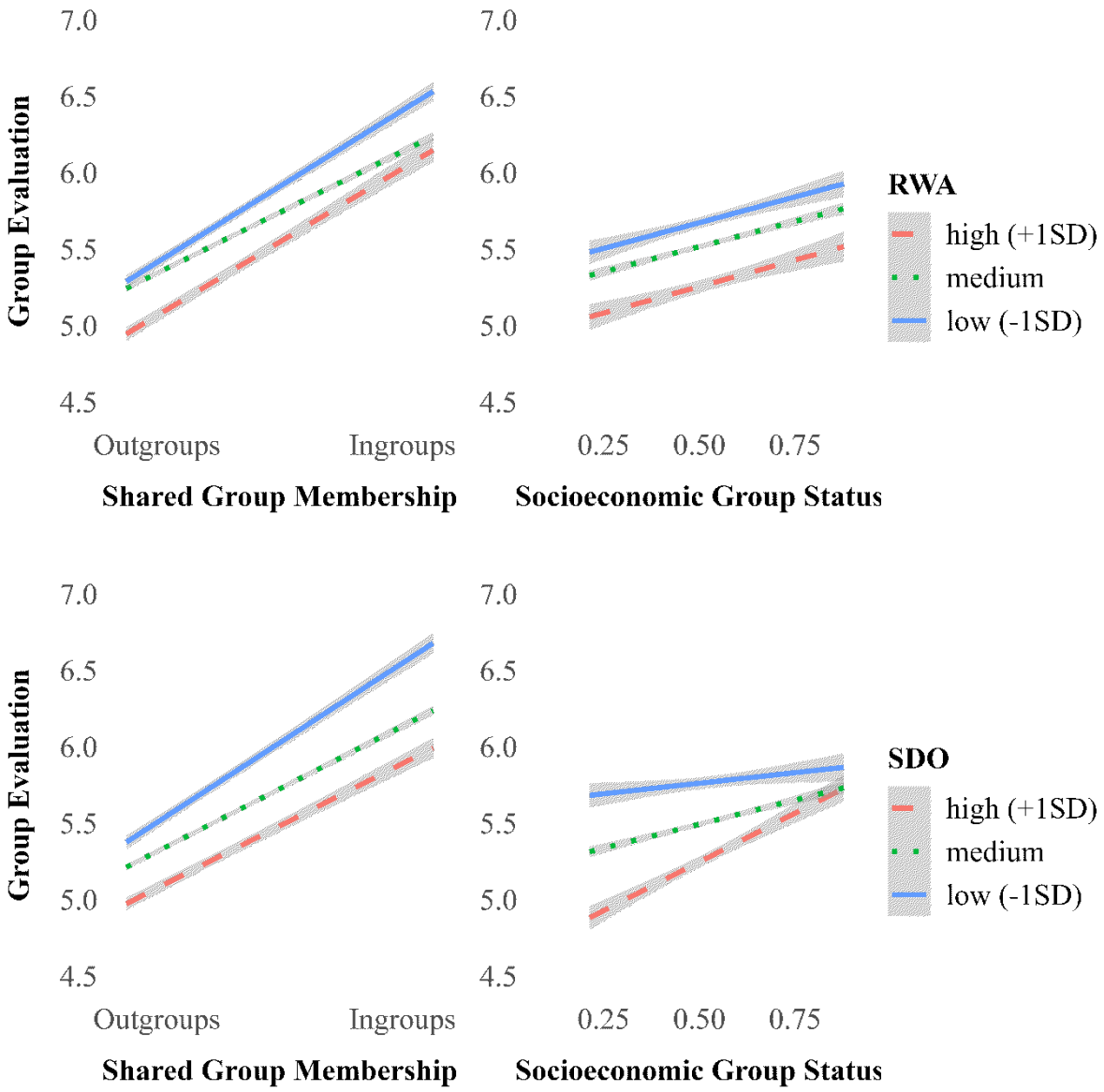
When RWA and SDO were both allowed to predict both slopes (Model 7), SDO predicted the status bias slope positively (β = 0.04, SE < 0.01, p < .001; indicating stronger status bias among those high in SDO) and the ingroup bias slope negatively (β = -0.04, SE < 0.01, p < .001; indicating weaker ingroup bias among those high in SDO) whereas RWA did neither predict status bias (β = 0.00, SE < 0.01, p = 0. 834) or ingroup bias (β = 0.00, SE < 0.01, p = 0. 407). This finding supports H2c (SDO predicts status bias more than RWA does) but not H1c (RWA predicts ingroup bias more than SDO does). Moreover, SDO and RWA predicted group evaluation negatively (β = -0.12, SE = 0.02, p < .001 and β = -0.05, SE = 0.01, p < .001, respectively). The interaction effects are plotted in Figure 4.2.

Exploration and Robustness Analyses. As a robustness check, we tested if the results of the full model (Model 7) replicate when excluding the two target groups that were evaluated

[11] In several models with random slopes, the residual variance of the status bias slope became negative. This can happen, among other, due to small sample sizes or skewed variables. We fixed the estimate to zero to prevent problems with the estimation of the models.

Figure 4.3

Associations between Group Evaluation and Shared Group Membership (Left), and Socioeconomic Group Status (Right), by Levels of RWA (Top) and SDO (Bottom)



much more negatively than all other groups: people sympathizing with the AfD and people with right political positions. Results reveal that the ingroup bias slope was now predicted positively by RWA ($\beta = 0.04$, $SE = 0.01$, $p < 0.001$) but not SDO ($\beta = 0.01$, $SE = 0.01$, $p = 0.141$), in line with Hypotheses H1b and H1c, respectively. The status bias slope was still predicted positively by SDO ($\beta = 0.08$, $SE = 0.01$, $p < 0.001$) but not RWA ($\beta = -0.01$, $SE = 0.01$, $p = 0.237$) in line

with H2b and H2c, respectively. Thus, when excluding these two groups from the analyses, as expected, RWA predicted stronger ingroup bias while SDO was unrelated to ingroup bias.

A further exploration revealed that the different results for including versus excluding the evaluation of the political right target groups was mainly driven by excluding the evaluation of people with political right views. It seems like people on the political right who also tend to be high on RWA and SDO did not evaluate their political ingroups very positively. Possibly, some participants who reported their political position to be right of the center did not identify as politically right-leaning and did not perceive politically right-leaning people as ingroup members. Indeed, when we categorize participants as politically left- or right-leaning only when they report more extreme scores (lower than 3 or higher than 3 on an 11-point scale from 0 (*left*) to 10 (*right*) political views), RWA predicted stronger ingroup bias in Model 7 without excluding the evaluation of the political right target groups ($\beta = 0.02$, $SE = 0.01$, $p < .001$).

Discussion

In Study 2, we found evidence for ingroup bias (confirming H1a) and status bias (confirming H2a). Furthermore, we found that SDO predicted stronger status bias (confirming H2b), whereas RWA did not (confirming H2c).

Regarding ingroup bias, we found that it was not predicted by RWA (contrary to H1b), while SDO predicted weaker ingroup bias. Robustness analyses showed that these effects were primarily due to the lack of ingroup bias among participants on the political right when evaluating the political right. In Germany, the "political right" is associated with its history of National Socialism and fascism, so evaluating this group might have been interpreted as evaluating the *extreme* political right. This could be why, in this study, the political right was strongly rejected even by moderately politically right-leaning participants. When the evaluation of political right groups was excluded from the analyses, RWA predicted stronger ingroup bias (in line with H1b), while SDO remained unrelated to ingroup bias (in line with H1c).

The present study is limited by its use of a one-item measurement of group evaluation, as its reliability cannot be assessed. It should also be noted that the target groups – similar to those in Study 1 – were selected based on their salience in German society but do not represent the full variety of visible social groups in Germany. For the calculation of the group's socioeconomic status, only a few group members could be identified for certain groups (e.g., Jewish participants). Therefore, the group status for those groups should be interpreted with caution.

General Discussion

Recent research has presented strong arguments for differentiating status bias from ingroup bias when studying prejudice (Bergh et al., 2016; Grigoryan et al., 2023; Speer & Boehnke, 2025). We investigated the ideological foundations of ingroup bias and status bias, proposing that ingroup bias is more strongly motivated by RWA than SDO, while status bias is more strongly motivated by SDO than RWA. The dual-process motivational model of prejudice postulates that SDO and RWA motivate prejudice in substantially different ways (Sibley et al., 2006). However, by employing a definition of prejudice as outgroup prejudice, it has not yet differentiated between ingroup bias and status bias.

We conducted two studies, differing in their samples and the operationalization of key variables, to test the same hypotheses. Study 1 (N = 209) measured attitudes toward 23 target groups in terms of warmth, competence, and social distance, using a balanced sample with respect to gender (men and women), ethnicity (Turks and Germans), migration background (yes/no), and religion (Christians, Muslims, and atheists). Study 2 (N = 6,715) measured attitudes toward 17 target groups using a sample representative of the German population living in private households.

We found evidence for ingroup bias in both studies. However, ingroup bias was not motivated by RWA in either study, contrary to our expectations. In Study 2, RWA was

associated with weaker ingroup bias only when participants who reported to be on the extreme political right were categorized as politically right-leaning. Status bias was evident in Study 2. In Study 1, participants showed status bias only in competence evaluations. SDO was associated with stronger status bias in both studies, as expected. This effect, however, was not robust against the inclusion of RWA in Study 1. The findings are summarized in Table 4.5.

Status bias was notably shown only by participants in Study 2, which may be due to the sample composition. The sample in Study 1 includes more ethnic minority participants than majority participants, who are more likely to have experienced marginalization based on their group memberships and are, therefore, possibly more critical of group-based inequalities, and status bias in particular. The sample in Study 2 is representative, including more ethnic majority group members, who are less likely to have experienced marginalization based on their group memberships and are, therefore, possibly less critical of group-based inequalities, and status bias in particular.

Irrespective of the strength of status bias, the present research broadly supports the idea that status bias is motivated by SDO, although this effect was not robust in Study 1. One reason for this could be the generally strong rejection of SDO in Study 1, which left little variation in SDO to predict status bias *(M* = 2.24, *SD* = 1, and a median of *Mdn* = 1 for five of the twelve items on a 7-point scale). In Study 2, SDO was endorsed more strongly than in Study 1 (*M* = 2.51, *SD* = 0.72, and single-item medians of 2 or higher on a 5-point scale). This might have resulted in a stronger predictive power of SDO in Study 2, as it was better able to differentiate between participants. Future research should further examine the robustness of SDO motivating status bias.

Research inspired by the dual-process model has found that individuals high in SDO, and occasionally those high in RWA, tend to exhibit prejudice against derogated or low-status

Table 4.5

Summary of Findings Across Studies

	Hypothesis	Study 1	Study 2
Ingroup Bias			
H1a	Ingroup Bias	Confirmed	Confirmed
H1b	RWA → Stronger Ingroup Bias	Rejected	Rejected; Confirmed when modifying categorization into political groups
H1c	RWA → Ingroup Bias > SDO → Ingroup Bias	Rejected	Rejected; Confirmed when modifying categorization into political groups
Status Bias			
H2a	Status Bias	Rejected; Confirmed for the evaluation of competence	Confirmed
H2b	SDO → Stronger Status Bias	Confirmed; Rejected after including the effect of RWA on status bias into the model	Confirmed
H2c	SDO → Status Bias > RWA → Status Bias	Rejected	Confirmed

outgroups (Asbrock et al., 2010; Cantal et al., 2015; Cohrs & Asbrock, 2009; Duckitt & Sibley, 2007). We qualify these findings by demonstrating that SDO motivates prejudice against low-status groups that are not necessarily outgroups, and that this applies to objective group status measured by the average socioeconomic resources of the group members. With these findings, we are the first to provide direct evidence that SDO is associated with the maintenance of actual

group-based inequalities through the endorsement of status bias, supporting predictions from Social Dominance Theory (Pratto et al., 2006).

The findings challenge the often-implicit assumption in related works that SDO and RWA motivate outgroup prejudice. The results of the present studies do not support the notion that SDO and RWA motivate a greater evaluative distinction between ingroups and outgroups. Only in Study 2 did we find that RWA motivated stronger ingroup bias after modifying the criteria for categorizing participants into political groups. The findings are consistent with two alternative interpretations: RWA-driven motivation for ingroup bias may be limited to specific groups, such as on categorization dimensions where people identify strongly with their ingroups, or where outgroups are perceived particularly threatening (Duckitt & Sibley, 2007). Alternatively, the dual-process model may have been mistaken in adapting the implicit definition of prejudice as outgroup prejudice, and neither SDO nor RWA may motivate prejudice that is based on shared vs. non-shared group membership. This interpretation resonates with the minimal group experiments reviewed earlier, which found only limited support for SDO and RWA motivating ingroup bias. The present findings suggest that this may also apply to actual social groups, which are more likely to elicit ingroup bias because they are more meaningful to their members than minimal groups and have likely shaped their members socialization experiences throughout their lives. Adopting the definition of prejudice as outgroup prejudice has been criticized in other areas of research (Bergh et al., 2016; Hodson, 2021) and may also apply to the dual-process model and the research it has inspired. Future research of SDO and RWA should acknowledge that some part of prejudice is commonly shared among ingroup and outgroup members and should consider the possibility that SDO and RWA are probably more predictive of such prejudice than of ingroup-outgroup dynamics. Future studies are therefore well-advised not to limit themselves to outgroup evaluations and to differentiate between evaluations grounded in outgroup-ness and those based on group status.

It should be noted that, although we did implement a time lag between the predictors and the outcome measures in both studies, the present analyses are correlational and cannot claim causality. The reverse causal paths from group evaluation to SDO, RWA, group membership, and group status are less likely because the predictors are more stable; however, reverse influences are possible, particularly over longer periods of time. Last but not least, it should be noted that we investigated general tendencies in group evaluation that are applicable across a variety of social groups. We acknowledge that the evaluation of each social group may be driven by motivations specific to that particular social group.

Conclusion

Across two studies, we investigated whether individual differences in SDO and RWA differentially motivate ingroup bias and status bias. We found that, broadly, SDO was associated with stronger status bias, while neither ideology was associated with stronger ingroup bias. The findings strongly support the need to explicitly address the distinction between ingroup bias and status bias in future research on the ideological foundations of prejudice.

Chapter 5: Friends Without Benefits? Contact Does Not Predict Weaker Status Bias

Abstract

The often implicit definition of prejudice as outgroup prejudice has been criticized for guiding studies to focus on group distinctions (i.e., intergroup or ingroup bias) while neglecting prejudices rooted in group-based hierarchies (i.e., status bias) that are often shared among both ingroup and outgroup members. Research on intergroup contact has so far not distinguished between the two biases, a blind spot of the field. The present study investigates the potential of contact to reduce ingroup bias and status bias cross-sectionally (Study 1, N = 571), longitudinally (Study 2; N = 6,995), and in a vignette experiment (Study 3; N = 3,007). Results reveal that the largest effects across all studies were the direct associations of contact with group evaluation, irrespective of group membership and group status. Moreover, contact predicted weaker ingroup bias but stronger status bias cross-sectionally and longitudinally, indicating that status bias is a form of prejudice that contact cannot reduce.

Prejudice research has been criticized for having its central concept of prejudice ill-defined implicitly or explicitly, namely as outgroup prejudice or ingroup bias (Bergh et al., 2016; Bergh & Brandt, 2023; Dixon et al., 2012; Hodson, 2021). This definition was coined in the early days of social psychology and has shaped the field ever since (Adorno et al., 1950; Tajfel & Turner, 1979). Despite all the advances it brought, it does not account for prejudices toward stigmatized low-status groups that are often shared even among their members, although such prejudices rooted in group-based inequalities have been widely acknowledged (Allport, 1954; Jost et al., 2004; Sidanius & Pratto, 1999; Sidanius, Pratto, & Rabinowitz, 1994; Tajfel & Turner, 1979). Recent advances have analytically and empirically distinguished between prejudice that is based on outgroup membership (vs. ingroup membership) and prejudice that is based on the groups' low status (vs. high status) as evaluative tendencies toward ingroup bias and status bias (e.g., Bergh et al., 2016; Grigoryan et al., 2023; Speer & Boehnke, 2025). Distinguishing between the two biases is crucial to better understand prejudice and how it can be reduced.

The two biases differ in their societal relevance: ingroup bias could, for example, describe both the prejudice of Whites against Blacks, and the prejudice of a homeless person against millionaires. Most people would consider the former prejudice more problematic than the latter because it maintains group-based inequalities. This example illustrates that ingroup bias does not in all cases maintain group-based inequalities. Status bias, in contrast, does maintain group-based inequalities consistently by definition as it is a prejudice targeted at groups that are already disadvantaged in a given society. A reduction of status bias could, therefore, reduce unfair treatment based on one's group's status, promote equal opportunities, and decrease inequalities in discriminatory experiences based on group memberships.

Given the remarkable difference between ingroup bias and status bias, it should be tested which bias can be mitigated by interventions designed to target prejudice. The study of

intergroup contact (Allport, 1954; Pettigrew, 1998; Pettigrew & Tropp, 2006), the most-studied intervention for reducing prejudice, heavily relies on prejudice defined as outgroup prejudice or ingroup bias, carrying the focus on intergroup distinctions in its very name. This focus is, arguably, predestined to neglect group-based inequalities and prejudices deriving from them. Intergroup contact research has addressed inequalities between groups as a dependency of intergroup dynamics, such as group status moderating the effects of contact with outgroup members on outgroup prejudice (e.g., Paolini et al., 2024). However, the evidence reviewed above suggests that ingroup bias and status bias should be studied as distinct evaluative tendencies. This way, the two biases with their different implications can be studied separately, and group-based inequalities influencing group evaluations across both ingroups and outgroups can be addressed. Moreover, actual inequalities between groups underlie status bias, but have formerly only been addressed as informed estimations about which out of two or three groups had higher vs. lower status (e.g., Paolini et al., 2024). It has never before been measured in terms of the groups' average access to resources, as conceptualized in Social Dominance Theory (Sidanius & Pratto, 1999), reflecting gradual differences in actual group status.

Against this background, distinguishing between ingroup bias and status bias is promising for enabling a direct assessment of whether contact can reduce prejudice based on outgroup membership (vs. ingroup membership) and low objective group status (vs. high group status), providing insights into how contact effects the maintenance of group-based inequalities through prejudice. The present research is the first of its kind to differentiate between contact effects on ingroup bias and status bias, doing so across three studies (cross-sectional, longitudinal, and a vignette experiment) and a variety of social groups.

Forms of Prejudice: Ingroup Bias and Status Bias

When studying the prejudice-reducing effect of intergroup contact, prejudice is considered almost exclusively in terms of outgroup prejudice or ingroup bias (Pettigrew &

Tropp, 2006). It is unclear to what extent it reduces status bias, the tendency to prefer groups with much power and many resources over groups with limited power and resources (Speer & Boehnke, 2025), which has been described by major theories of the field, such as Social Dominance Theory (Sidanius & Pratto, 1999) and System Justification Theory (Jost et al., 2004). Ingroup bias and status bias are often confounded in empirical studies, such as when attitudes toward low-status outgroups are assessed among members of high-status groups. Recent research efforts have helped to clearly conceptualize and methodologically differentiate status bias from ingroup bias (Bergh et al., 2016; Grigoryan et al., 2023; Speer & Boehnke, 2025). In order to study both ingroup bias and status bias, neither should be included in the definition of prejudice. I, therefore, employ the minimal definition of prejudice as a pre-judgment about a social group or an individual based on their group membership (American Psychological Association, n.d., b.), and use the term 'group evaluation' with the same meaning to emphasize its neutrality.

Ingroup or intergroup bias, the "systematic tendency to evaluate one's own membership group (the in-group) or its members more favorably than a non-membership group (the out-group) or its members" (Hewstone et al., 2002, p. 576), has been found for a variety of groups. Furthermore, it has been acknowledged that this pattern does not apply to all groups and situations generically, and a preference for outgroups can occur particularly for low-status groups and under certain conditions (Bettencourt et al., 2001; Sidanius, Pratto, & Rabinowitz, 1994; Tajfel & Turner, 1979). This perspective interprets ingroup bias as an observable pattern, i.e., evaluating ingroups more positively than outgroups; or evaluating outgroups more positively than ingroups in case of outgroup favoritism. As a consequence, a finding of no preference for ingroups over outgroups is interpreted as the absence of ingroup bias. When studying multiple biases, such as ingroup bias and status bias, this perspective has limited use. Alternatively, the same finding of no preference for the ingroup over an outgroup can mean that

ingroup bias is present, but another opposing bias is equally strong. From this perspective, group evaluation is determined by the composition of multiple biases that can align or diverge. This perspective views ingroup bias and status bias as evaluative tendencies instead of observable patterns of evaluation. Consequently, ingroup bias and status bias can either align with each other or oppose each other, ultimately resulting in a specific group evaluation depending on their strengths in a given situation (e.g., preferring ingroups over outgroups, high-status groups over low-status groups, or no preference; Speer & Boehnke, 2025).

The distinction between ingroup bias and status bias is promising to apply to intergroup contact research for understanding which bias it can potentially reduce, and consequently, how it affects the maintenance of group-based inequalities through prejudice. In order to study the two biases, I adopt the perspective of viewing them as evaluating tendencies that, together, shape patterns of group evaluation.

Intergroup Contact and Group-Based Inequalities

In his seminal book "The Nature of Prejudice," Gordon Allport (Allport, 1954) has formalized the contact hypothesis: contact with an outgroup member may generalize to more positive attitudes toward the outgroup. Further studies have found strong support for the association of intergroup contact with prejudice (Davies et al., 2011; Lemmer & Wagner, 2015; Pettigrew & Tropp, 2006), although advancements in study designs, statistical methods, and preregistration practices have brought forward mixed evidence about the temporal and causal relationship between prejudice and intergroup contact (e.g., Friehs et al., 2024; Hodson & Meleady, 2024; Kotzur & Wagner, 2021; Paluck et al., 2019).

Meanwhile, it has been argued that the ultimate goal of intergroup contact should go beyond mere intergroup liking: interventions should aim for reducing inequalities between groups (Reicher, 2012). However, evidence for how intergroup contact effects group-based inequalities is mixed (Reimer et al., 2017; Sengupta et al., 2023). A meta-analysis of 98 studies

found that the associations of intergroup contact with perceived injustice, collective action, and support for reparative policies were negative on average, but considerably variable across studies (Reimer & Sengupta, 2023).

What has not been considered so far is that group-based inequalities are maintained when prejudices are based on group status: evaluating group members based on their group's status puts socioeconomically disadvantaged groups at further disadvantage. The distinction between status bias and ingroup bias allows to assess this prejudice based on group status. Distinguishing contact effects on ingroup bias and status bias is thus promising for understanding the role contact plays in promoting or hindering equality among groups through altering prejudices.

How is Intergroup Contact Associated With Ingroup Bias and Status Bias?

The present literature on intergroup contact provides indications regarding which bias contact may reduce. Firstly, the proposed mediators through which intergroup contact reduces prejudice may be expected to apply differently to the reduction of ingroup bias and status bias. Proposed mediators are manifold (e.g., see Tausch & Hewstone, 2010). Among others, contact can reveal similarities and thus liking (Pettigrew, 1998), reduce intergroup anxiety (Stephan & Stephan, 1985; van Zalk et al., 2021) and threat perceptions (Stephan et al., 2000), develop empathy and perspective taking (Aberson & Haag, 2007), facilitate common or dual group identity (Gaertner et al., 1996), and enhance the acknowledgement that one's ingroups' norms and lifestyles are not the only acceptable ones (Pettigrew, 1997). I argue that these mediators pertain rather to other-ness and outgroup-ness than to group hierarchies and should thus result in a greater reduction of ingroup bias than status bias.

Secondly, indications for whether intergroup contact reduces status bias can be found in its effects on Social Dominance Orientation (SDO; Pratto et al., 1994), because SDO was found to be associated with status bias (Speer & Grigoryan, 2025). Several studies suggest that

intergroup contact may reduce levels of SDO (Dhont et al., 2014; Meleady et al., 2020; Shook et al., 2016; Van Laar et al., 2005; Vezzali et al., 2018). Moreover, intergroup contact can be expected to reduce status bias if it is particularly effective for individuals with high levels of SDO. Studies testing this link found contact to be either equally effective for individuals with high and low levels of SDO (e.g., Asbrock et. al., 2012, Study 1; Kteily et al., 2017) or to be less effective for those with high levels of SDO (e.g., Asbrock et al., 2012, Study 2; Asbrock et al., 2013) with little evidence for the reverse pattern (e.g., Kteily et al., 2017). Evidence for how SDO mediates and moderates the effects of contact is thus mixed, with contact being associated with lower levels of SDO but not necessarily being more effective for individuals with high levels of SDO. Given that SDO motivates status bias, I infer from these findings that contact may either be associated with weaker status bias or not associated with it.

Thirdly, studies on intergroup contact with advantaged vs. disadvantaged outgroups provide further indications of whether contact reduces ingroup bias, status bias, or both. A stronger reduction in prejudice among advantaged groups in contact with disadvantaged groups than vice versa would indicate that contact reduces both biases. An evenly strong prejudice reduction for contact with advantaged vs. disadvantaged groups would indicate that contact reduces ingroup bias only. A meta-analysis by Tropp and Pettigrew (2005) found somewhat stronger contact effects for majority samples in contact with minority groups (r = -.23) than for minority samples in contact with majority groups (r = -.18). Two more recent meta-analyses report comparable prejudice-reducing effects of intergroup contact for advantaged and disadvantaged groups: Van Assche et al. (2023) found equally strong effects for studies that also addressed perceived threat (β = .19 for contact with advantaged and β = .18 for contact with disadvantaged groups) and studies that also addressed perceived discrimination (β = .22 for contact with advantaged and β = .20 for contact with disadvantaged groups), and Paolini et al. (2024) found equally strong effects for studies that addressed positive and negative contact.

From these findings I infer that contact predominantly reduces ingroup bias and does little, if anything, to reduce status bias.

Based on the literature reviewed in this and the previous section, the following hypotheses will be put to the test in the present study.

H1: Individuals show ingroup bias, that is, shared group membership affects group evaluation positively

H2: Individuals show status bias, that is, group status affects group evaluation positively

H3: Contact reduces ingroup bias, that is, it negatively moderates the effect of shared group membership on group evaluation

H4a: Contact does not reduce status bias, that is, it does not negatively moderate the effect of group status on group evaluation (strong version of H4)

H4b: Contact does reduce status bias, but to a lesser extent than it reduces ingroup bias (weak version of H4)

Additionally, contact effects may differ depending on the groups in contact. Here, I draw on the distinction between belief-indicative and status-indicative groups (Grigoryan et al., 2023), i.e., groups that are primarily indicative of their members' beliefs (e.g., religious groups) or status (e.g., income groups), respectively, to explore whether contact is differentially related to ingroup bias and status bias for the evaluation of these kinds of groups.

The Present Research

In the present research, the contact effects on ingroup bias and status bias are tested across three studies that primarily differ in their sample and study design. Study 1 uses data from the pilot study of the German Social Cohesion Panel (SCP; N = 571) and will test the associations of contact with ingroup bias and status bias cross-sectionally. Cross-sectional associations between contact and prejudice could be caused by contact reducing prejudice or prejudice reducing contact intentions, known as the causal sequence problem (Pettigrew &

Tropp, 2006). Therefore, Study 2 tests the temporal sequence of contact preceding ingroup bias and status bias in a longitudinal design, using two waves from the SCP (N = 6,995). Finally, in real encounters, evaluations are typically based on more than one group membership, e.g. on gender *and* ethnicity. Study 3 tests the association of contact with ingroup bias and status bias when fictitious persons with multiple group memberships are evaluated, using a vignette study implemented in the fourth wave of the SCP (N = 3,007). Together, the three studies provide initial evidence on the associations of contact with ingroup bias and status bias cross-sectionally, longitudinally, and in a multiple categorization scenario.

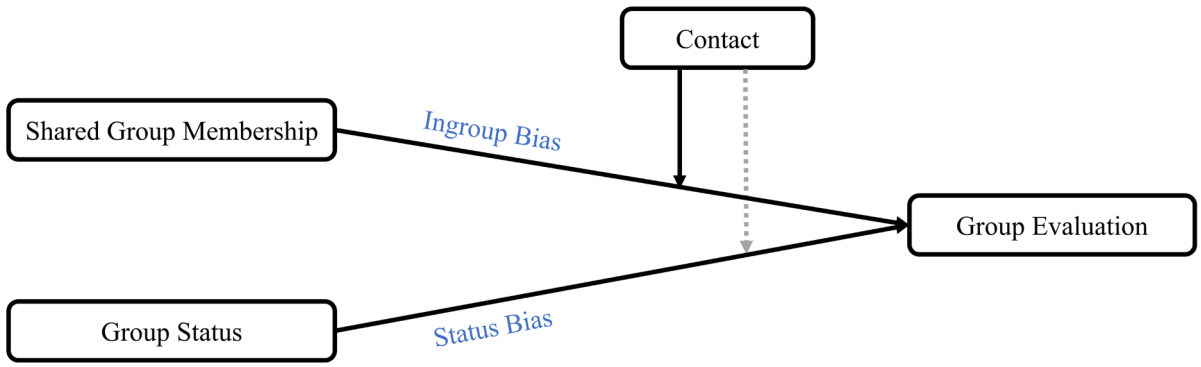
The empirical differentiation of status bias from ingroup bias requires studying the evaluation of multiple groups, including groups that are ingroups and those that are outgroups to the individuals who evaluate them. Similarly, it requires studying the evaluation of groups that differ in their status. This way, status bias can be measured by examining how the groups' status predicts group evaluations. Intergroup contact is most often studied as the contact of high-status groups with low-status outgroups (Paolini et al., 2024). Widening the focus to include a variety of social groups, including high-status groups, has been argued to be necessary for understanding basic processes in intergroup contact (Paolini & McIntyre 2019; Paolini et al., 2024), particularly in the face of mixed evidence of the effectiveness of contact to reduce prejudice and group-based inequalities. The present research thus addresses evaluations of a variety of social groups among heterogeneous samples, allowing participants to evaluate groups with high and low status, as well as ingroups and outgroups.

Social Dominance Theory (Sidanius & Pratto, 1999) and System Justification Theory (Jost et al., 2004) emphasize the importance of actual (group-based) material and power differences, as these shape and constrain the group members' opportunities. Therefore, measuring objective (e.g., socioeconomic) group status is crucial for drawing accurate conclusions about prejudices that arise from actual group-based inequalities. Previous intergroup contact research has

addressed objective group status in terms of informed estimations of which of two or three groups held higher vs. lower status. In the present study, objective socioeconomic group status was measured to assess evaluations based on actual inequalities, to avoid relying on potentially biased perceptions, and to capture gradual differences in group status. Socioeconomic group status was calculated in each study as the average socioeconomic status of all group members, based on data from large representative samples. Socioeconomic status was operationalized as an index combining household income and highest level of education. For example, to determine the socioeconomic status of Christians, the average status was calculated across those respondents who reported to be Christians.

Figure 5.1

Theoretical Model: Effects of Contact on Ingroup Bias and Status Bias



The theoretical model is presented in Figure 5.1. Survey participants evaluated multiple social groups in Studies 1 and 2 (similar to the approach taken by Brandt, 2017 and Speer & Boehnke, 2025), and multiple fictitious persons in Study 3 (similar to the approach taken by Grigoryan et al., 2023). For each observation of a participant evaluating a social group (or vignette), their (number of) shared group membership(s) can be determined – that is, whether the participant is a member of the group being evaluated, or how many group memberships they share with the fictitious person. If shared group membership predicts prejudice, it provides

evidence for ingroup bias. Similarly, if the socioeconomic group status predicts prejudice, it provides evidence for status bias. In Study 3, the group-based socioeconomic status of the fictitious person is calculated as the average status across all its group memberships. The effects of contact on ingroup bias and status bias will be formally tested as interactions between contact and shared group membership, and between contact and group status, respectively. If contact is associated with weaker ingroup bias or status bias, this is reflected in negative interaction effects.

Study 1

In the first study, I examined the relationships of intergroup contact with ingroup bias and status bias cross-sectionally using a nationally-representative sample. This study tests H3 and H4[12] and the analyses were pre-registered on OSF (https://osf.io/a5hz3)[13].

Method

Participants. Study 1 uses data from the pilot study of the German Social Cohesion Panel (SCP; Task Force FGZ-Datenzentrum, 2022), a quantitative household panel conducted by the data center of the Research Institute Social Cohesion (RISC) fielded from April to September 2020 (N = 868). The RISC data center used the pilot study, among others, to pre-test the study design and to gain first substantive insights on topics related to social cohesion (see FGZ-Datenzentrum, 2022). The study was sampled from German participants of the European Social Survey 2016 (ESS 8). After completion of the ESS survey, participants were invited to participate in a follow-up study. Those who agreed to it (i.e., anchor persons) and all

[12] H1 and H2 were not tested as a similar test has been conducted in previous research using the same dataset Speer, A., & Boehnke, K. (2025). *Multiple Forms of Prejudice? Ingroup Bias, Status Bias, and Similarity-Attraction as Distinct Biases Shaping Group Evaluation. [Manuscript in preparation]*.

[13] See Appendix 5A for adjustments made to the preregistered methods.

their household members aged 17 or older received mailed invitations to complete the study, either online or via pen-and-paper. Anchor persons were compensated 15€ and asked for consent to connect their responses to the two surveys. We excluded participants for whom we did not have responses to both surveys available, that is, all household members (N = 198) and participants who did not agree to connect their responses to the two surveys or for whom it was technically impossible (N = 80). This resulted in a final sample of N = 589 participants, each evaluating 16 social groups, yielding a total of N = 9,424 potential observations. After case-wise deletion of missing observations on any predictor or the dependent variable, the dataset included N = 8,993 valid observations from N = 571 participants (52% female, M (SD) age = 50 (16); see column 'shared group membership' in Table 5.1 for participants' group memberships) that are held constant for all subsequent analyses.

Measures. ***Group Evaluation.*** Group evaluation was measured with a one-item social distance measure: "How pleasant would it be if a member of the following groups married into your family?" on an 11-point scale from 1 (*very unpleasant*) to 11 (*very pleasant*). The evaluation of 17 target groups was measured, of which one (homosexuals) was excluded from the analyses because it could not be determined whether participants belonged to this group. The remaining 16 target groups represent four salient cultural groups (e.g., Christians), four status groups (e.g., people with university diploma), four political groups (e.g., leaning toward the political right), and four regional groups (e.g., living in a rural area). Table 5.1 presents all target groups and their average evaluation.

Contact. Contact was measured regarding all target groups for which evaluation was assessed. It was measured with one item that assessed the quantity of acquaintances, defined as "people whose names you know and with whom you would have a brief conversation if you met them": "How many of your acquaintances…" e.g., "…have a university degree?" Participants responded on a six-point scale ranging from 1 (*none*) to 6 (*all of them*).

Table 5. 1 Target Group Characteristics and Evaluation

	Evaluation *M* (*SD*)	*n* Evalua-tions	*n* Shared Group Member-ship	Group Status	*n* Group Status Calcula-tion
City	6.51 (1.6)	532	162	0.57	741
Countryside	6.84 (1.74)	537	174	0.49	812
Western Germany	6.64 (1.51)	533	365	0.53	1,696
Eastern Germany	6.40 (1.51)	533	187	0.47	839
German citizenship	7.26 (1.94)	538	538	0.52	2,389
With mig. back.	6.17 (1.47)	525	36	0.43	252
Muslims	4.72 (2.02)	508	5	0.26	82
Christians	6.75 (1.83)	499	198	0.53	924
With tertiary degree	7.07 (1.71)	526	201	0.82	719
Without voc. training	4.71 (1.87)	521	29	0.22	102
Poor	5.03 (1.69)	508	78	0.19	561
Rich	6.51 (1.88)	510	117	0.87	482
Likes the Greens	6.37 (2.01)	442	53	0.66	197
Likes the AfD	2.99 (2.30)	462	23	0.45	95
Pol. left-leaning	5.58 (2.33)	434	249	0.55	1,081
Pol. right-leaning	3.26 (2.22)	443	107	0.52	493

Note. n evaluations = number participants evaluating the target group. *n* shared group membership: number of participants sharing group membership with the target group. Group status = socioeconomic group status calculated by averaging the socioeconomic status of all identified members. *n* Group Status Calculation = number of group members used for group status calculation.

Shared Group Membership. Participants' group memberships were provided in the ESS 8 and added to the SCP pilot study data. They were assessed on all categorization dimensions that attitudes were assessed on: region of residence, community size, immigration status,

nationality, religious denomination, political party preferences, and political positions. The categorizations either directly matched those used to assess group evaluation or could be grouped accordingly. This way a variable was created for each observation of participants evaluating target groups, indicating whether they evaluated an outgroup (coded as 0) or an ingroup (coded as 1). Out of the 16 target groups that participants evaluated, an average of M = 4.32 (SD = 1.4) were ingroups to them. Table 5.1 presents the number of group members in the sample. Note that the number of group members differs between target groups due to sampling bias and different proportions of group members within society.

Socioeconomic Group Status. The average socioeconomic status of social groups was calculated using the German subsample of the ESS 8 (N = 2,852). Highest level of education was provided according to ESS-ISCED (Schneider, 2020) criteria. The number of categories was reduced to five by combining the two lowest and the two highest levels of education to achieve a balanced categorization appropriate to the German educational system. Household income was provided in deciles and converted to the approximate income in € (European Social Survey, 2016). It was then divided by the square root of the number of household members to adjust for household size, and grouped into quintiles, as done previously by Groh-Samberg et al. (2023). Participants' socioeconomic status was calculated by standardizing their categorized income and education onto a scale from 0 to 1 and averaging it to a status index. Then, socioeconomic group status was calculated for each target group by averaging the status index across all its group members. For example, the status of religious Muslims was calculated by averaging the status index across all respondents who reported to be both Muslim and religious. The number of group members included in this calculation varied by target group, depending on the number of participants who identified as ingroup members. The calculated group status and the number of group members used for calculating the group status are shown in Table 5.1. Across all 16 target groups, the mean group status index was M = .50 (SD = .19).

Results

Preliminary Analyses. All predictors (shared group membership, group status, and contact) were positively correlated. Shared group membership and contact were most strongly correlated (r = .61, p < .001), indicating that participants had more contact with groups they belonged to than with those they did not. Descriptive information of the dependent and independent variables is provided in Appendix 5B. The model syntax for all studies can be found in the supplemental material [https://osf.io/dqa56].

Main Analyses. This study employed multilevel analyses with group evaluations nested in persons (ICC = 0.08; Model 0). Eight models were calculated in which the predictors were added successively. The model summaries are displayed in Table 5.2. Shared group membership and group status predicted group evaluation positively (β = 0.25, SE = 0.01, p < 0.001, and β = 0.22, SE = 0.01, p < 0.001, respectively; Model 3). Contact predicted group evaluation positively (β = 0.35, SE = 0.01, p < 0.001; Model 4).

Contact was associated with weaker ingroup bias: it negatively moderated the effect of shared group membership on group evaluation (β = -0.08, SE = 0.01, p < 0.001; Model 7), providing evidence for H3 (see left graph in Figure 5.2). Moreover, contact was associated with stronger status bias: it positively moderated the effect of group status on group evaluation (β = 0.04, SE = 0.01, p = 0.007; Model 7), providing evidence for H4a (see right graph in Figure 5.2). The full model (Model 7) fitted better than the model without the interaction terms (Model 4; $\Delta\chi^2$ = 57.47, p < 0.001), although the pseudo R^2 did not increase (R^2 = .20 in both models).

Exploratory and Robustness Analyses. It was explored whether the associations of contact with ingroup bias and status bias differed between the evaluations of belief-indicative groups (migration background, religion, political party, political position) and status-indicative groups (education, income). Results show that contact predicted more positive group evaluations for belief-indicative (β = 0.50, SE = 0.02, p < .001) and status-indicative groups

Table 5.2

Model Summaries Main Analyses

Effect	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
				Fixed effects				
Intercept	0.003	0.003	0.004	0.004	0.004	0.05**	-0.004	0.04*
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Shared Group Membership		0.29***		0.25***	0.03**	0.06***	0.03**	0.06***
		(0.01)		(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Group Status			0.27***	0.23***	0.21***	0.19***	0.23***	0.22***
			(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Contact					0.34***	0.37***	0.34***	0.37***
					(0.01)	(0.01)	(0.01)	(0.01)
Shared Group Membership x Contact						-0.07***		-0.08***
						(0.01)		(0.01)
Group Status x Contact							0.05***	0.05***
							(0.01)	(0.01)

Table 5.2 (continued)

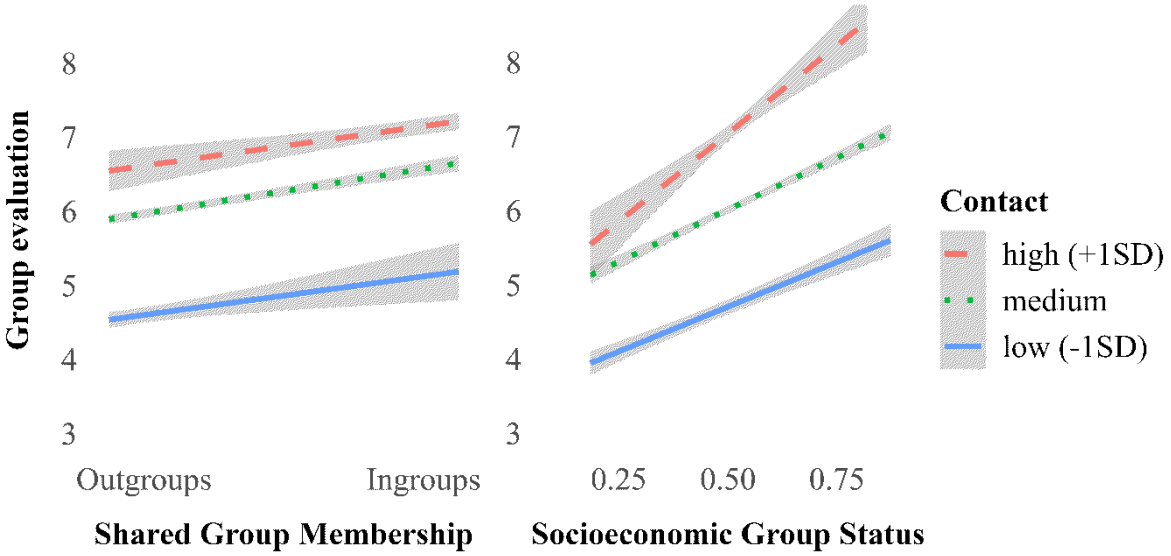
Effect	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
				Random effects				
Variance components								
Level 1	0.92	0.84	0.85	0.78	0.71	0.70	0.71	0.70
Level 2	0.08	0.08	0.08	0.08	0.09	0.09	0.09	0.09
				Goodness of fit and model information				
N Participants	550	550	550	550	550	550	550	550
N Observations	8,051	8,051	8,051	8,051	8,051	8,051	8,051	8,051
Pseudo r^2		0.08	0.07	0.13	0.20	0.21	0.20	0.21
Deviance	22,646	21,904	21,982	21,392	20,640	20,592	20,628	20,578
AIC	22,652	21,925	22,004	21,423	20,680	20,642	20,677	20,636
Log-Likelihood	-11,323	-10,959	-10,998	-10,707	-10,334	-10,314	-10,332	-10,310
$\Delta\chi^2$		742^{***}	664^{***}	$1{,}254^{***}$	752^{***}	47.45^{***}	11.68^{***}	62.26^{***}

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

$^{\dagger}\, p \leq .10.\ ^{*}\, p < .05.\ ^{**}\, p < .01.\ ^{***}\, p < .001.$

Figure 5.2

Associations between Group Evaluation and Shared Group Membership (Left), and Socioeconomic Group Status (Right), by Amount of Contact



(β = 0.13, *SE* = 0.02, $p < .001$). Moreover, contact was associated with weaker ingroup bias (β = -0.16, *SE* = 0.02, $p < .001$) and stronger status bias (β = 0.22, *SE* = 0.03, $p < .001$) for the evaluation of belief-indicative groups. For the evaluation of status-indicative groups, contact was neither associated with ingroup bias (β = -0.003, *SE* = 0.02, $p = .89$) nor status bias (β = 0.02, *SE* = 0.02, $p = .28$).

Lastly, I tested whether the findings were robust against four alternative methodological specifications (see Appendix 5C for more details). Results show that the association between contact and weaker ingroup bias was robust against all alternative methodological specifications. The association between contact and status bias was either positive (consistent with the main analyses), or non-significant, both of which support H4a, expecting that contact does not reduce status bias.

Discussion

I expected that contact reduces ingroup bias, the tendency to prefer ingroups over outgroups (H3). This study provided cross-sectional evidence supporting H3 as contact predicted weaker ingroup bias. This finding is also consistent with the majority of cross-sectional studies testing this link (e.g., Davies et al., 2011 ; Lemmer & Wagner, 2015; Pettigrew & Tropp, 2006).

Furthermore, I expected that contact does either not reduce status bias, the tendency to prefer high-status groups over low-status groups (H4a), or does so to a lesser extent than it reduces ingroup bias (H4b). Study 1 provided cross-sectional evidence supporting H4a as contact was even associated with stronger status bias: the evaluative tendency for preferring high-status groups over low-status groups was enhanced when contact was high. Considering that prejudice against groups with low socioeconomic status can be regarded as especially problematic, this finding points to a limitation of the effectiveness of intergroup contact: groups with low socioeconomic status may profit least from it. This is consistent with the meta-analytic findings that intergroup contact was negatively associated with attitudes toward inequality (perceived injustice, collective action, and support for reparative policies; Sengupta et al., 2023).

Exporatory analyses revealed that the findings of contact predicting weaker ingroup bias and stronger status bias were largely due to the evaluation of belief-indicative groups. For status-indicative groups, more contact was still associated with more positive evaluations, but moreover, it neither predicted ingroup bias nor status bias. Status-indicative groups may thus still profit from contact, but neither does this reduce the distinction people make between ingroups and outgroups, nor between high-status groups and low-status groups.

This study thus provides the first evidence for that contact does reduce prejudice and ingroup bias but not status bias. However, it was cross-sectional by design and is thus not

informative about the direction of the relationships. Study 2 uses a longitudinal design to address the causal sequence problem.

Study 2

Study 2 aimed to replicate the findings from Study 1 using a longitudinal design and a larger representative sample. Figure 5.3 shows that additionally to the general theoretical model, there is an autoregressive path of group evaluation at an earlier point in time predicting group evaluation at a later point in time. This enables the assessment of the effects of contact as temporally preceding ingroup bias and status bias. As Study 1, this study tested H3 and H4[14] and the analyses were pre-registered on OSF (https://osf.io/drqmg)[15].

Method

Participants. This study uses the German Social Cohesion Panel (SCP; for a detailed description of the survey see Gerlitz et al., 2024) Wave 1 (fielded in two parts from September 2021 to July 2022; $N = 17{,}031$) and Wave 3 ($N = 7{,}993$; fielded from May to September 2023). The SCP is a panel survey based on a probability sample of the German population register, conducted by the data center of the Research Institute Social Cohesion (RISC) in cooperation with the German Socioeconomic Panel (SOEP). Participants were invited by mail and were sent an unconditional 5€ before completion of the first wave, and incentivized with an additional 10€ after completing each wave of the survey. Sampled participants (anchor persons) were asked to report all their adult household members, who were then invited to participate in the survey, too, and incentivized with 10€ after completion of each wave. As in Study 1, each

[14] H1 and H2 were not tested as a similar test has been conducted in previous research using the same dataset Speer, A., & Boehnke, K. (2025). *Multiple Forms of Prejudice? Ingroup Bias, Status Bias, and Similarity-Attraction as Distinct Biases Shaping Group Evaluation. [Manuscript in preparation]*.

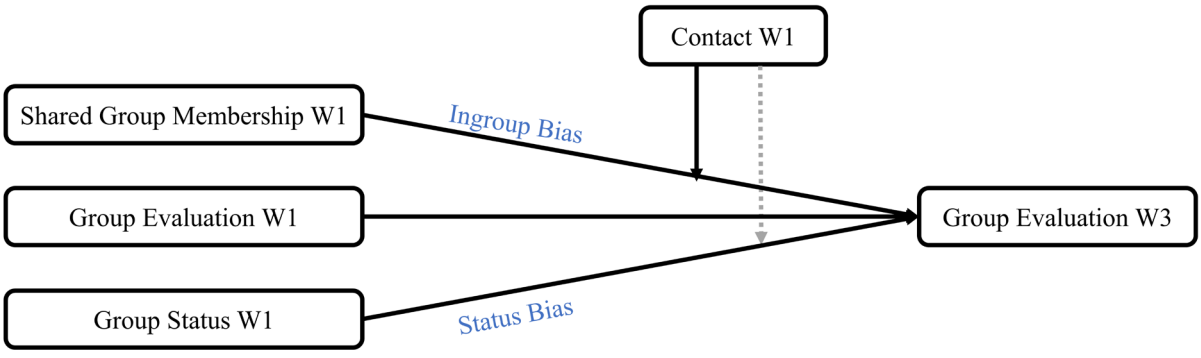
[15] See Appendix 5A for adjustments made to the preregistered methods.

participant evaluated several social groups so that the data was structured with observations of group evaluation nested in participants. This resulted in N = 101,529 observations of group evaluation from N = 6,995 participants after casewise deletion of missing data at the level of observations.

Measures. ***Group Evaluation.*** Group evaluation was assessed in Wave 1 and Wave 3 regarding the same groups as in Study 1 with the following exceptions. Evaluation of one additional group (religious Jews) was assessed in Wave 3, but not in Wave 1, and could thus not be used for the present analyses. The operationalization of assessing group evaluation regarding migration background differed between Wave 1 and Wave 3: In Wave 1, evaluation of people "with German nationality" and people "who migrated to Germany" was assessed, in Wave 3 evaluation of people "without migration background" and "with migration background" was assessed. These categorizations are somewhat different (e.g., someone who has not migrated to Germany can have a migration background), but may trigger similar associations

Figure 5.3

Study 2: Theoretical Model with an Additional Autoregressive Path for Group Evaluation



Note. W1 and W3 refer to Wave 1 and Wave 3 of the German Social Cohesion Panel.

and were evaluated similarly favorably (see Appendix 5D). In both waves, a one-item feeling thermometer was adapted to German language: "Which feelings do you have about people who…". Participants responded on an 11-point scale from 0 (*strong antipathy*) to 10 (*strong sympathy*). Table 5.3 presents all evaluated social groups and their average evaluation in both waves.

Contact. Contact with the target groups was assessed in Wave 1 for the same groups that were evaluated. It was measured the same way as in Study 1, as the fraction of acquaintances who were members of a particular group.

Shared Group membership. Participants' group memberships were assessed in Wave 1 across all categorization dimensions on which their attitudes were measured: region of residence, community size, immigration status, nationality, religious denomination, political party preferences, and political position. Participants were members of on average $M = 4.68$ ($SD = 1.41$) groups they evaluated. Table 5.3 presents the target groups along with the number of participants who shared their group membership.

Socioeconomic Group Status. Socioeconomic group status was derived from the sample of anchor persons in Wave 1 ($N = 13{,}055$; i.e., the sampled participants without their household members) to ensure representativeness. Highest level of education was assessed based on both the highest school education and the highest professional education. Participants' level of education was categorized according to ESS-ISCED criteria (Schneider, 2020) and reduced to five categories, as in Study 1. Household income was assessed in euros (€), and was adjusted for household size and grouped into quintiles, as in Study 1. Table 5.3 presents the calculated status index of each group.

Table 5.3

Target Group Characteristics and Evaluation

	Evaluation *M* (*SD*)	*n* Evaluations	*n* Shared Group Membership	Group Status	*n* Group Status Calculation
City	6.22 (1.87)	7,286	5,039	0.55	7,202
Countryside	7.01 (1.71)	7,270	918	0.48	1,341
Western Germany	6.52 (2.06)	7,057	4,819	0.54	6,943
Eastern Germany	6.48 (1.77)	7,066	2,641	0.49	3,931
Without mig. back.	6.48 (1.61)	7,016	7,161	0.53	10,323
With mig. back.	5.74 (2.03)	6,935	511	0.50	980
Muslim	5.52 (2.24)	6,274	154	0.36	241
Christian	6.53 (1.91)	6,220	3,646	0.53	5,305
With tertiary degree	6.57 (1.69)	6,745	2,362	0.83	3,162
Without voc. training	5.36 (2.06)	6,595	314	0.23	500
Poor	5.67 (1.95)	6,616	1,355	0.21	2,287
Rich	4.76 (2.18)	6,688	1,522	0.88	2,215
Likes the Greens	4.78 (2.91)	5,067	1,309	0.65	1,168
Likes the AfD	2.09 (2.63)	5,174	301	0.40	261
Pol. left-leaning	5.02 (2.55)	5,257	3,025	0.57	4,120
Pol. right-leaning	2.65 (2.46)	5,488	1,852	0.53	2,677

Note. n evaluations = number participants evaluating the target group. *n* shared group membership: number of participants sharing group membership with the target group. Group status = socioeconomic group status calculated by averaging the socioeconomic status of all identified members. *n* Group Status Calculation = number of group members used for group status calculation

Results

Preliminary Analyses. All predictors – group evaluation in W1, contact, shared group membership, and group status – were positively correlated. Shared group membership and contact were most strongly correlated ($r = .58$, $p < .001$), reflecting that participants had more contact with groups they belonged to. Descriptive information for all variables is shown in Appendix 5B. Group evaluation was relatively stable over time, with the evaluation of people sympathizing with the Greens decreasing the most (on average $\Delta M = 0.43$ on the scale from 0 to 10) and the evaluation of Muslims increasing the most ($\Delta M = 0.55$)[16] between the two survey waves (Appendix 5D).

Main Analyses. This study employs multilevel analyses, with group evaluations nested in individuals (ICC = 0.19; Model 0). Nine models were calculated, with predictors added successively. The model summaries are presented in Table 5.4. Given the large sample size, effects were considered significant at $\alpha = .001$.

Group evaluation in W1 predicted group evaluation in W3 positively ($\beta = 0.69$, $SE = 0.002$, $p < .001$; Model 1), demonstrating considerable within-person stability of group evaluation. Shared group membership had a positive effect on group evaluation in W3 above group evaluation in W1 and group status ($\beta = 0.06$, $SE = 0.002$, $p < .001$, Model 4). Group status had a negative effect on group evaluation in W3 above group evaluation in W1 and shared group membership ($\beta = -0.01$, $SE = 0.002$, $p < 0.001$, Model 4). Contact predicted group

[16] The strong increase of evaluations of Muslims could have been caused by measuring evaluations of Jews right before measuring the evaluation of Muslims in Wave 3 but not in Wave 1. Asking participants to evaluate Jews could have made the norm to not discriminate based on religion more salient, which is strongly connected to the evaluation of Jews in Germany due to its history.

Table 5.4

Model Summaries Main Analyses

Effect	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
					Fixed effects				
Intercept	0.005	0.001	0.001	0.001	0.001	0.001	0.03***	-0.002	0.03***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Evaluation W1		0.69***	0.67***	0.69***	0.67***	0.63***	0.63***	0.63***	0.62***
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Shared Group Membership			0.06***		0.06***	0.02***	0.03***	0.02***	0.03***
			(0.002)		(0.002)	(0.002)	(0.003)	(0.002)	(0.003)
Group Status				-0.01**	-0.01***	-0.02***	-0.02***	-0.01**	-0.01***
				(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Contact W1						0.09***	0.11***	0.09***	0.11***
						(0.003)	(0.003)	(0.003)	(0.003)
Shared Group Membership x Contact W1							-0.05***		-0.05***
							(0.002)		(0.002)
Group Status x Contact W1								0.03***	0.03***
								(0.003)	(0.003)

Table 5.4 (continued)

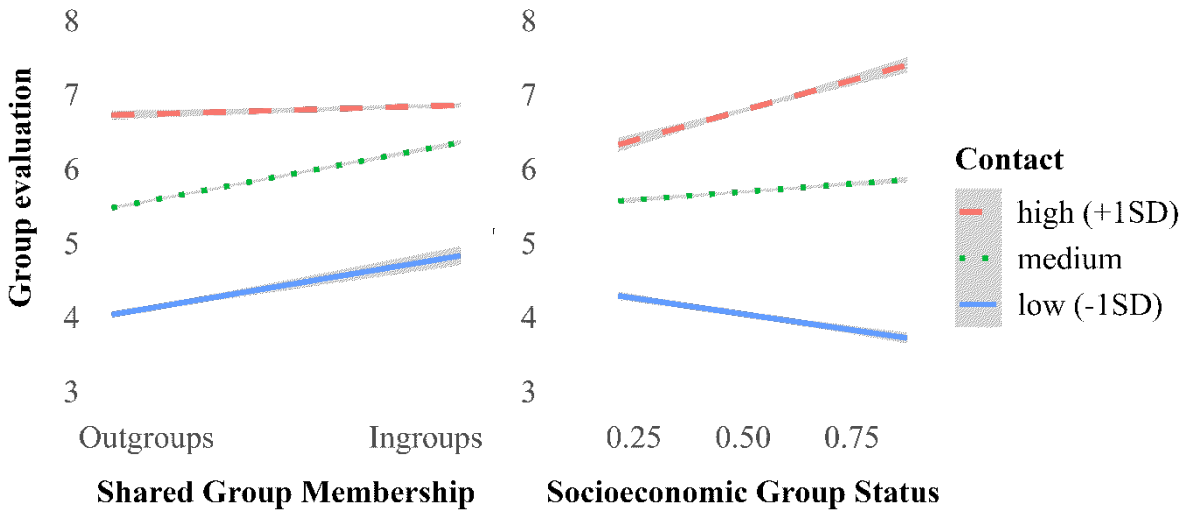
Effect	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
					Random effects				
Variance components									
Level 1	0.80	0.40	0.40	0.40	0.40	0.39	0.39	0.39	0.39
Level 2	0.20	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.16
					Goodness of fit and model information				
N Participants	7,471	7,471	7,471	7,471	7,471	7,471	7,471	7,471	7,471
N Observations	107,579	107,579	107,579	107,579	107,579	107,579	107,579	107,579	107,579
Pseudo r^2		0.44	0.44	0.44	0.44	0.45	0.45	0.45	0.45
Deviance	293,167	220,961	220,091	220,955	220,051	218,743	218,310	218,647	218,178
AIC	293,173	220,989	220,131	220,995	220,104	218,808	218,387	218,723	218,267
Log-Likelihood	-146,583	-110,490	-110,060	-110,492	-110,046	-109,397	-109,186	-109,354	-109,124
$\Delta\chi^2$		$72{,}205^{***}$	871^{***}	6.73^{**}	910^{***}	$1{,}308^{***}$	433^{***}	96.24^{***}	565^{***}

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

$^{\dagger}\, p \leq .10.\ ^{*}\, p < .05.\ ^{**}\, p < .01.\ ^{***}\, p < .001.$

Figure 5.4

Longitudinal Associations between Group Evaluation and Shared Group Membership (Left), and Socioeconomic Group Status (Right), by Amount of Contact



evaluation in W3 positively above group evaluation in W1, shared group membership, and group status (β = 0.09, *SE* = 0.003, $p < .001$; Model 5).

Contact predicted weaker ingroup bias as it negatively moderated the effect of shared group membership on group evaluation in W3 (β = -0.05, *SE* = 0.002, $p < .001$). This finding provides evidence for H3 (see left graph in Figure 5.4). Contact was furthermore associated with stronger status bias. In fact, similar to Study 1, contact moderated the effect of group status on group evaluation in W3 positively (β = 0.03, *SE* = 0.003, $p < .001$), providing evidence for H4a (see right graph in Figure 5.4). The full model (Model 8) fitted better than Model 5 which did not include the interaction terms ($\Delta\chi^2$ = 515.33, $p < .001$), although the pseudo R^2 did not increase (R^2 = .46 in both models).

Exploratory and Robustness Analyses. Furthermore, I explored whether the associations of contact with ingroup bias and status bias differed between evaluations of belief-indicative groups (migration background, religion, political party, political position) and status-

indicative groups (education, income). More contact preceded more favorable group evaluations for belief-indicative (β = 0.07, SE = 0.004, p < .001) and status-indicative groups (β = 0.13, SE = 0.01, p < .001). Moreover, contact preceded weaker ingroup bias (β = -0.07, SE = 0.004, p < .001) and was not associated with status bias (β = 0.002, SE = 0.005, p = .72) for the evaluation of belief-indicative groups. For the evaluation of status-indicative groups, contact preceded stronger status bias (β = 0.09, SE = 0.005, p < .001) and was not associated with ingroup bias (β = 0.002, SE = 0.004, p = .65).

Lastly, I tested whether the findings were robust against five alternative methodological specifications (see Appendix 5C). Results revealed that contact predicted weaker ingroup bias and stronger status bias across all alternative model specifications consistent with the findings from the main analyses.

Discussion

This study replicated the findings from Study 1 using a longitudinal design: contact preceded weaker ingroup bias (H3) and stronger status bias (H4a).

The exploratory analyses revealed that contact preceded weaker ingroup bias for the evaluation of belief-indicative groups, but not status-indicative groups: the more contact participants had with belief-indicative groups, the weaker ingroup bias they showed for evaluating belief-indicative groups two years later. Moreover, contact preceded stronger status bias for the evaluation of status-indicative groups, but not belief-indicative groups: the more contact participants had with status-indicative groups, the stronger status bias they showed for the evaluation of status-indicative groups two years later.

This study validated the main findings from Study 1 longitudinally: contact preceded weaker prejudice and ingroup bias but stronger status bias. It tested the effects of contact on ingroup bias and status bias in a longitudinal design using two survey waves, providing evidence for the theorized temporal sequence. It should be noted, however, that the longitudinal

study design does not prove causality and a reliable separation of within- and between-individual changes over time requires three or more survey waves (e.g., see Friehs et al., 2024). Future research should validate the findings using various methods, including experimental, longitudinal, and extensive longitudinal (e.g., experience sampling) designs.

Study 3

Studies 1 and 2 assessed the evaluations of individuals presented as members of a single group. Insights from such evaluations are relevant for understanding prejudices expressed when discussing groups in society, such as at the kitchen table or in politics. In real interactions with another person, information about more than just one group membership is typically evident. Study 3 uses a vignette experiment in which participants evaluate fictitious individuals described as belonging to multiple groups. Insights from studying such evaluations are relevant for understanding prejudice in real encounters. Therefore, this study aims to test whether the findings from Studies 1 and 2 can be replicated in a multiple categorization scenario. This study tests all hypotheses and was preregistered on OSF (https://osf.io/xshbw)[17].

Method

Participants and Procedure. This study uses a vignette experiment implemented in the fourth wave of the SCP (fielded from May to September 2024; N = 3,742), combined with measures from its previous waves (Wave 1-3). After completing the fourth wave of the SCP, panel participants were invited to take part in an additional study: the vignette experiment. Participants who agreed to take part in this additional study were directed to the webpage in the computer-assisted (CAWI) survey mode or sent log-in information to the webpage by mail in

[17] See Appendix 5A for adjustments made to the preregistered methods.

the paper-based (PAPI) survey mode. In total, 49% of all panel participants took part in the vignette experiment (66% of all CAWI participants and 11% of all PAPI participants). Incentives of 25 x 100 Euro, 50 x 50 Euro, and 75 x 10 Euro were given away by lottery.

Each vignette presented a fictitious person described as belonging to multiple groups. Group membership was manipulated on nine dimensions: gender, age, migration background, religion, education, employment status, income, political position, and value orientation (see study materials at OSF: https://osf.io/vsnwx). Since it was not possible to include all combinations of group memberships in the survey, the D-efficient design was used to select 144 vignettes while minimizing correlations between dimensions. Fifteen decks were created, each containing nine to ten vignettes. Each participant was presented with one deck of vignettes. The present study analyses only those dimensions and levels for which contact was measured in Wave 3: Religion (religious Christian, religious Muslim, religious Jew), Migration background (Without migration background, with migration background: 2nd generation Turkish, 1st generation Syrian), political position (left, right), education (basic vocational training, tertiary degree), and income (850€ monthly, 6000€ monthly).

Participants' responses to the vignette experiment were linked to their responses from Wave 1 (see Study 2), Wave 2 (N = 9,171; fielded from December 2021 to July 2022), and Wave 3 (see Study 2) of the SCP to identify their group memberships and contact with groups. Participants who did not take part in one of the waves (e.g., those who joined the panel later) were excluded from the analyses, as well as those with missing values on any of the predictors, resulting in N = 3,007 participants evaluating N = 28,314 vignettes.

Measures. ***Group Evaluation.*** Group evaluation was assessed using three items that measured warmth ("Imagine you meet Person A through your circle of acquaintances. How likely is it that you would get along well with Person A?"), intention to cooperate on a task ("Imagine you are faced with a task that cannot be managed alone. How likely is it that you

would ask Person A for help?"), and potential conflict ("Imagine Person A moves into your neighborhood. How likely is it that you would come into conflict with Person A?"). Participants responded on an 11-point scale from 0 (*not at all likely*) to 10 (*very likely*). The measure of potential conflict was reversed, so higher values indicate a more favorable evaluation across all items. The three items were combined to an index (α = .68).

Table 5.5

Target Group Characteristics

	n Shared Group Membership	Group Status	*n* Group Status Calculation
Without mig. back.	2,685	0.55	4,826
With mig. back.	532	0.51	1,610
Muslim	87	0.36	241
Christian	1,598	0.53	5,305
With tertiary degree	1,252	0.83	3,162
Basic voc. training	79	0.12	421
Poor	526	0.21	2,287
Rich	819	0.88	2,215
Pol. left-leaning	1,453	0.57	4,120
Pol. right-leaning	855	0.53	2,677
Jewish	5	0.53	18

Note. n shared group membership: number of participants sharing group membership with the target group. Group status = socioeconomic group status calculated by averaging the socioeconomic status of all identified members. *n* Group Status Calculation = number of group members used for group status calculation.

Contact. Contact was assessed in Wave 3 as the quantity of acquaintances, using the same measure as reported in Study 2, with the addition of measuring contact with Jews. For each participant evaluating a particular vignette, contact was calculated as the average contact with each group the vignette was described to be a member of (e.g., when the vignette person was described as rich and Muslim, contact with rich inidivduals and contact with Muslims was averaged). The vignette descriptions differed slightly from the contact measure, so proximate categories were matched. For example, the vignettes described the fictitious persons as either born in Germany to German parents, born in Germany to Turkish parents, or born in Syria. Contact was measured with people with and without a migration background, so that these categories were matched accordingly as a proximate measure of contact.

Shared group memberships. For each observation of a participant evaluating a specific vignette, the number of group memberships they shared was identified. Participants' group memberships were identified based on their responses in Waves 1 and 2, using the same procedure as in Study 2. A variable was created to indicate the number of shared group memberships, ranging from 0 (*no group memberships shared*) to the maximum of 5 (*five group memberships shared*). Table 5.5 shows the number of identified group members among the participants.

Vignette Status. Socioeconomic group status was calculated for each group vignettes were described as belonging to, using the same method as in Study 2 and drawing on the subsample of anchor persons in Wave 1 (those who were recruited based on the probability sample, excluding household members which were invited to participate in the survey via the anchor persons). Education and income were used as indicators of socioeconomic status and were assessed and transformed in the same way as described in Study 2. Table 5.5 presents the calculated socioeconomic group status. Group-based vignette status was calculated by

averaging the socioeconomic status of all groups the vignette person was described as belonging to, based on the categorization dimensions used in this study.

Results

Preliminary Analyses. All predictors – shared group memberships, vignette status, and contact – were positively correlated. Shared group memberships and contact were most strongly correlated ($r = .36$, $p < .001$), indicating that participants who shared more group memberships with vignettes also tended to have, on average, more contact with the groups the vignette was described as belonging to. Descriptive information of the predictors and the dependent variable (vignette evaluation) can be found in Appendix 5B.

Main Analyses. This study employs multilevel analyses, with group evaluations nested within individuals (ICC = 0.38; Model 0). Eight models were calculated, with predictors added successively. All models included controls for the vignette categorization dimensions not examined in this study (age, gender, employment status, and value orientation). Table 5.6 shows the model summaries. Given the large sample size, effects are accepted as significant at $\alpha = .001$.

The number of shared group memberships had a positive effect on vignette evaluation, above group status ($\beta = 0.04$, $SE = 0.004$, $p < .001$, Model 3). Thus, participants evaluated vignettes more favorably when they shared more, as compared to fewer, group memberships with them, supporting H1. However, this effect was not robust against the inclusion of contact in the model ($\beta = 0.001$, $SE = 0.005$, $p = .786$, Model 4). Vignette status also positively predicted vignette evaluation ($\beta = 0.02$, $SE = 0.004$, $p < .001$, Model 3), indicating that vignettes with relatively high-status group memberships were evaluated more favorably than those with relatively low-status group memberships, supporting H2. However, this effect was not robust against the inclusion of contact into the model ($\beta = 0.001$, $SE = 0.004$, $p = .797$, Model 4).

Table 5.6

Model Summaries Main Analyses

Effect	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
				Fixed effects				
Intercept	-0.001	0.31***	0.31***	0.31***	0.31***	0.31***	0.31***	0.31***
	(0.01)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Shared Group Membership		0.04***		0.04***	0.001	0.002	0.002	0.002
		(0.004)		(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
Vignette Status			0.02***	0.02***	0.001	0.001	0.001	0.001
			(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Contact					0.10***	0.10***	0.10***	0.10***
					(0.005)	(0.005)	(0.005)	(0.005)
Shared Group Memberships x Contact						-0.004		-0.01
						(0.005)		(0.005)
Vignette Status x Contact							0.02**	0.02***
							(0.005)	(0.01)

Table 5.6 (continued)

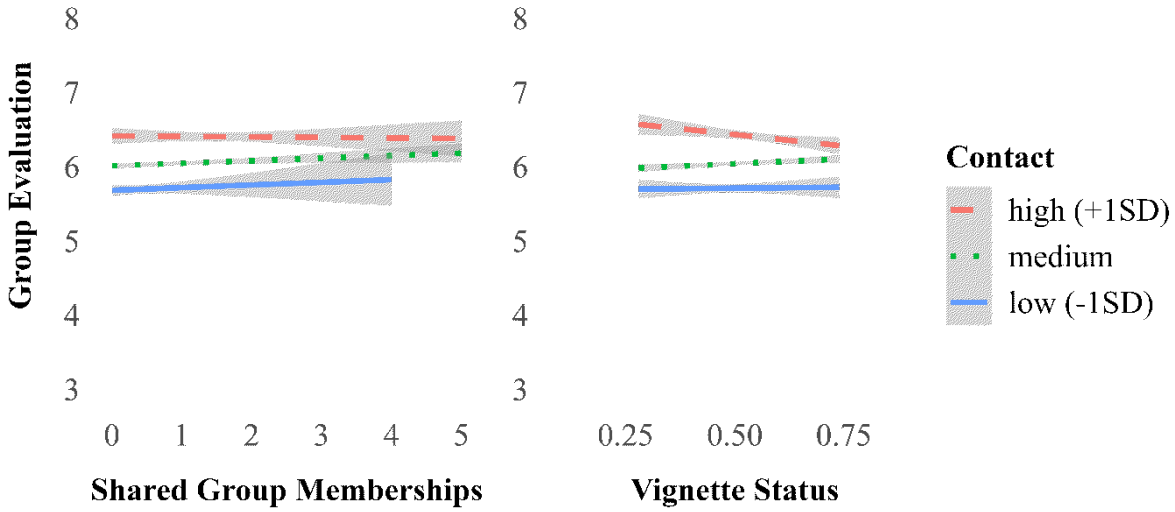
Effect	Model 0	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
				Random effects				
Variance components								
Level 1	0.62	0.54	0.54	0.54	0.53	0.53	0.53	0.53
Level 2	0.38	0.39	0.39	0.39	0.39	0.39	0.39	0.39
				Goodness of fit and model information				
N Participants	3,007	3,007	3,007	3,007	3,007	3,007	3,007	3,007
N Observations	28,314	28,314	28,314	28,314	28,314	28,314	28,314	28,314
Pseudo r^2		0.07	0.07	0.07	0.08	0.08	0.08	0.08
Deviance	72,441	69,036	69,111	69,024	68,635	68,635	68,626	68,624
AIC	72,447	69,135	69,210	69,134	68,756	68,766	68,757	68,766
Log-Likelihood	-36,221	-34,555	-34,593	-34,554	-34,364	-34,368	-34,364	-34,367
$\Delta\chi^2$		$3{,}405^{***}$	$3{,}330^{***}$	$3{,}417^{***}$	389^{***}	0.53	9.13^{**}	10.87^{**}

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

$^{\dagger}\, p \leq .10.$ $^{*}\, p < .05.$ $^{**}\, p < .01.$ $^{***}\, p < .001.$

Figure 5.5

Associations between Group Evaluation and the Number of Shared Group Memberships with the Vignette (Left), and Vignette Status (Right), by Amount of Contact



Contact predicted group evaluation positively (β = 0.10, SE = 0.005, p < .001; Model 4), but it did not predict ingroup bias, as its interaction with shared group memberships was insignificant (β = -0.01, SE = 0.005, p = .187, Model 7), in contrast to H3. Instead, contact predicted stronger status bias, as its interaction with the vignette status was significant (β = 0.02, SE = 0.01, p = 0.001, Model 7). This finding supports H4a (contact does not predict lower status bias) rather than H4b (contact predicts weaker status bias, although less strongly than it predicts weaker ingroup bias). The interaction effects are plotted in Figure 5.5. The full model, including the interaction terms (Model 7), did not provide a better fit than the model without the interaction terms (Model 4; $\Delta\chi^2$ = 10.78, p = .004), and the pseudo R^2 did not increase between the models (R^2 = .08 in both models).

Exploratory and Robustness Analyses. Exploratory analyses examined whether the associations of contact with ingroup bias and status bias differed when the contact measure and the number of shared group memberships were based only on belief-indicative group

memberships (migration background, religion, political party, political position) or status-indicative group memberships (education, income). The results reveal that participants showed ingroup bias only for the vignettes' belief-indicative group memberships (β = 0.03, SE = 0.005, $p < .001$) but not for the vignettes' status-indicative group memberships (β = 0.01, SE = 0.005, $p = .003$). They also showed status bias only for the vignettes' belief-indicative group memberships (β = 0.04, SE = 0.005, $p < .001$) but not for the vignettes' status-indicative group memberships (β = 0.01, SE = 0.005, $p = .013$). Moreover, contact was associated with weaker ingroup bias (β = -0.02, SE = 0.01, $p < .001$) and stronger status bias (β = 0.02, SE = 0.01, $p < .001$) for belief-indicative groups, and was not associated with ingroup bias (β = -0.003, SE = 0.01, $p = .601$) and status bias (β = 0.01, SE = 0.01, $p = .106$) for status-indicative groups.

Furthermore, I tested whether the findings were robust against six alternative methodological specifications (see Appendix 5C). Results revealed that across all alternative methodological specifications, participants showed ingroup bias and status bias, consistent with the main analyses, except for the conflict measure of group evaluation where participants did not show status bias. Also consistent with the main analyses, contact did not predict ingroup bias nor status bias across all alternative specifications. The association between contact and status bias was either positive (consistent with the main analyses), or non-significant, both of which support H4a, expecting that contact does not reduce status bias.

Discussion

This study tested all hypotheses in a multiple categorization scenario using a vignette experiment. It found evidence for ingroup bias as hypothesized in H1 and status bias as hypothesized in H2. More contact with groups the vignette was described to be a member of was associated with more positive evaluations but not with ingroup bias, in contrast to H3. When contact and shared group memberships were calculated based on belief-indicative group memberships only, contact predicted weaker ingroup bias. This finding is consistent with

previous literature insofar as most studies investigate the effects of contact with belief-indicative groups. According to the present study, however, the prejudice- and ingroup-bias reducing effects of contact are restricted to belief-indicative groups in a multiple categorization scenario: they appear to not generalize to status-indicative groups. Future research is needed to validate this finding.

More contact with groups the vignette was described to be a member of was furthermore not related to status bias as hypothesized in H4a. When contact and shared group memberships were calculated based on belief-indicative group memberships only, contact predicted even stronger status bias. This finding provides further support for that contact does enhance group evaluations, but does not reduce the differential evaluations of groups with high vs. low socioeconomic status in society.

It should be noted that the categorization into groups did not match neatly between the vignette descriptions and the contact measure which might have biased the estimates of contact and its interaction effects. This study validated a main finding from Study 1 and Study 2 in a multiple categorization scenario: contact predicted stronger status bias. In contrast to the earlier studies, contact predicted reduced prejudice and ingroup bias only for belief-indicative groups.

General Discussion

Across all studies (cross-sectional, longitudinal, and in the vignette experiment), contact consistently predicted more favorable group evaluations. In contrast to earlier research, this study tested contact effects regarding a variety of groups, including groups to which participants themselves belonged, suggesting that contact's association with more favorable evaluations is not restricted to outgroups.

Ingroups were evaluated more positively than outgroups, overall; that is, participants showed ingroup bias across all studies, in line with H1. Contact related to weaker ingroup bias

in the single-categorization studies (Studies 1 and 2): the more contact participants had with target groups, the less of a difference it made for its evaluation whether it was an ingroup or outgroup. This finding is in line with the expectations (H3) and with earlier cross-sectional research reporting weaker ingroup bias for those with higher levels of contact (Davies et al., 2011; Dovidio et al., 2017). In the vignette study where vignettes with multiple group categorizations were evaluated (Study 3), contact was not associated with ingroup bias. Across all studies, contact related to weaker ingroup bias for the evaluation of belief-indicative groups but not status-indicative groups, indicating that the ingroup-bias reducing effect of contact does not seem to apply to categorization dimensions based on status (i.e., income- and educational groups).

Groups that hold high objective socioeconomic status were evaluated more positively than groups with low status in the cross-sectional studies (Studies 1 and 3), in line with H2. Across all studies, contact related to stronger status bias, consistent with H4a. This finding is compatible with the meta-analytical finding by Paolini et al. (2024) that (positive and negative) contact effects were equally strong or stronger for admired, high-status, and high-SES groups than stigmatized, low-status, or low-SES groups. In contrast to these earlier studies that typically assessed contact effects for each a single outgroup with either higher, lower, or similar estimated status, the present studies have considered various target groups, including ingroups and outgroups, and measured their objective socioeconomic status. Evaluations of groups with high objective socioeconomic status may improve more through positive contact than evaluations of groups with low status. In other words, contact may not reduce evaluative biases in favor of high-status groups, it may even reinforce them. Future research should address conditions under which contact does not reinforce status bias or, ideally, reduces it. Research on the conditions under which contact promotes collective action (Hässler et al., 2021) could inform the starting point of such investigations. Depending on the prejudice that is aimed to be

reduced, contact may or may not be a recommended intervention. Likely, when a reduction of status bias is targeted, other interventions are needed, such as affirmative action policies aimed at enhancing the material resources or power of groups with low socioeconomic status.

Table 5.7

Summary of Findings Across Studies by Kind of Target Group

	Contact → ingroup bias	Contact → Status bias
Study 1, cross-sectional, $N = 571$, $\alpha = .05$		
All groups	-	+
Belief-indicative groups	-	+
Status- indicative groups	n.s.	n.s.
Study 2, longitudinal, $N = 6{,}995$, $\alpha = .001$		
All groups	-	+
Belief-indicative groups	-	n.s.
Status- indicative groups	n.s.	+
Study 3, vignette experiment, $N = 3{,}007$, $\alpha = .001$		
All group memberships	n.s.	+
Belief-indicative group memberships	-	+
Status- indicative group memberships	n.s.	n.s.
Summary	Contact was either associated with weaker ingroup bias (particularly for the evaluation of belief-indicative groups) or not associated with ingroup bias (particularly for the evaluation of status-indicative groups)	Contact was associated with stronger status bias, particularly for the evaluation of belief-indicative groups

In the cross-sectional studies (Studies 1 and 3), contact related to stronger status bias for the evaluation of belief-indicative groups only and in the longitudinal study (Study 2) for the evaluation of status-indicative groups only. A possible explanation could be the temporal sequence: the relations between contact and status bias for the evaluation of belief-indicative groups could be due to people high in status bias avoiding contact with low-status belief-indicative groups. Future research should validate these findings by investigating the temporal sequence of within-person changes using three or more survey waves. Table 5.7 summarizes the contact effects on ingroup bias and status bias found in the three studies.

The number of groups studied (16 in Study 1, 17 in Study 2, and eleven in Study 3) is both a strength and a limitation of the current research. On one hand, this is a strong contribution as previous studies typically do not go beyond two or a handful of groups at maximum. On the other hand, this is a limitation as studying more groups would enable a more reliable estimation of the relationship between group status and group evaluation. Moreover, future research could investigate through which mechanisms contact is associated with stronger status bias. This research hopefully encourages such studies to better understand the effects of contact on different biases.

Conclusion

The present research aimed to incorporate the distinction between ingroup bias and status bias into intergroup contact research to deepen the understanding of contact effects on prejudice. It therefore addressed contact with a variety of social groups, including ingroups, outgroups, and groups with different socioeconomic status, following the call by Paolini and her colleagues (Paolini et al., 2024; Paolini & McIntyre, 2019). This way, it incorporates the study of group-based inequalities into contact research. The proposed analytical perspective led to novel insights: contact potentially improves group evaluations and reduces ingroup bias, but enhances status bias. Future research should investigate under which conditions

contact can reduce status bias, too, and whether other interventions are more potent in doing so.

Chapter 6. Prejudice and Group-Based Inequalities: Concluding Remarks

This dissertation started off at a point where status bias had been noted in the literature but was rarely investigated explicitly. Different researchers described the phenomenon as the "preference for higher status" (Grigoryan et al., 2023, p.1), "high-status group favoritism" (Levin et al., 2002, p. 144), or as "prejudice against marginalized groups" (Bergh & Brandt, 2023, p.107). I use the term "status bias" in distinction to ingroup bias and define it as the tendency to prefer high-status groups over low-status groups. Building on Social Dominance Theory (Sidanius & Pratto, 1999), I suggest that status refers to actual power and status inequalities between groups in society and can be operationalized as socioeconomic group status. Moreover, evaluations based on group status were previously interpreted mostly within the framework of intergroup dynamics. In contrast, I propose to distinguish status bias from ingroup bias conceptually and empirically as two biases that simultaneously form prejudice. The perspective of multiple biases forming prejudice conveys consequences for future research addressing prejudice and its reduction. This chapter summarizes and discusses implications of these suggestions.

I have conducted seven studies, four of them in collaboration, to examine how status bias differs from ingroup bias, what motivates it, and whether it can be reduced through intergroup contact. The studies include cross-sectional and longitudinal designs, as well as a vignette experiment, involving a large number of participants. Methodologically, the presented studies employ a novel approach to measure actual socioeconomic group status, and utilize multilevel modeling and multilevel structural equation modeling techniques to analyze the data. The findings broadly suggest that status bias is distinct from ingroup bias, is motivated by SDO, and cannot be reduced through personal contact (see Table 6.1). This dissertation has thereby advanced the incorporation of status bias into prejudice research by demonstrating its distinction from

ingroup bias, and addressing two major areas of prejudice research: its ideological foundation and potential reduction through intergroup contact.

Table 6.1

Summary of Findings (Selection)

Study	Result	Explorative Findings
Ingroup Bias (Shared group membership predicts more favorable group evaluation)		
P1,S1	Confirmed	For belief-indicative and status-indicative groups
P1,S2	Confirmed	For belief-indicative and status-indicative groups
P2,S1	Confirmed	For warmth, competence, and social distance
P2,S2	Confirmed	
P3,S3	Confirmed	Not robust against the inclusion of contact
Status Bias (Socioeconomic group status predicts more favorable group evaluations)		
P1,S1	Confirmed	For belief-indicative and status-indicative groups
P1,S2	Confirmed	For belief-indicative and status-indicative groups
P2,S1	Rejected	Confirmed for competence evaluations
P2,S2	Confirmed	
P3,S3	Confirmed	Not robust against the inclusion of contact
Similarity-Attraction (Value similarity predicts more favorable group evaluations)		
P1,S1	Confirmed	
P1,S2	Confirmed	
RWA Predicts Stronger Ingroup Bias		
P2,S1	Rejected	
P2,S2	Rejected	Confirmed when modifying political groups categorization
SDO Predicts Stronger Status Bias		
P2,S1	Confirmed	Not robust against the inclusion of RWA
P2,S2	Confirmed	

Table 6.1 (continued)

Contact Predicts Weaker Ingroup Bias		
P3,S1	Confirmed	Overall and for belief-indicative groups
P3,S2	Confirmed	Overall and for belief-indicative groups
P3,S3	Rejected	Confirmed for belief-indicative categorization dimensions
Contact Does Not Predict Weaker Status Bias		
P3,S1	Confirmed	Stronger status bias overall and for belief-indicative groups
P3,S2	Confirmed	Stronger status bias overall and for status-indicative groups
P3,S3	Confirmed	Stronger status bias overall and for belief-indicative groups

The Nature of Status Bias

This dissertation has contributed to the conceptualization, measurement, and understanding of status bias. I have defined status bias as the tendency to prefer high-status groups over low-status groups, building on Social Dominance Theory (Sidanius & Pratto, 1999) and recent advances that describe such a tendency (Bergh et al., 2016; Grigoryan et al., 2023). Status bias is thought to be grounded in objective group-based inequalities and reinforcing group-based inequalities (Pratto et al., 2006). This cycle puts disadvantaged groups at a further disadvantage, making status bias a major concern in research and society.

Status bias shapes group evaluation alongside other biases, including ingroup bias. The biases can align or oppose each other, ultimately resulting in a particular evaluation of social groups, depending on their relative strengths in a given situation. In the presented studies, status bias varied between being insignificant and about as strong as ingroup bias. The strength of status bias varied across different measurements of group evaluation and across different kinds of target groups. Still, more research is needed to better understand how the strengths of biases vary across situations and contexts. For example, all studies in this dissertation were conducted in Germany; however, there are indications for that status bias regarding status-indicative

groups varies in strength across countries (Grigoryan et al., 2023). Besides, a considerable share of variance in prejudice remained unexplained in all studies. This share of variance could potentially include other general biases, prejudices specific to the evaluated groups, and random variation or noise.

Status bias was found to be associated with SDO, suggesting that SDO may motivate status bias (see Chapter 4). However, a solid conclusion about whether this association is causal and robust is still pending. Much variation in status bias remained unexplained, and future research should investigate what other factors motivate status bias. RWA motivated status bias in one of the two studies that tested this association, and future research could clarify whether RWA motivates status bias, ingroup bias, or both. Other motivations for status bias are possible, including the importance of personal life goals related to achievement and power.

Furthermore, personal contact with group members was either not associated with status bias or was associated with stronger status bias. Future research could investigate whether this findings extend to experimental designs and longitudinal designs with more waves. Moreover, contact effects may also depend on different assessments of contact and specific conditions within the contact situation.

To advance the study of status bias, the mechanisms through which group status relates to group evaluations need to be investigated. As such, stronger status has been found to be associated with greater perceived similarity (Grigoryan, 2020) and perceived similarity is more strongly associated with evaluations than actual similarity (Montoya et al., 2008). Thus, evaluations are possibly misattributed to similarity rather than group status. Future research is needed to investigate the mechanisms through which higher group status is associated with more favorable evaluations, with perceived similarities being a promising candidate.

Another area that demands more research is the exact relationship between group status and group evaluation. Throughout the dissertation, the assumed relationship was linear, with

evaluations becoming more favorable in proportion to the status difference between groups. Alternatively, the relationship might be reversed U-shaped, with evaluations becoming less favorable for groups with very high status. This seems particularly likely for monetary resources: in a 2012 survey conducted in the U.S., 67% of participants reported not admiring people who are rich (Kohut et al., 2012). In comparison to the middle class, the rich were found to be favored implicitly but not explicitly (Horwitz & Dovidio, 2017). For education, in contrast, there is no evidence for such a trend (Kuppens et al., 2018), likely because educational achievements are more strongly attributed to merit, even in the face of substantial and persistent educational inequalities (Bukodi et al., 2014). A further exploration of the relation between group status and group evaluation would benefit from measuring evaluations of a higher number of social groups, representing a larger variety of status differences between them.

Status bias may operate differently for single versus multiple categorization scenarios. One of the studies drew on a vignette experiment where fictitious persons were presented as belonging to multiple groups, whereas the other six studies focused on evaluations of persons with a single group membership. When only one group membership is given, the group's status as well as beliefs can be inferred from it (Koch et al., 2016). In the presence of more proximal information about a person's status and/or beliefs, the extent to which the same group membership remains informative about status and beliefs can be expected to be at least reduced, if not entirely absent. This could explain why the present studies reveal status bias even for belief-indicative groups (see Chapter 3), whereas earlier research drawing on multiple categorization scenarios did not (Grigoryan et al., 2023). Future research should further investigate how biases, particularly status bias, differ depending on knowledge of single versus multiple group memberships.

In the presented studies, different measures of group evaluation varied in the extent to which they captured status bias. In the first study of Chapter 4, status bias was evident only in

evaluations of competence, but not social distance (neighborhood item) or warmth. In Chapter 3, status bias was stronger in social distance (marriage item) than in the feeling thermometer. This resonates with prior research showing that evaluations of competence are based on group status (Abele et al., 2021; Fiske et al., 2002). Moreover, it indicates that different assessments commonly used to measure overall attitudes toward a group differ in the extent to which they capture status bias. Future research should revisit general group evaluation measures (e.g., social distance, feeling thermometer) to assess their ability to measure different forms of prejudice.

All of these are just some of the many open questions that the notion of status bias raises. Moreover, the findings reported in the present studies should be replicated and validated, involving different researchers and target groups, and using different measurements and study designs. This dissertation aims to demonstrate the need and merit of considering status bias in prejudice research and hopefully encourages future research to address some of the open questions.

Beyond Intergroup Distinctions: Multiple Biases

Intergroup distinctions undoubtedly play a major role in prejudice. Their acknowledgment has greatly advanced the study of prejudice over the past decades, leading to the formulation of influential approaches such as Social Identity Theory (Tajfel & Turner, 1979) and the contact hypothesis (Allport, 1954). The prominent role it plays, however, carries the risk of reducing all prejudices to intergroup distinctions and neglecting other forms of prejudice. As such, group evaluations based on status have previously often been considered only as asymmetrical ingroup bias (e.g., Bettencourt et al., 2001; Pratto et al., 2006), limited to the interpretative framework of intergroup dynamics. The present studies, along with previous research (Bergh et al., 2016; Grigoryan et al., 2023), make a strong case for thoroughly

addressing status bias as a fundamental component of prejudice that cuts across group boundaries.

One major concern in the study of status bias as a distinct form of prejudice is its distinction from ingroup bias. Chapter 3 elaborates that prior research has attributed patterns of evaluation to intergroup distinctions, more specifically, ingroup bias. This, however, is more of an interpretation than a direct measurement of bias. The consideration of status bias acknowledges that multiple biases form group evaluations. From this perspective, valid conclusions about the existence of certain biases should be based on their actual assessments rather than on attributions of evaluative patterns. The present dissertation demonstrates that status bias can be empirically assessed as a distinct bias and compared to ingroup bias in its strength.

Regarding the distinction between status bias and ingroup bias, the present studies have shown that the two biases share little variance and thus account for a distinct, rather than redundant, portion of prejudice. Moreover, they appear to differ in their ideological foundations (see Chapter 4) and are affected differently by personal contact with group members (see Chapter 5). The present studies thus provide strong evidence that status bias is a distinct bias on its own. They furthermore suggest that the interpretative framework of intergroup distinctions may have obscured status bias in earlier research, as it facilitates the attribution of any evaluative pattern differing between ingroups and outgroups to ingroup bias.

From these findings, I conclude that transcending intergroup distinctions as the primary interpretative framework for prejudice may be necessary to study other forms of prejudice, particularly status bias. Instead, multiple biases should be investigated and preferably measured directly, without relying on interpretative attributions. Intergroup distinctions surely remain important; for example, biases can differ in their strengths for ingroup and outgroup evaluations.

Beyond Perceptions: Actual Inequalities

Social Dominance Theory postulates that group-based inequalities arise from actual differences in power and valued resources that are unequally distributed across social groups (Sidanius & Pratto, 1999), and that such inequalities are maintained through prejudice (Pratto et al., 2006). Notably, they refer to actual, objective, group-based inequalities. Accordingly, I have defined status bias as the tendency to prefer high-status groups over low-status groups based on objective (e.g., socioeconomic) status differences. Prior research has primarily focused on either mostly binary status distinctions between two groups (e.g., ethnic majority and ethnic minority group; Bettencourt et al., 2001), or on perceived status ratings (Brandt, 2017).

Status ratings reflect perceptions of group-based inequalities, which are, however, at risk of being considerably biased. As such, people tend to significantly underestimate the inequality in their countries (Hauser & Norton, 2017). Many believe that gender equality exists, despite evidence to the contrary (Ellemers, 2018). As another example, recall the survey conducted in the '60s, where 79% of European Americans and 46% of African Americans believed that both groups had the same chances to get 'any kind of job'. (Sidanius & Pratto, 1999, p. 106). These examples highlight that existing group-based inequalities are not necessarily perceived as such.

One may ask whether group status affects group evaluation only to the extent to which it is consciously perceived. This would imply that when individuals do not perceive group-based inequalities as such, they do not evaluate groups accordingly. In contrast to this idea, evaluations of low-status groups have been shown to be more negative when inequalities in opportunities were perceived to be small (Son Hing et al., 2011). Moreover, beyond the effect that actual group status has on group evaluations via consciously perceived status, unconscious processes may contribute to it. From research on warmth and competence perceptions, we know

that these evaluations are made quickly and intuitively (Abele et al., 2021). As such, group status could produce evaluative outcomes without conscious reflection upon it. Recall the study mentioned earlier in this chapter where group status affected group evaluations through perceived similarity (Grigoryan, 2020), a pathway that does not necessarily rely on the deliberate reflection on group status. Future research should address the role status perceptions play within the relationship between actual group status and group evaluations.

This dissertation goes beyond status perceptions and is the first of its kind to measure group status as the average socioeconomic status of its members. It thereby addresses the postulation of Social Dominance Theory, which suggests that prejudice is grounded in actual group-based inequalities. The findings of the presented studies demonstrate that group evaluations systematically depend on actual group-based inequalities for a variety of groups, including both ingroups and outgroups.

Actual group status was operationalized as the average socioeconomic status of the group members, though other operationalizations are possible. For example, group wealth could serve as an additional indicator for the assessment of socioeconomic group status. The present studies do not use wealth in order to maintain a consistent operationalization of status bias across studies, as wealth was only assessed in some of them. Moreover, alternative operationalizations for group status could be considered, such as the representation of group members in powerful roles or even the health of group members, both of which are thought to be distributed unequally between groups (Sidanius & Pratto, 1999).

Moving from perceptions to actual group-based inequalities has implications for the ideological foundations of prejudice, particularly SDO. SDO was thought to motivate such prejudice rooted in actual inequalities (Pratto et al., 2006). However, it was previously often confounded with ingroup bias, and was not tested as motivating prejudice as a function of gradual differences in actual group status. The presented studies in Chapter 4 are the first to

broadly support this proposition, although the effect was not entirely robust and requires clarification in future research.

Moving from perceptions to actual group-based inequalities also has implications for interventions designed to reduce prejudice. The presented studies in Chapter 5 have shown that personal contact was not associated with stronger status bias. Reducing status bias may require different interventions. The difference between drawing on perceived and actual inequalities matters in this regard. Whereas, for bias based on status perceptions, one might consider interventions aimed at altering perceptions; for bias based on actual status, one might consider interventions aimed at altering actual status differences between groups.

Beyond Today: Incorporating Status Bias into Prejudice Research

This dissertation emphasizes the need to integrate status bias into prejudice research. Currently, this task faces several challenges. How might the field evolve to pave the way for addressing status bias? Three recommendations for future prejudice research follow from the previous discussions.

First, I recommend that future research clearly specifies the prejudice it addresses. Given that multiple definitions of prejudice vary in their focus on certain biases, clarity can be provided by explicitly stating which definition applies to the study at hand. Using ingroup bias and prejudice interchangeably should be avoided to acknowledge the existence of multiple biases that form prejudice. When only a specific bias, such as ingroup bias or status bias, is addressed, this should be made explicit.

Second, I recommend that future research which aims to differentiate status bias from ingroup bias should, whenever possible, examine prejudices toward multiple groups. As such, evaluations of low-status and high-status groups, as well as ingroups and outgroups, can be addressed. This allows for attributing certain variations in prejudice to specific biases. Surely not all research can examine prejudice against multiple groups. Differentiating multiple biases

is often not the research focus and evaluating multiple groups increases participant burdens considerably.

Third, I recommend that researchers who do not measure biases but interpret their existence from patterns of group evaluations remain aware that these patterns can be formed by multiple biases jointly. Particularly, when prejudices against one or only a few groups are assessed, it is important to keep in mind that attributions of evaluative patterns to specific biases are interpretations of the findings.

Together, these recommendations acknowledge the existence of multiple biases, paving the way for a comprehensive study of prejudice that incorporates status bias. With these techniques, different biases can be better distinguished. Previous findings based on research that has not differentiated between the biases may occasionally need to be reconsidered. This dissertation revisited two major issues of prejudice research: its ideological foundation and its reduction through intergroup contact. The results have shown that differentiating between ingroup bias and status bias yields more nuanced, and novel findings. Notably, personal contact was diametrically associated with ingroup bias and status bias.

Further issues within the field may benefit from the recognition of status bias. As such, the distinction between biases could help in revisiting the prejudice (a)symmetry debate. This debate concerns whether conservatives are more prejudiced than liberals (Badaan & Jost, 2020) or whether both ideological camps are similarly prejudiced but against different groups (i.e., those from the opposite ideological camp; Brandt & Crawford, 2020). The distinction between biases can help identify the extent to which liberals and conservatives display different biases. Possibly, conservatives and liberals exhibit both symmetric and asymmetric prejudice, depending on the form of prejudice. For example, both groups may exhibit symmetric ingroup bias and similarity-attraction, but asymmetric status bias. The distinction between biases may help in addressing this debate.

All in all, differentiating between biases can contribute to a better understanding of prejudice. Moreover, considering status bias integrates the social context of group-based inequalities into prejudice research. Previous research has emphasized the need to include such a perspective (Dixon et al., 2012; Hodson, 2021). When Dixon and colleagues posed the question: "Are negative evaluations the problem and is getting us to like one another more the solution?" (2012, p. 411) they implicated that intergroup positively does not necessarily help reducing group-based inequalities and promoting social justice. Incorporating status bias into prejudice research can help to better understand the reinforcement of group-based inequalities through prejudice.

Beyond Prejudice: Implications for Interventions and Policies

The notion of status bias not only has implications for research but also for prejudice reduction efforts. Prejudice reduction efforts aim to promote social equality and equal opportunities, and to improve mutual understanding. Equal treatment, regardless of one's group membership, is a broadly supported goal that various countries have committed to in their constitutions. The distinction between multiple biases, particularly ingroup bias and status bias, can help understanding which form of prejudice is present in a given situation. This insight, in turn, provides guidance on which intervention should be applied to reduce the bias in question. Ignoring the distinction between biases risks a mismatch between the form of prejudice intended to be reduced and the intervention applied. This dissertation therefore emphasizes the need for a more nuanced assessment of which form of prejudice is being targeted for reduction and for the application of appropriate prejudice-reduction strategies.

To match a specific intervention to the prejudice intended to be reduced, it is necessary to know which form of prejudice an intervention addresses. The studies presented in Chapter 5 indicate that intergroup contact can reduce ingroup bias but not status bias. Future research could assess whether contact can reduce status bias under certain conditions. Moreover, contact

was associated with more favorable evaluations overall and might still reduce prejudice against low-status groups. However, if contact interventions do not address prejudice rooted in group-based inequalities, it may be particularly beneficial to complement it with an intervention specifically aimed at reducing status bias.

Traditional interventions should be revisited to evaluate their effectiveness in reducing status bias. Promising interventions to reduce discrimination based on group status include affirmative action policies that aim to support group members of disadvantaged groups. One prominent example is a diversity quota in prestigious and powerful positions, such as parliaments and executive boards. The actual implementation of such interventions is at risk of facing backlash for various reasons (Morgenroth & Ryan, 2018); however, this discussion falls outside the scope of this dissertation. All in all, the findings from this dissertation suggest that employing interventions aimed at reducing prejudice could profit from considering different biases to ensure a match between the present bias(es) and the intervention.

Conclusion

Is prejudice against social groups rooted in intergroup distinctions or in the groups' low status? This dissertation suggests that it is rooted in both, with multiple biases forming group evaluations. Prejudice rooted in outgroup-ness has received attention in prejudice research, not least due to the conceptualization of ingroup bias and the interpretive framework it conveys. Prejudice rooted in group status has been acknowledged but lags far behind. This dissertation examines status bias – the tendency to prefer high-status groups over low-status groups – and proposes incorporating it into prejudice research to inherently address group-based inequalities. It demonstrates its distinctiveness from other biases with varying strengths across situations, and that it can contribute to research on the ideological foundations of prejudice as well as to prejudice reduction through intergroup contact. These findings will hopefully provide solid

grounds on which future research can build to address status bias and its contribution to reinforcing group-based inequalities.

References

Abele, A., Ellemers, N., Fiske, S., Koch, A., & Yzerbyt, V. (2021). Navigating the social world: Toward an integrated framework for evaluating self, individuals, and groups. *Psychological Review, 128*(2), 290–314. https://doi.org/10.1037/rev0000262

Abele, A. E., & Wojciszke, B. (2014). Communal and Agentic Content in Social Cognition: A Dual Perspective Model. In *Advances in Experimental Social Psychology* (Vol. 50, pp. 195–255). Elsevier. https://doi.org/10.1016/B978-0-12-800284-1.00004-7

Aberson, C. L., & Haag, S. C. (2007). Contact, perspective taking, and anxiety as predictors of stereotype endorsement, explicit attitudes, and implicit attitudes. *Group Processes & Intergroup Relations, 10*(2), 179–201. https://doi.org/10.1177/1368430207074726

Abrams, D., & Hogg, M. A. (1988). Comments on the motivational status of self-esteem in social identity and intergroup discrimination. *European Journal of Social Psychology, 18*(4), 317–334. https://doi.org/10.1002/ejsp.2420180403

Adorno, T. W., Frenkel-Brunswik, E., Levinson, D. J., & Sanford, R. N. (Eds.). (1950). *The Authoritarian Personality*. Harper Row.

Allport, G. W. (1954). *The Nature of Prejudice*. Addison-Wesley.

Altemeyer, B. (1998). The Other "Authoritarian Personality". In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (Vol. 30, pp. 47-92). Academic Press. https://doi.org/10.1016/S0065-2601(08)60382-2

American Psychological Association (n.d.). *Prejudice*. Retrieved January 4, 2025, from https://dictionary.apa.org/prejudice

Amiot, C. E., & Bourhis, R. Y. (2005). Ideological beliefs as determinants of discrimination in positive and negative outcome distributions. *European Journal of Social Psychology, 35*(5), 581–598. https://doi.org/10.1002/ejsp.238

Anderson, J., & Ferguson, R. (2018). Demographic and ideological correlates of negative attitudes towards asylum seekers: A meta-analytic review. *Australian journal of psychology, 70*(1), 18–29. https://doi.org/10.1111/ajpy.12162

Asbrock, F., Sibley, C. G., & Duckitt, J. (2010). Right-wing authoritarianism and social dominance orientation and the dimensions of generalized prejudice: A longitudinal test. *European Journal of Personality, 24*(4), 324–340. https://doi.org/10.1002/per.746

Badaan, V., & Jost, J. T. (2020). Conceptual, empirical, and practical problems with the claim that intolerance, prejudice, and discrimination are equivalent on the political left and right. *Current Opinion in Behavioral Sciences, 34*, 229–238. https://doi.org/10.1016/j.cobeha.2020.07.007

Bergh, R., Akrami, N., Sidanius, J., & Sibley, C. G. (2016). Is group membership necessary for understanding generalized prejudice? A re-evaluation of why prejudices are interrelated. *Journal of Personality and Social Psychology, 111*(3), 367. https://doi.org/10.1037/pspi0000064

Bergh, R., & Brandt, M. J. (2022). Mapping principal dimensions of prejudice in the United States. *Journal of Personality and Social Psychology, 123*(1), 154. https://doi.org/10.1037/pspi0000360

Bergh, R., & Brandt, M. J. (2023). Generalized Prejudice: Lessons about social power, ideological conflict, and levels of abstraction. *European Review of Social Psychology, 34*(1), 92–126. https://doi.org/10.1080/10463283.2022.2040140

Bettencourt, B., Charlton, K., Dorr, N., & Hume, D. L. (2001). Status differences and in-group bias: a meta-analytic examination of the effects of status stability, status legitimacy, and group permeability. *Psychological Bulletin, 127*(4), 520. https://doi.org/10.1037/0033-2909.127.4.520

Bogardus, E. S. (1925). Measuring social distance. *Journal of Applied Sociology, 9*, 299–308.

Brandt, M. J. (2017). Predicting Ideological Prejudice. *Psychological Science, 28*(6), 713–722. https://doi.org/10.1177/0956797617693004

Brandt, M. J., & Crawford, J. (2020). Worldview conflict and prejudice. *Advances in Experimental Social Psychology, 61*, 1–66. https://doi.org/10.1016/bs.aesp.2019.09.002

Brandt, M. J., Reyna, C., Chambers, J. R., Crawford, J. T., & Wetherell, G. (2014). The Ideological-Conflict Hypothesis:Intolerance Among Both Liberals and Conservatives. *Current Directions in Psychological Science, 23*(1), 27–34. https://doi.org/10.1177/0963721413510932

Brewer, M. B. (1999). The psychology of prejudice: Ingroup love and outgroup hate? *Journal of Social Issues, 55*(3), 429–444. https://doi.org/10.1111/0022-4537.00126

Bukodi, E., Erikson, R., & Goldthorpe, J. H. (2014). The effects of social origins and cognitive ability on educational attainment: Evidence from Britain and Sweden. *Acta Sociologica, 57*(4), 293–310. https://doi.org/10.1177/0001699314543803

Bundeswahlleiterin (2021). *Endgültiges Ergebnis der Bundestagswahl*. https://www.bundeswahlleiterin.de/info/presse/mitteilungen/bundestagswahl-2021/52_21_endgueltiges-ergebnis.html

Byrne, D. (1997). An Overview (and Underview) of Research and Theory within the Attraction Paradigm. *Journal of Social and Personal Relationships, 14*(3), 417–431. https://doi.org/10.1177/0265407597143008

Cantal, C., Milfont, T. L., Wilson, M. S., & Gouveia, V. V. (2015). Differential effects of right–wing authoritarianism and social dominance orientation on dimensions of generalized prejudice in Brazil. *European Journal of Personality, 29*(1), 17–27. https://doi.org/10.1002/per.1978

Chambers, J. R., Schlenker, B. R., & Collisson, B. (2013). Ideology and prejudice: The role of value conflicts. *Psychological Science, 24*(2), 140–149. https://doi.org/10.1177/0956797612447820

Cohrs, J. C., & Asbrock, F. (2009). Right-wing authoritarianism, social dominance orientation and prejudice against threatening and competitive ethnic groups. *European Journal of Social Psychology, 39*(2), 270–289. https://doi.org/10.1002/ejsp.545

Cowling, M. M., Anderson, J. R., & Ferguson, R. (2019). Prejudice-relevant Correlates of Attitudes towards Refugees: A Meta-analysis. *Journal of Refugee Studies, 32*(3), 502–524. https://doi.org/10.1093/jrs/fey062

Crisp, R. J., & Turner, R. N. (2012). Chapter Three - The Imagined Contact Hypothesis. In J. M. Olson & M. P. Zanna (Eds.), *Advances in Experimental Social Psychology* (Vol. 46, pp. 125–182). Academic Press. https://doi.org/10.1016/B978-0-12-394281-4.00003-9

Dasgupta, N. (2004). Implicit Ingroup Favoritism, Outgroup Favoritism, and Their Behavioral Manifestations. *Social Justice Research, 17*(2), 143–169. https://doi.org/10.1023/B:SORE.0000027407.70241.15

Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-group friendships and intergroup attitudes: A meta-analytic review. *Personality and Social Psychology Review, 15*(4), 332–351. https://doi.org/10.1177/1088868311411103

Dhont, K., Van Hiel, A., & Hewstone, M. (2014). Changing the ideological roots of prejudice: Longitudinal effects of ethnic intergroup contact on social dominance orientation. *Group Processes & Intergroup Relations, 17*(1), 27–44. https://doi.org/10.1177/1368430213497064

Dixon, J., Levine, M., Reicher, S., & Durrheim, K. (2012). Beyond prejudice: Are negative evaluations the problem and is getting us to like one another more the solution? *Behavioral and Brain Sciences, 35*(6), 411–425. https://doi.org/10.1017/S0140525X11002214

Dovidio, J. F., Hewstone, M., Glick, P., & Esses, V. M. (2010). Prejudice, stereotyping and discrimination: Theoretical and empirical overview. In J. F. Dovidio, M. Hewstone, & P. Glick (Eds.), *Prejudice, Stereotyping and Discrimination* (pp. 3–28). Sage. http://digital.casalini.it/9781446248386

Dovidio, J. F., Love, A., Schellhaas, F. M. H., & Hewstone, M. (2017). Reducing intergroup bias through intergroup contact: Twenty years of progress and future directions. *Group Processes & Intergroup Relations, 20*(5), 606–620. https://doi.org/10.1177/1368430217712052

Duckitt, J., & Sibley, C. G. (2007). Right wing authoritarianism, social dominance orientation and the dimensions of generalized prejudice. *European Journal of Personality: Published for the European Association of Personality Psychology, 21*(2), 113–130. https://doi.org/10.1002/per.614

Duckitt, J., & Sibley, C. G. (2009). A Dual-Process Motivational Model of Ideology, Politics, and Prejudice. *Psychological Inquiry, 20*(2/3), 98–109. https://doi.org/10.1080/10478400903028540

Ekehammar, B., Akrami, N., Gylje, M., & Zakrisson, I. (2004). What matters most to prejudice: Big five personality, social dominance orientation, or right-wing authoritarianism? *European Journal of Personality, 18*(6), 463–482. https://doi.org/10.1002/per.526

Ellemers, N. (2018). Gender Stereotypes. *Annual Reviews of Psychology, 69*, 275–298. https://doi.org/10.1146/annurev-psych-122216-011719

Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: a new look at an old issue. *Psychological Methods, 12*(2), 121. https://doi.org/10.1037/1082-989X.12.2.121

European Social Survey (2016). *Survey Documentation, Appendix A2*. Retrieved 01.02.2024 from

https://stessrelpubprodwe.blob.core.windows.net/data/round8/survey/ESS8_appendix_a2_e02_1.pdf

Eurostat. (2017). *Immigration in EU member states*. https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20171215-1

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*(6), 878–902. https://doi.org/10.1037/0022-3514.82.6.878

Friehs, M.-T., Bracegirdle, C., Reimer, N. K., Wölfer, R., Schmidt, P., Wagner, U., & Hewstone, M. (2024). The between-person and within-person effects of intergroup contact on outgroup attitudes: A multi-context examination. *Social Psychological and Personality Science, 15*(2), 125–141. https://doi.org/10.1177/19485506231153017

Gaertner, S. L., Rust, M. C., Dovidio, J. F., Bachman, B. A., & Anastasio, P. A. (1996). The contact hypothesis: The role of a common ingroup identity on reducing intergroup bias among majority and minority group members. In *What's social about social cognition? Research on socially shared cognition in small groups* (pp. 230–260). SAGE Publications, Inc. https://doi.org/10.4135/9781483327648.n10

Gerlitz, J.-Y., Axenfeld, J. B., Cornesse, C., Groh-Samberg, O., Kroh, M., Lengfeld, H., Liebig, S., Minkus, L., Reinecke, J., & Richter, D. (2024). The German Social Cohesion Panel (SCP): Theoretical Background, Instruments, Survey Design, and Analytical Potential. https://osf.io/preprints/osf/tew78

Grigoryan, L. (2019). *Beyond Us versus Them: Explaining Intergroup Bias in Multiple Categorization*.

Grigoryan, L. (2020). Perceived Similarity in Multiple Categorisation. *Applied Psychology, 69*(4), 1122–1144. https://doi.org/10.1111/apps.12202

Grigoryan, L., Jones, B. H., Cohrs, J. C., Boehnke, K., & Easterbrook, M. J. (2023). Differentiating Between Belief-Indicative and Status-Indicative Groups Improves Predictions of Intergroup Attitudes. *Personality and Social Psychology Bulletin, 49*(7), 1097–1112. https://doi.org/10.1177/01461672221092852

Groh-Samberg, O., Schröder, T., & Speer, A. (2023). Social Milieus and Social Integration. From Theoretical Considerations to an Empirical Model. *KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie, 75*(1), 305–329. https://doi.org/10.1007/s11577-023-00892-5

Guffler, K., & Wagner, U. (2017). Backfire of good intentions: Unexpected long-term contact intervention effects in an intractable conflict area. *Peace and Conflict: Journal of Peace Psychology, 23*(4), 383–391. https://doi.org/10.1037/pac0000264

Hagendoorn, L. (1995). Intergroup Biases in Multiple Group Systems: The Perception of Ethnic Hierarchies. *European Review of Social Psychology, 6*(1), 199–228. https://doi.org/10.1080/14792779443000058

Hailey, S. E., & Olson, K. R. (2013). A Social Psychologist's Guide to the Development of Racial Attitudes. *Social and Personality Psychology Compass, 7*(7), 457–469. https://doi.org/10.1111/spc3.12038

Hässler, T., Uluğ, Ö. M., Kappmeier, M., & Travaglino, G. A. (2021). Intergroup contact and social change: An integrated contact-collective action model. *Journal of Social Issues, 77*(1), 217–241. https://doi.org/10.1111/josi.12412

Hauser, O. P., & Norton, M. I. (2017, 2017/12/01/). (Mis)perceptions of inequality. *Current Opinion in Psychology, 18*, 21–25. https://doi.org/10.1016/j.copsyc.2017.07.024

Heine, S. J., Proulx, T., & Vohs, K. D. (2006). The meaning maintenance model: On the coherence of social motivations. *Personality and Social Psychology Review, 10*(2), 88–110. https://doi.org/10.1207/s15327957pspr1002_1

Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup Bias. *Annual Review of Psychology, 53*(1), 575–604. https://doi.org/10.1146/annurev.psych.53.100901.135109

Ho, A. K., Sidanius, J., Kteily, N., Sheehy-Skeffington, J., Pratto, F., Henkel, K. E., Foels, R., & Stewart, A. L. (2015). The Nature of Social Dominance Orientation: Theorizing and Measuring Preferences for Intergroup Inequality Using the New SDO7 Scale. *Journal of Personality and Social Psychology, 109*(6). https://doi.org/10.1037/pspi0000033

Hodson, G. (2021). Pushing Back Against the Microaggression Pushback in Academic Psychology: Reflections on a Concept-Creep Paradox. *Perspectives on Psychological Science, 16*(5), 932–955. https://doi.org/10.1177/1745691621991863

Hodson, G., & Meleady, R. (2024). Replicating and extending Sengupta et al.(2023): Contact predicts no within-person longitudinal outgroup-bias change. *American Psychologist, 79*(3), 451. https://doi.org/10.1037/amp0001210

Horwitz, S. R., & Dovidio, J. F. (2017). The rich—love them or hate them? Divergent implicit and explicit attitudes toward the wealthy. *Group Processes & Intergroup Relations, 20*(1), 3–31. https://doi.org/10.1177/1368430215596075

Ibáñez, A., Haye, A., González, R., Hurtado, E., & Henríquez, R. (2009). Multi-level analysis of cultural phenomena: The role of ERPs approach to prejudice. *Journal for the Theory of Social Behaviour, 39*(1), 81–110. https://doi.org/10.1111/j.1468-5914.2008.00391.x

Jackson, L. M. (2020). Defining Prejudice. In *The Psychology of Prejudice* (2 ed., pp. 9–26). American Psychological Association. http://www.jstor.org/stable/j.ctv1chrxnp.5

Jetten, J., Spears, R., & Manstead, A. S. (2001). Similarity as a source of differentiation: The role of group identification. *European Journal of Social Psychology, 31*(6), 621–640. https://doi.org/10.1002/ejsp.72

Jost, J. T., Banaji, M. R., & Nosek, B. A. (2004). A Decade of System Justification Theory: Accumulated Evidence of Conscious and Unconscious Bolstering of the Status Quo. *Political Psychology, 25*(6), 881–919. https://doi.org/10.1111/j.1467-9221.2004.00402.x

Koch, A., Dorrough, A., Glöckner, A., & Imhoff, R. (2020). The ABC of society: Perceived similarity in agency/socioeconomic success and conservative-progressive beliefs increases intergroup cooperation. *Journal of Experimental Social Psychology, 90*, 103996. https://doi.org/10.1016/j.jesp.2020.103996

Koch, A., Imhoff, R., Dotsch, R., Unkelbach, C., & Alves, H. (2016). The ABC of stereotypes about groups: Agency/socioeconomic success, conservative–progressive beliefs, and communion. *Journal of Personality and Social Psychology, 110*(5), 675–709. https://doi.org/10.1037/pspa0000046

Kochhar, L., & Moslimani, M. (2023). Wealth gaps across racial and ethnic groups. https://www.pewresearch.org/2023/12/04/wealth-gaps-across-racial-and-ethnic-groups

Kohut, A., Doherty, C., Dimock, M., & Keeter, S. (2012). Partisan polarization surges in Bush, Obama years. https://www.pewresearch.org/wp-content/uploads/sites/4/legacy-pdf/06-04-12-Values-Release.pdf

Kotzur, P. F., & Wagner, U. (2021). The dynamic relationship between contact opportunities, positive and negative intergroup contact, and prejudice: A longitudinal investigation. *Journal of Personality and Social Psychology, 120*(2), 418. https://doi.org/10.1037/pspi0000258

Kuppens, T., Spears, R., Manstead, A. S. R., Spruyt, B., & Easterbrook, M. J. (2018). Educationism and the irony of meritocracy: Negative attitudes of higher educated people towards the less educated. *Journal of Experimental Social Psychology, 76*, 429–447. https://doi.org/10.1016/j.jesp.2017.11.001

Leach, C. W., Ellemers, N., & Barreto, M. (2007). Group virtue: the importance of morality (vs. competence and sociability) in the positive evaluation of in-groups. *Journal of Personality and Social Psychology, 93*(2), 234. https://doi.org/10.1037/0022-3514.93.2.234

Lemmer, G., & Wagner, U. (2015). Can we really reduce ethnic prejudice outside the lab? A meta-analysis of direct and indirect contact interventions. *European Journal of Social Psychology, 45*(2), 152–168. https://doi.org/10.1002/ejsp.2079

Levin, S., Federico, C. M., Sidanius, J., & Rabinowitz, J. L. (2002). Social Dominance Orientation and Intergroup Bias: The Legitimation of Favoritism for High-Status Groups. *Personality and Social Psychology Bulletin, 28*(2), 144–157. https://doi.org/10.1177/0146167202282002

Li, Z., Xu, M., Fan, L., Zhang, L., & Yang, D. (2021). Collective self-esteem predicts the extent to which low-status group members favor a high-status outgroup. *Current Psychology, 40*(5), 2095–2103. https://doi.org/10.1007/s12144-019-0148-0

Liberman, N., Trope, Y., & Stephan, E. (2007). Psychological distance. In E. T. H. Arie W. Kruglanski (Ed.), *Social psychology: Handbook of basic principles, 2nd ed.* (pp. 353–381). The Guilford Press.

Magee, J. C., & Smith, P. K. (2013). The Social Distance Theory of Power. *Personality and Social Psychology Review, 17*(2), 158–186. https://doi.org/10.1177/1088868312472732

Meleady, R., Crisp, R. J., Dhont, K., Hopthrow, T., & Turner, R. N. (2020). Intergroup contact, social dominance, and environmental concern: A test of the cognitive-liberalization hypothesis. *Journal of Personality and Social Psychology, 118*(6), 1146. https://doi.org/10.1037/pspi0000196

Mokros, N., & Zick, A. (2023). Gruppenbezogene Menschenfeindlichkeit zwischen Krisen-und Konfliktbewältigung. In A. Zick, B. Küpper, N. Mokros, & Friedrich-Ebert-Stiftung (Eds.), *Die distanzierte Mitte. Rechtsextreme und Demokratiegefährdende*

Einstellungen in Deutschland 2022/23 (pp. 149–184). Bonn: Dietz. https://pub.uni-bielefeld.de/record/2984555

Montoya, R. M., & Horton, R. S. (2013). A meta-analytic investigation of the processes underlying the similarity-attraction effect. *Journal of Social and Personal Relationships, 30*(1), 64–94. https://doi.org/10.1177/0265407512452989

Montoya, R. M., Horton, R. S., & Kirchner, J. (2008). Is actual similarity necessary for attraction? A meta-analysis of actual and perceived similarity. *Journal of Social and Personal Relationships, 25*(6), 889–922. https://doi.org/10.1177/0265407508096700

Morgenroth, T., & Ryan, M. K. (2018). Quotas and affirmative action: Understanding group-based outcomes and attitudes. *Social and Personality Psychology Compass, 12*(3), e12374. https://doi.org/10.1111/spc3.12374

Morry, M. M. (2007). The attraction-similarity hypothesis among cross-sex friends: Relationship satisfaction, perceived similarities, and self-serving perceptions. *Journal of Social and Personal Relationships, 24*(1), 117–138. https://doi.org/10.1177/0265407507072615

Muthén, L. K., & Muthén, B. O. (1998-2017). *Mplus User's Guide. Eighth Edition.* Los Angeles, CA: Muthén & Muthén.

Newheiser, A.-K., Dunham, Y., Merrill, A., Hoosain, L., & Olson, K. R. (2014). Preference for high status predicts implicit outgroup bias among children from low-status groups. *Developmental Psychology, 50*(4), 1081. https://doi.org/10.1037/a0035054

Osborne, D., Costello, T. H., Duckitt, J., & Sibley, C. G. (2023). The psychological causes and societal consequences of authoritarianism. *Nature Reviews psychology, 2*(4), 220–232. https://doi.org/10.1038/s44159-023-00161-4

Osborne, D., Satherley, N., Little, T. D., & Sibley, C. G. (2021). Authoritarianism and social dominance predict annual increases in generalized prejudice. *Social Psychological and Personality Science, 12*(7), 1136–1145. https://doi.org/10.1177/1948550620969608

Oxford University Press (n.d.). *Prejudice*. Oxford Reference. Retrieved January 20, 2025 from https://www.oxfordreference.com/display/10.1093/oi/authority.20110803100343319

Paluck, E. L., Green, S. A., & Green, D. P. (2019). The contact hypothesis re-evaluated. *Behavioural Public Policy, 3*(2), 129–158. https://doi.org/10.1017/bpp.2018.25

Paolini, S., Gibbs, M., Sales, B., Anderson, D., & McIntyre, K. (2024). Negativity bias in intergroup contact: Meta-analytical evidence that bad is stronger than good, especially when people have the opportunity and motivation to opt out of contact. *Psychological Bulletin*. https://doi.org/10.1037/bul0000439

Paolini, S., & McIntyre, K. (2019). Bad is stronger than good for stigmatized, but not admired outgroups: Meta-analytical tests of intergroup valence asymmetry in individual-to-group generalization experiments. *Personality and Social Psychology Review, 23*(1), 3–47. https://doi.org/10.1177/1088868317753504

Pettigrew, T. F. (1997). Generalized intergroup contact effects on prejudice. *Personality and social psychology bulletin, 23*(2), 173-185. https://doi.org/10.1177/0146167297232006

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual Review of Psychology, 49*(1), 65–85. https://doi.org/10.1146/annurev.psych.49.1.65

Pettigrew, T. F. (2009). *Secondary Transfer Effect of Contact: Do Intergroup Contact Effects Spread to Noncontacted Outgroups?* (Vol. 40). Hogrefe Publishing. https://doi.org/10.1027/1864-9335.40.2.55

Pettigrew, T. F., & Tropp, L. R. (2006). A Meta-Analytic Test of Intergroup Contact Theory. *Journal of Personality and Social Psychology, 90*(5), 751. https://doi.org/10.1037/0022-3514.90.5.751

Pickett, K., Gauhar, A., & Wilkinson, R. (2024). The Spirit Level at 15: The Enduring Impact of Inequality. https://doi.org/10.15124/yao-de9s-7k93

Piketty, T., & Saez, E. (2014). Inequality in the long run. *Science, 344*(6186), 838–843. https://doi.org/10.1126/science.1251936

Pratto, F., Sidanius, J., & Levin, S. (2006). Social dominance theory and the dynamics of intergroup relations: Taking stock and looking forward. *European Review of Social Psychology, 17*(1), 271–320. https://doi.org/10.1080/10463280601055772

Pratto, F., Sidanius, J., Stallworth, L. M., & Malle, B. F. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology, 67*(4), 741–763. https://doi.org/10.1037/0022-3514.67.4.741

Qualtrics. (2021). *Qualtrics.* In https://www.qualtrics.com

Rabe-Hesketh, S., Skrondal, A., & Zheng, X. (2007). 10 - Multilevel Structural Equation Modeling. In S.-Y. Lee (Ed.), *Handbook of Latent Variable and Related Models* (pp. 209–227). North-Holland. https://doi.org/https://doi.org/10.1016/B978-044452044-9/50013-6

Reicher, S. (2012). From perception to mobilization: the shifting paradigm of prejudice. In J. Dixon & M. Levine (Eds.), *Beyond Prejudice: Extending the Social Psychology of Conflict, Inequality and Social Change* (pp. 27–47). Cambridge University Press. https://doi.org/10.1017/CBO9781139022736.003

Reimer, N. K., Becker, J. C., Benz, A., Christ, O., Dhont, K., Klocke, U., Neji, S., Rychlowska, M., Schmid, K., & Hewstone, M. (2017). Intergroup contact and social change: Implications of negative and positive contact for collective action in advantaged and disadvantaged groups. *Personality and Social Psychology Bulletin, 43*(1), 121–136. https://doi.org/10.1177/0146167216676478

Reimer, N. K., Hughes, J., Blaylock, D., Donnelly, C., Wölfer, R., & Hewstone, M. (2022). Shared education as a contact-based intervention to improve intergroup relations among

adolescents in postconflict Northern Ireland. *Developmental Psychology, 58*(1), 193–208. https://doi.org/10.1037/dev0001274

Reimer, N. K., & Sengupta, N. K. (2023). Meta-analysis of the "ironic" effects of intergroup contact. *Journal of Personality and Social Psychology, 124*(2), 362. https://doi.org/10.31234/osf.io/vrsqe

Reynolds, K. J., Turner, J. C., Alexander Haslam, S., Ryan, M. K., Bizumic, B., & Subasic, E. (2007). Does personality explain in-group identification and discrimination? Evidence from the minimal group paradigm. *British Journal of Social Psychology, 46*(3), 517–539. https://doi.org/10.1348/014466606X153080

Rubin, M., & Hewstone, M. (2004). Social Identity, System Justification, and Social Dominance: Commentary on Reicher, Jost et al., and Sidanius et al. *Political Psychology, 25*(6), 823–844. http://www.jstor.org/stable/3792280

Saldarriaga, L., Boege, R., Rees, J., Koller, C., Carvacho, H., & , & Bohner, G. (2017). *SDO7 Scale: Translation and Validation* annual meeting of the FGSP, Ulm.

Schaller, M., & Neuberg, S. L. (2012). Intergroup Prejudices and Intergroup Conflicts. In C. Crawford & D. Krebs (Eds.), *Foundations of Evolutionary Psychology* (2nd ed.). Psychology Press. https://doi.org/10.4324/9780203888155

Schneider, S. (2020). *Guidelines for the measurement of educational attainment in the European Social Survey*. Retrieved 01.02.2024 from https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjGx_j4oIqEAxWTbPEDHRkzCRQQFnoECBYQAQ&url=https%3A%2F%2Fwww.europeansocialsurvey.org%2Fsites%2Fdefault%2Ffiles%2F2023-06%2FESS_guidelines_for_the_measurement_of_educational_a.pdf&usg=AOvVaw3fK2XieYNSrmSPl-ZPj7vX&opi=89978449

Schwartz, S. H. (2007). Value orientations: Measurement, antecedents and consequences across nations. In *Measuring attitudes cross-nationally: Lessons from the European Social Survey.* (pp. 169–203). Sage Publications, Inc. https://doi.org/10.4135/9781849209458.n9

Schwartz, S. H., Breyer, B., & Danner, D. (2015). Human Values Scale (ESS). Zusammenstellung sozialwissenschaftlicher Items und Skalen (ZIS). https://doi.org/10.6102/zis234

Schwartz, S. H., Melech, G., Lehmann, A., Burgess, S., Harris, M., & Owens, V. (2001). Extending the Cross-Cultural Validity of the Theory of Basic Human Values with a Different Method of Measurement. *Journal of Cross-Cultural Psychology, 32*, 519–542. https://doi.org/10.1177/0022022101032005001

Sengupta, N. K., Reimer, N. K., Sibley, C. G., & Barlow, F. K. (2023). Does intergroup contact foster solidarity with the disadvantaged? A longitudinal analysis across 7 years. *American Psychologist*. https://doi.org/10.1037/amp0001079

Shevchenko, Y., Kuhlmann, T., & Reips, U.-D. (2021). Samply: A user-friendly smartphone app and web-based means of scheduling and sending mobile notifications for experience-sampling research. *Behavior Research Methods, 53*(4), 1710–1730. https://doi.org/10.3758/s13428-020-01527-9

Shook, N. J., Hopkins, P. D., & Koech, J. M. (2016). The effect of intergroup contact on secondary group attitudes and social dominance orientation. *Group Processes & Intergroup Relations, 19*(3), 328–342. https://doi.org/10.1177/1368430215572266

Sibley, C. G., & Duckitt, J. (2008). Personality and prejudice: A meta-analysis and theoretical review. *Personality and Social Psychology Review, 12*(3), 248–279. https://doi.org/10.1177/1088868308319226

Sibley, C. G., Robertson, A., & Wilson, M. S. (2006). Social dominance orientation and right-wing authoritarianism: Additive and interactive effects. *Political Psychology, 27*(5), 755–768. https://doi.org/10.1111/j.1467-9221.2006.00531.x

Sidanius, J., Cotterill, S., Sheehy-Skeffington, J., Kteily, N., & Carvacho, H. (2017). Social dominance theory: Explorations in the psychology of oppression. In *The Cambridge handbook of the psychology of prejudice.* (pp. 149–187). Cambridge University Press. https://doi.org/10.1017/9781316161579.008

Sidanius, J., Kteily, N., Sheehy-Skeffington, J., Ho, A. K., Sibley, C., & Duriez, B. (2013). You're inferior and not worth our concern: The interface between empathy and social dominance orientation. *Journal of Personality, 81*(3), 313–323. https://doi.org/10.1111/jopy.12008

Sidanius, J., & Pratto, F. (1999). *Social Dominance: An Intergroup Theory of Social Hierarchy and Oppression*. Cambridge University Press. https://doi.org/10.1017/CBO9781139175043

Sidanius, J., & Pratto, F. (2012). Social dominance theory. In P. A. M. Van Lange, E. T. Higgins, & A. W. Kruglanski (Eds.), *Handbook of Theories of Social Psychology* (Vol. 2). Sage. http://digital.casalini.it/9781446269008

Sidanius, J., Pratto, F., & Mitchell, M. (1994). In-group identification, social dominance orientation, and differential intergroup social allocation. *The Journal of Social Psychology, 134*(2), 151–167. https://doi.org/10.1080/00224545.1994.9711378

Sidanius, J., Pratto, F., & Rabinowitz, J. L. (1994). Gender, ethnic status, and ideological asymmetry: A social dominance interpretation. *Journal of Cross-Cultural Psychology, 25*(2), 194–216. https://doi.org/10.1177/0022022194252003

Solomon, S., Greenberg, J., & Pyszczynski, T. (1991). A Terror Management Theory of Social Behavior: The Psychological Functions of Self-Esteem and Cultural Worldviews.

Advances in Experimental Social Psychology, 24, 93–159. https://doi.org/10.1016/S0065-2601(08)60328-7

Son Hing, L. S., Bobocel, D. R., Zanna, M. P., Garcia, D. M., Gee, S. S., & Orazietti, K. (2011). The merit of meritocracy. *Journal of Personality and Social Psychology, 101*(3), 433–450. https://doi.org/10.1037/a0024618

Speer, A., & Boehnke, K. (2025). *Multiple Forms of Prejudice? Ingroup Bias, Status Bias, and Similarity-Attraction as Distinct Biases Shaping Group Evaluation.* [Manuscript in preparation].

Speer, A., & Grigoryan, L. (2025). *Ideological Foundations of Ingroup Bias and Status Bias.* [Manuscript in Preparation].

Sprecher, S. (2014). Effects of actual (manipulated) and perceived similarity on liking in get-acquainted interactions: The role of communication. *Communication Monographs, 81*(1), 4–27. https://doi.org/10.1080/03637751.2013.839884

Stangor, C. (2015). The Study of Stereotyping, Prejudice, and Discrimination within Social Psychology: A Quick History of Theory and Research In T. D. Nelson (Ed.), *Handbook of Prejudice, Stereotyping, and Discrimination* (2nd ed., pp. 3–27). Psychology Press. https://doi.org/10.4324/9780203361993

Statistisches Bundesamt (Destatis), Wissenschaftszentrum Berlin für Sozialforschung (WZB), & (BiB), B. f. B. (2024). *Sozialbericht 2024: Ein Datenreport für Deutschland*. https://www.sozialbericht.de

Statistisches Bundesamt (Destatis), (n.d.). *Lebensbedingungen und Armutsgefährdung*. Destatis. https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Einkommen-Konsum-Lebensbedingungen/Lebensbedingungen-Armutsgefaehrdung/_inhalt.html

Stephan, W. G., Diaz-Loving, R., & Duran, A. (2000). Integrated threat theory and intercultural attitudes: Mexico and the United States. *Journal of Cross-Cultural Psychology, 31*(2), 240–249. https://doi.org/10.1177/0022022100031002006

Stephan, W. G., & Stephan, C. W. (1985). Intergroup anxiety. *Journal of Social Issues, 41*(3), 157–175. https://doi.org/10.1111/j.1540-4560.1985.tb01134.x

Tajfel, H., & Turner, J. (1979). An Integrative Theory of Intergroup Conflict. In H. Tajfel, J. C. Turner, W. Austin, & S. Worchel (Eds.), *Organizational Identitiy: A Reader* (pp. 33–47). Brooks/Cole.

Task Force FGZ-Datenzentrum (2022). Gefährdeter Zusammenhalt? Polarisierungs- und Spaltungstendenzen in Deutschland. https://doi.org/10.26092/elib/1739

Thomsen, L., Green, E. G., & Sidanius, J. (2008). We will hunt them down: How social dominance orientation and right-wing authoritarianism fuel ethnic persecution of immigrants in fundamentally different ways. *Journal of Experimental Social Psychology, 44*(6), 1455–1464. https://doi.org/10.1016/j.jesp.2008.06.011

Tropp, L. R., & Pettigrew, T. F. (2005). Relationships between intergroup contact and prejudice among minority and majority status groups. *Psychological Science, 16*(12), 951–957. https://doi.org/10.1111/j.1467-9280.2005.01643.x

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987). *Rediscovering the social group: A self-categorization theory*. Basil Blackwell.

Van Assche, J., Swart, H., Schmid, K., Dhont, K., Al Ramiah, A., Christ, O., Kauff, M., Rothmann, S., Savelkoul, M., & Tausch, N. (2023). Intergroup contact is reliably associated with reduced prejudice, even in the face of group threat and discrimination. *American Psychologist*. https://doi.org/10.1037/amp0001144

Van Laar, C., Levin, S., Sinclair, S., & Sidanius, J. (2005). The effect of university roommate contact on ethnic attitudes and behavior. *Journal of Experimental Social Psychology, 41*(4), 329–345. https://doi.org/10.1016/j.jesp.2004.08.002

van Zalk, M. H., Kotzur, P. F., Schmid, K., Al Ramiah, A., & Hewstone, M. (2021). Adolescent development of interethnic attitudes following a social intervention to increase intergroup contact: The moderating role of affective forecasting. *Developmental Psychology, 57*(6), 1000. https://doi.org/10.1037/dev0001194

Vezzali, L., Di Bernardo, G. A., Stathi, S., Cadamuro, A., Lášticová, B., & Andraščiková, S. (2018). Secondary transfer effect among children: The role of social dominance orientation and outgroup attitudes. *British Journal of Social Psychology, 57*(3), 547–566. https://doi.org/10.1111/bjso.12248

Wetherell, G. A., Brandt, M. J., & Reyna, C. (2013). Discrimination across the ideological divide: The role of value violations and abstract values in discrimination by liberals and conservatives. *Social Psychological and Personality Science, 4*(6), 658–667. https://doi.org/10.1177/19485506134760

Wilkinson, R., & Pickett, K. (2010). *The Spirit Level. Why Equality Is Better for Everyone*. Penguin.

Wölfer, R., Schmid, K., Hewstone, M., & van Zalk, M. (2016). Developmental Dynamics of Intergroup Contact and Intergroup Attitudes: Long-Term Effects in Adolescence and Early Adulthood. *Child Development, 87*(5), 1466–1478. https://doi.org/10.1111/cdev.12598

Yzerbyt, V., & Cambon, L. (2017). The Dynamics of Compensation: When Ingroup Favoritism Paves the Way for Outgroup Praise. *Personality and Social Psychology Bulletin, 43*(5), 587–600. https://doi.org/10.1177/0146167216689066

Yzerbyt, V., & Corneille, O. (2005). Cognitive process: Reality constraints and integrity concerns in social perception. *On the Nature of Prejudice: Fifty Years after Allport*, 175–191. https://doi.org/10.1002/9780470773963.ch11

Appendix

Appendix 3A: Validity Analyses with a Balanced Sample

Subset sample

For some groups (e.g., religious Christians), more group members could be identified among the participants than for others (e.g., religious Muslims) due to different prevalence in the German society as well as sampling bias. In this validity analysis we conduct the main analyses with a subset of the sample that has a more even distribution of group memberships. Participants have multiple group memberships which is why we cannot simply select an even number of participants for each social group. Therefore, we subset the sample as follows.

From a dataset containing all participants that were included in the main analysis, the group with the least number of group members was identified (e.g., religious Muslims) and all their members selected for the subset. The group with the least number of group members defined the minimum of group members each group in the subset should have (except for the SCP pilot study where only eight participants were Muslim so the target number of group members was set to 50). Next, from the subset, the social group with the least number of group members was identified. In order to increase the number of group members to up to the targeted number of group members, group members were randomly selected from all participants and added to the subset. This procedure was repeated until the social group with the lowest number of group members had reached the target number of group members (or there were no more group members among the participants).

This procedure did not result in a perfectly balanced subset (which, again, is impossible to achieve given multiple group memberships), but resulted in a subset that is surely more balanced in terms of group memberships as the main sample. Note that the number of participants is consequently lower in the subset.

Study 1 - SCP pilot study

The main analyses as reported in the manuscript were replicated with the identified subset of participants. The direction and significances of the effects remain unchanged compared to the main analyses.

Table 3A-1

Study 1: Number of Group Members in the Subset (Given Multiple Group Membership)

	n
Big city	57
Countryside	51
West Germany	114
East Germany	76
German Nationality	176
Migrated to Germany	36
Religious Muslim	8
Religious Christian	52
University diploma	64
No professional education	51
Poor, e.g., unemployed	37
Rich, e.g., millionaires	33
Sympathize with the Greens	52
Sympathize with the AfD	23
Politically left-wing	93
Politically right-wing	33

Table 3A-2

Study 1: Model Summaries Based on the Balanced Subset of Data

Effect	Model 1	Model 2a	Model 2b	Model 3a	Model 3b	Model 4
			Fixed effects			
Intercept	5.82*** (0.05)	5.82*** (0.05)	5.82*** (0.05)	5.82*** (0.05)	5.82*** (0.05)	5.82*** (0.05)
Ingroup membership	0.63*** (0.04)		0.57*** (0.04)		0.59*** (0.04)	0.54*** (0.04)
Value Similarity		0.37*** (0.04)	0.22*** (0.04)			0.19*** (0.04)
Group Status				0.55*** (0.04)	0.51*** (0.04)	0.50*** (0.04)
			Random effects			
Variance components						
Level 1	4.19	4.45	4.14	4.28	3.93	3.90
Level 2	0.30	0.28	0.30	0.29	0.31	0.32
			Goodness of fit and model information			
N Participants	190	190	190	190	190	190
N Observations	2,997	2,997	2,997	2,997	2,997	2,997
Pseudo r^2	0.08	0.02	0.08	0.06	0.13	0.13
Deviance	12,939.20	13,110.65	12,908.49	13,000.75	12,761.10	12,735.99
AIC	12,955.85	13,127.23	12,931.77	13,017.38	12,784.55	12,766.13
Log-Likelihood	-6,473.93	-6,559.62	-6,460.88	-6,504.69	-6,387.27	-6,377.06
$\Delta\chi^2$			30.71***		178.10***	203.21***

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Study 2 - SCP Wave 1

The main analyses as reported in the manuscript were replicated with the identified subset of participants. The direction and significances of the remain unchanged compared to the main analyses.

Table 3A-3

Study 2: Number of Group Members in the Subset (Given Multiple Group Membership)

	n
Big city	917
Countryside	339
West Germany	1,036
East Germany	441
German Nationality	1,263
Migrated to Germany	386
Religious Muslim	211
Religious Christian	689
University diploma	394
No professional education	281
Poor, e.g., unemployed	331
Rich, e.g., millionaires	369
Sympathize with the Greens	245
Sympathize with the AfD	239
Politically left-wing	490
Politically right-wing	445

Table 3A-4

Study 2: Model Summaries Based on the Balanced Subset of Data

Effect	Model 1	Model 2a	Model 2b	Model 3a	Model 3b	Model 4
			Fixed effects			
Intercept	5.47*** (0.03)	5.47*** (0.03)	5.47*** (0.03)	5.47*** (0.03)	5.47*** (0.03)	5.47*** (0.03)
Ingroup membership	0.71*** (0.02)		0.64*** (0.02)		0.70*** (0.02)	0.63*** (0.02)
Value Similarity		0.47*** (0.02)	0.33*** (0.02)			0.34*** (0.02)
Group Status				0.14*** (0.02)	0.09*** (0.02)	0.12*** (0.02)
			Random effects			
Variance components						
Level 1	5.42	5.70	5.31	5.90	5.41	5.30
Level 2	1.13	1.11	1.13	1.10	1.13	1.13
			Goodness of fit and model information			
N Participants	1,477	1,477	1,477	1,477	1,477	1,477
N Observations	23,490	23,490	23,490	23,490	23,490	23,490
Pseudo r^2	0.07	0.03	0.08	0.002	0.07	0.08
Deviance	108,506.39	109,635.90	108,079.32	110,382.22	108,470.08	108,024.63
AIC	108,525.94	109,655.39	108,107.34	110,401.68	108,498.10	108,061.13
Log-Likelihood	-54,258.97	-54,823.70	-54,048.67	-55,196.84	-54,244.05	-54,024.56
$\Delta\chi^2$			427.07***		36.31***	481.76***

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix 3B: The Social Groups' Average Value Priorities

Abbreviations values

	Importance of…		Importance of…
crtiv	…being creative	hlppl	…helping people
rich	…being rich	suces	…being successful
eqopt	…equal opportunities	strgv	…having a strong government
shabt	…showing abilities	advnt	…adventurous life
safe	…being safe	bhprp	…behaving properly
diff	…being different	rspot	…being respected by others
frule	…follow rules	lylfr	…being loyal to friends
udrst	…understand others	env	…caring for the environment
modst	…being modest	trad	…follow traditions
gdtim	…having a good time	fun	…having fun
free	…being free		

Table 3B-1

Study 1: The social Groups' Average Value Priorities

	Abbreviation
Big city	bc
Countryside	cs
Western Germany	west
Eastern Germany	east
German Citizenship	ger
With migration background	mig
Muslim	muslim
Christian	christ
With tertiary degree	uni
Without vocational training	nodipl
Poor	poor
Rich	rich
Likes the Greens	green
Likes the AfD	afd
Politically left-leaning	left
Politically right-leaning	right

	crtiv	rich	eqopt	shabt	safe	diff	frule	udrst	modst	gdtim	free
bc	0.40	-1.56	0.77	-0.79	0.13	-0.21	-0.84	0.74	0.07	0.45	0.90
cs	0.48	-1.68	0.63	-0.81	0.25	-0.18	-0.84	0.71	0.16	0.36	0.88
west	0.45	-1.58	0.71	-0.78	0.17	-0.16	-0.89	0.72	0.11	0.38	0.90
east	0.34	-1.85	0.71	-0.95	0.39	-0.27	-0.62	0.72	0.23	0.30	0.79
ger	0.41	-1.68	0.71	-0.85	0.24	-0.21	-0.81	0.74	0.17	0.35	0.88
mig	0.32	-1.39	0.75	-0.71	0.42	-0.27	-0.44	0.55	-0.01	0.28	0.63
muslim	0.18	-1.49	0.81	-0.61	0.20	0.03	-0.75	0.47	-0.05	0.20	0.51
christ	0.41	-1.73	0.64	-0.91	0.29	-0.28	-0.71	0.73	0.19	0.25	0.78
uni	0.60	-1.66	0.80	-0.84	0.13	-0.25	-0.86	0.88	0.06	0.30	0.93
nodipl	0.28	-1.43	0.85	-0.69	-0.02	0.03	-0.97	0.54	-0.07	0.49	0.79
poor	0.38	-1.87	0.73	-0.73	0.37	-0.13	-0.69	0.64	0.29	0.26	0.82
rich	0.55	-1.42	0.66	-0.82	0.08	-0.18	-1.04	0.83	-0.01	0.47	1.00
green	0.78	-1.69	1.10	-0.70	-0.14	-0.07	-1.27	1.02	-0.02	0.37	1.06
afd	0.29	-1.72	0.27	-0.77	0.43	-0.12	-0.69	0.53	0.05	0.37	0.91
left	0.47	-1.76	0.93	-0.83	0.08	-0.15	-0.97	0.86	0.16	0.41	0.92
right	0.35	-1.44	0.33	-0.74	0.35	-0.27	-0.68	0.50	0.09	0.31	0.83

	hlppl	suces	strgv	advnt	bhprp	rspot	lylfr	env	trad	fun
bc	0.78	-0.32	0.34	-1.35	-0.25	-0.65	1.22	0.75	-0.28	-0.31
cs	0.84	-0.31	0.45	-1.42	-0.26	-0.76	1.21	0.68	-0.07	-0.32
west	0.81	-0.32	0.36	-1.35	-0.30	-0.70	1.21	0.70	-0.16	-0.31
east	0.80	-0.37	0.66	-1.56	-0.08	-0.64	1.16	0.61	-0.05	-0.32
ger	0.82	-0.34	0.46	-1.43	-0.24	-0.69	1.21	0.68	-0.14	-0.31
mig	0.63	-0.35	0.45	-1.46	0.09	-0.61	0.95	0.56	0.09	-0.48
muslim	0.72	-0.15	0.45	-1.38	0.08	-0.53	1.02	0.28	0.41	-0.45
christ	0.89	-0.35	0.49	-1.66	-0.15	-0.74	1.17	0.74	0.39	-0.45
uni	0.78	-0.18	0.21	-1.42	-0.34	-0.48	1.25	0.82	-0.17	-0.58
nodipl	0.64	-0.30	0.40	-0.85	-0.35	-0.66	1.13	0.39	-0.33	0.10
poor	0.78	-0.53	0.55	-1.40	-0.08	-0.71	1.08	0.59	-0.13	-0.23
rich	0.72	-0.18	0.32	-1.32	-0.41	-0.57	1.29	0.70	-0.25	-0.42
green	0.79	-0.35	-0.04	-1.19	-0.64	-0.65	1.35	1.30	-0.56	-0.47
afd	0.59	-0.25	0.93	-1.41	-0.18	-0.70	1.16	0.40	0.03	-0.14
left	0.88	-0.37	0.28	-1.36	-0.33	-0.68	1.27	0.83	-0.33	-0.33
right	0.63	-0.24	0.67	-1.37	-0.15	-0.65	1.11	0.51	0.19	-0.34

Table 3B-2

Study 2: The Social Groups' Average Value Priorities

	crtiv	rich	eqopt	shabt	safe	diff	frule	udrst	modst	gdtim	free
bc	0.13	-1.43	0.83	-0.63	0.32	-0.41	-0.63	0.66	0.11	0.18	0.94
cs	0.12	-1.64	0.81	-0.84	0.35	-0.47	-0.48	0.64	0.32	0.08	0.97
west	0.10	-1.41	0.83	-0.61	0.32	-0.46	-0.59	0.65	0.12	0.17	0.93
east	0.17	-1.61	0.80	-0.77	0.36	-0.38	-0.62	0.65	0.27	0.09	0.92
ger	0.13	-1.49	0.82	-0.68	0.33	-0.45	-0.60	0.66	0.19	0.14	0.93
mig	0.13	-1.37	0.75	-0.53	0.35	-0.27	-0.50	0.51	-0.02	0.20	0.80
muslim	-0.12	-1.27	0.89	-0.58	0.41	-0.39	-0.49	0.51	-0.17	0.32	0.64
christ	0.06	-1.49	0.77	-0.67	0.37	-0.52	-0.49	0.63	0.19	0.04	0.85
uni	0.21	-1.39	0.91	-0.51	0.16	-0.39	-0.69	0.77	0.01	0.12	0.96
nodipl	0.11	-1.37	0.91	-0.50	0.40	-0.44	-0.70	0.54	0.16	0.23	0.97
poor	0.20	-1.55	0.90	-0.66	0.36	-0.43	-0.64	0.64	0.31	0.08	0.98
rich	0.12	-1.29	0.78	-0.59	0.21	-0.44	-0.64	0.68	-0.03	0.19	0.97
green	0.24	-1.59	1.17	-0.47	0.07	-0.32	-0.80	0.81	0.02	0.18	0.97
afd	0.37	-1.18	0.14	-0.61	0.26	-0.39	-0.77	0.34	0.11	0.31	1.06
left	0.22	-1.58	1.14	-0.57	0.21	-0.36	-0.72	0.78	0.10	0.16	0.94
right	0.04	-1.25	0.32	-0.65	0.39	-0.48	-0.50	0.41	0.13	0.17	0.94

	hlppl	suces	strgv	advnt	bhprp	rspot	lylfr	env	trad	fun
bc	0.78	-0.27	0.35	-1.22	-0.19	-0.58	1.18	0.83	-0.37	-0.57
cs	0.86	-0.40	0.57	-1.44	-0.17	-0.74	1.21	0.78	0.05	-0.58
west	0.77	-0.29	0.32	-1.22	-0.15	-0.58	1.16	0.85	-0.32	-0.59
east	0.86	-0.30	0.58	-1.36	-0.22	-0.67	1.22	0.75	-0.18	-0.55
ger	0.81	-0.31	0.42	-1.29	-0.18	-0.61	1.20	0.82	-0.26	-0.58
mig	0.65	-0.12	0.41	-1.12	0.01	-0.54	0.84	0.71	-0.35	-0.53
muslim	0.72	0.00	0.41	-1.18	0.04	-0.44	0.79	0.13	0.10	-0.31
christ	0.84	-0.29	0.43	-1.41	-0.09	-0.59	1.16	0.83	0.12	-0.71
uni	0.72	-0.10	0.15	-1.14	-0.25	-0.40	1.19	0.95	-0.50	-0.76
nodipl	0.77	-0.44	0.27	-1.14	-0.11	-0.65	1.05	0.61	-0.33	-0.37
poor	0.85	-0.39	0.45	-1.26	-0.19	-0.77	1.12	0.85	-0.28	-0.54
rich	0.70	-0.08	0.25	-1.14	-0.26	-0.38	1.21	0.88	-0.42	-0.71
green	0.81	-0.32	-0.05	-1.04	-0.29	-0.51	1.23	1.40	-0.87	-0.62
afd	0.63	-0.15	0.77	-0.96	-0.50	-0.62	1.07	0.20	0.12	-0.22
left	0.87	-0.36	0.17	-1.18	-0.26	-0.64	1.24	1.10	-0.66	-0.59
right	0.64	-0.13	0.64	-1.21	-0.15	-0.46	1.10	0.47	0.11	-0.51

Appendix 3C: Interaction Effects

The preregistration of Study 2 has foreseen an analysis of interaction effects to test whether similarity-attraction and status bias differ for ingroups and outgroups. The results of these analyses are reported in this Appendix for conciseness.

Table 3C-1

Study 1: Model Parameters and Goodness of Fit for Multilevel Models

Effect	Model 1	Model 2
	Fixed effects	
Intercept	5.46*** (0.04)	5.48*** (0.04)
ingrp1	1.35*** (0.05)	1.25*** (0.05)
ValueSimilarity	0.18*** (0.03)	
ingrp1:ValueSimilarity	-0.16* (0.07)	
GroupStatus		0.55*** (0.02)
ingrp1:GroupStatus		-0.18** (0.06)
	Random effects	
Variance components		
Level 1	4.21	3.96
Level 2	0.36	0.37
	Goodness of fit and model information	
N Participants	571	571
N Observations	8,993	8,993
Pseudo r^2	0.08	0.13
Deviance	38,925.74	38,414.64
AIC	38,956.27	38,445.46
Log-Likelihood	-19,472.13	-19,216.73
$\Delta\chi^2$		511.11

Note. Standard errors are in parentheses. Similarity-attraction and status bias apply to the evaluation of ingroups and outgroups to a similar extend. There is a tendency for both effects to be stronger for the evaluation of outgroups than for the evaluation of ingroups, however, this effect does not reach the significance level of $\alpha = 0.001$.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3C-2

Study 2: Model Parameters and Goodness of Fit for Multilevel Models

Effect	Model 1	Model 2
	Fixed effects	
Intercept	5.01*** (0.01)	4.96*** (0.01)
ingrp1	1.30*** (0.01)	1.41*** (0.01)
ValueSimilarity	0.48*** (0.01)	
ingrp1:ValueSimilarity	-0.31*** (0.02)	
GroupStatus		0.11*** (0.01)
ingrp1:GroupStatus		-0.11*** (0.02)
	Random effects	
Variance components		
Level 1	5.00	5.17
Level 2	1.03	1.02
	Goodness of fit and model information	
N Participants	8,793	8,793
N Observations	139,640	139,640
Pseudo r^2	0.09	0.07
Deviance	633,704.40	638,131.35
AIC	633,744.73	638,171.63
Log-Likelihood	-316,866.37	-319,079.81

Note. Standard errors are in parentheses. Similarity-attraction and status bias are stronger for the evaluation of outgroups than for the evaluation of ingroups.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix 4A: Study 1 Model Fit

Confirmatory factor analysis (CFA) with the nine RWA items that were allowed to correlate within dimensions did not reach satisfactory global model fit ($\chi 2(18, N = 4383) = 44.61, p < 0.001$). Regarding local fit, all criteria but the Tucker-Lewis index (TLI = .880) indicate satisfactory fit (comparative fit index (CFI) = .940; root mean square error of approximation (RMSEA) = .019; standardized root mean square residual (SRMR) within <.001 and between = .044). The TLI, however, did not deviate greatly from the cut-off criteria of 0.90.

A CFA with the twelve SDO items which were not allowed to correlate among each other similarly revealed no global fit ($\chi 2(54, N = 4383) = 131.63, p < 0.001$) but adequate local fit with the exception of the CFI and TLI, which, however, did not deviate greatly from the cut-off criteria of 0.90 (CFI = 0.885; TLI = 0.86; RMSEA = 0.018; SRMR within = 0.000; SRMR between = 0.066). The combined model lacked satisfactory fit globally ($\chi 2(179, N = 4383) = 381.62, p < 0.001$) and locally regarding the CFI, TLI, and SRMR between (CFI = 0.856; TLI = 0.830; RMSEA = 0.016; SRMR within = 0.000; SRMR between = 0.082). Therefore, based on modification indices and an inspection of the scale, three SDO item pairs were allowed to correlate. The items that were allowed to correlate were each similar in content and/or wording and were both either reversed or non-reversed items:

SDO-2 with SDO-5

2: *In getting what you want, it is sometimes necessary to use force against other groups.*

5: *To get ahead in life, it is sometimes necessary to step on other groups.*

SDO-4 with SDO-12:

4: *We would have fewer problems if we treated groups more equally.*

12: *It would be good if groups could be equal.*

SDO-7 with SDO-12

7: *Group equality should be our ideal.*

This resulted in improved model fit of the SDO CFA ($\chi 2(51, N = 4383) = 82.19$, $p = 0.004$; CFI = 0.956; TLI = 0.943; RMSEA = 0.011; SRMR within = 0.000; SRMR between = 0.052) and the combined measurement model ($\chi 2(176, N = 4383) = 323.193$, $p < 0.001$; CFI = 0.895; TLI = 0.875; RMSEA = 0.014; SRMR within = 0.000; SRMR between = 0.078).

Appendix 4B: Correlational Tables

Table 4B-1

Study 1: Means, Standard Deviations, and Correlations of the Dependent and Independent Variables

Variable	*n*	*M*	*SD*	1	2	3	4	5
1. Group evaluation	4,383	67.44	21.12	–				
2. Shared group membership	4,383	0.38	0.49	.15***	–			
3. Group status	4,383	0.50	0.16	.01	.10***	–		
4. RWA	4,383	-0.002	0.50	.07***	.01	.00	–	
5. SDO	4,383	0.01	0.88	-.02	-.00	.00	.39***	–

Note. Means and standard deviations of the predictors are standardized to zero (for all means) and one (for all standard deviations) *within* participants, but may take different values *across* participants.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4B-2

Study 2: Means, Standard Deviations, and Correlations of the Dependent and Independent Variables

Variable	*n*	*M*	*SD*	1	2	3	4	5
1. Group evaluation	112,060	5.52	2.47	–				
2. Shared group membership	112,060	0.29	0.46	.20***	–			
3. Group status	112,060	0.52	0.17	.05***	.15***	–		
4. RWA	112,060	-0.001	0.68	-.05***	-.04***	-.00	–	
5. SDO	112,060	0.001	0.45	-.06***	-.01**	.00	.30***	–

Note. Means and standard deviations of the predictors are standardized to zero (for all means) and one (for all standard deviations) *within* participants, but may take different values *across* participants.

$^{\dagger} p \leq .10$. $^{*} p < .05$. $^{**} p < .01$. $^{***} p < .001$.

Appendix 4C: Complete Model Summaries

Table 4C-1

Study 1: Summaries of all Models Specified in the Preregistration

	M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11
Evaluation ON Shared Group Membership		0.14*** (0.01)		0.14*** (0.01)							
Evaluation ON Group Status			0.03** (0.01)	0.02 (0.01)							
Evaluation ON RWA						0.2 (0.19)		0.31 (0.27)	0.29 (0.27)	0.23 (0.22)	0.24 (0.23)
Evaluation ON SDO							-0.03 (0.08)	-0.21 (0.16)	-0.19 (0.16)	-0.16 (0.15)	-0.17 (0.15)
Ingroup Bias (RS) ON RWA						-0.03 (0.03)		-0.04 (0.03)	-0.01 (0.03)		-0.03 (0.03)
Status Bias (RS) ON RWA										0.07* (0.03)	0.08* (0.03)
Ingroup Bias (RS) ON SDO									-0.02 (0.03)		-0.02 (0.03)
Status Bias (RS) ON SDO							0.06** (0.02)	0.07** (0.02)		0.02 (0.04)	0.01 (0.04)
LL	-5695	-5633	-5692	-5632	-5632	-7912	-8527	-10784	-10788	-10782	-10780
Parameters	3	4	4	5	7	45	48	87	87	86	87
AIC	11396	11274	11392	11274	11279	15914	17150	21742	21750	21736	21735

Note. Insert General Note here (e.g., Standard errors are in parentheses). † $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 4C-2

Study 2: Summaries of all Models Specified in the Preregistration

	M01	M02	M03	M04	M05	M06	M07	M08	M09	M10	M11
Evaluation ON Shared Group Membership		0.19*** (< 0.01)		0.19*** (< 0.01)							
Evaluation ON Group Status			0.05*** (< 0.01)	0.02*** (< 0.01)							
Evaluation ON SDO							-0.15*** (0.01)	-0.12*** (0.02)	-0.12*** (0.02)	-0.12*** (0.02)	-0.12*** (0.02)
Evaluation ON RWA						-0.09*** (0.01)		-0.05*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)	-0.05*** (0.01)
Ingroup Bias (RS) ON RWA						-0.01*** (< 0.01)		-0.01*** (< 0.01)	< 0.01 (< 0.01)		< 0.01 (< 0.01)
Ingroup Bias (RS) ON SDO									-0.03*** (< 0.01)		-0.04*** (< 0.01)
Status Bias (RS) ON RWA										< 0.01 (< 0.01)	< 0.01 (< 0.01)
Status Bias (RS) ON SDO							0.04*** (< 0.01)	0.04*** (< 0.01)		0.04*** (< 0.01)	0.04*** (< 0.01)
LL	-155470	-152836	-155316	-152808	-152811	-232563	-189807	-266364	-269252	-269242	-266345
Parameters	3	4	4	5	7	44	20	58	57	58	60
AIC	310945	305681	310639	305626	305635	465213	379654	532844	538617	538599	532810

Note. Insert General Note here (e.g., Standard errors are in parentheses).

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendic 5A: Adjustments Made to the Preregistered Methods

The adjustments made to the preregistered methods were as follows. The sequence in which predictors were added has changed to make changes to estimates better visable. The models include the main effect of contact to obtain unbiased estimates. In Study 3, income and education information from SCP Wave 1 instead of Wave 3 was to categorize participants into groups in order to use information from the same wave where other group memberships were assessed.

Appendic 5B: Correlational Tables

Table 5B- 1

Study 1: Means, Standard Deviations, and Correlations of the Dependent and Independent Variables

Variable	*n*	*M*	*SD*	1	2	3	4
1. Group evaluation	8,051	5.85	2.23	–			
2. Shared group membership	8,051	0.30	0.46	.28***	–		
3. Group status	8,051	0.50	0.18	.27***	.17***	–	
4. Contact	8,051	2.60	1.48	.40***	.61***	.16***	–

Note. Insert General Note here (e.g., Standard errors are in parentheses).

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5B-2

Study 2: Means, Standard Deviations, and Correlations of the Dependent and Independent Variables

Variable	*n*	*M*	*SD*	1	2	3	4	5
1. Group evaluation W3	102,754	5.58	2.45	–				
2. Group evaluation W1	102,754	5.49	2.55	.67***	–			
3. Contact W1	102,754	2.80	1.46	.39***	.46***	–		
4. Shared group membership	102,754	0.33	0.47	.27***	.31***	.58***	–	
5. Group status	102,754	0.52	0.17	.04***	.07***	.14***	.15***	–

Note. Insert General Note here (e.g., Standard errors are in parentheses).

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5B-3

Study3: Means, Standard Deviations, and Correlations of the Dependent and Independent Variables

Variable	*n*	*M*	*SD*	1	2	3	4	5	6	7
1. Vignette evaluation	28,314	6.05	1.87	–						
2. Warmth	28,314	5.72	2.36	.88***	–					
3. Competence	28,314	5.19	2.62	.84***	.72***	–				
4. Conflict (R)	28,314	7.23	2.22	.61***	.30***	.18***	–			
5. N shared group memberships	28,314	0.94	0.86	.04***	.05***	.03***	.02**	–		
6. Vignette status	28,314	0.51	0.11	.02**	.02***	.02***	-.00	.18***	–	
7. Contact	28,314	2.46	0.80	.12***	.13***	.10***	.04***	.38***	.16***	–

Note. Insert General Note here (e.g., Standard errors are in parentheses).

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendic 5C: Robustness Analyses

Study 1

First, I tested whether the findings were robust against the exclusion of evaluations of people on the political right and people sympathizing with the AfD, as these groups were evaluated most negatively by far and might disproportionately influence the estimates. Secondly, I tested whether the findings were robust when the contact measure was logarithmized. Contact may not be related to evaluation in a linear way, as it was measured as the fraction of group members among all acquaintances: it might make more of a difference when some acquaintances belong to a certain group compared to none, then when most aquintances belong to a certain group compared to many. The logarithmized contact measure accounts for this as it increases more strongly with each point on the lower end of the contact scale compared to the higher end. Third, I tested if the findings were robust when the response option 'don't know' on the contact measure was not coded as missing but replaced with 2 (few acquaintances). This could make a difference because the rates of missingness were high (up to 20%) for some target groups, particularly for political target groups. They were set to 2 (few acquaintances) because, when people don't know about their acquaintances' group memberships, it seems unlikely that either all or none of them belong to a particular group. Additionally, this value was chosen because it represented the median. Fourth, I tested whether the results were robust when using the sampling weights provided in the ESS 8, accounting for differential sampling and response probabilities in the ESS 8, but not for differential attrition in the SCP pilot study as such weights are not available.

Table 5C-1

Model Summaries Robustness Analyses Study 1

Effect	M7	M7 Log contact	M7 Contact missings	M7 Exclude evaluations right/AfD	M7 ESS sample weights
			Fixed effects		
Intercept	0.04*	0.02	0.04*	0.02	0.05**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Shared Group Membership	0.06***	0.06***	0.07***	0.05***	0.06***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Group Status	0.22***	0.20***	0.22***	0.26***	0.21***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Contact	0.37***	0.37***	0.36***	0.27***	0.37***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Shared Group Membership x Contact	-0.08***	-0.03**	-0.08***	-0.03**	-0.07***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Group Status x Contact	0.05***	0.02*	0.06***	0.03†	0.05**
	(0.01)	(0.01)	(0.01)	(0.02)	(0.01)
			Random effects		
Variance components					
Level 1	0.70	0.69	0.71	0.68	0.61
Level 2	0.09	0.10	0.09	0.15	0.10
			Goodness of fit and model information		
N Participants	550	550	552	550	550
N Observations	8,051	8,051	8,582	7,146	8,051
Deviance	20,578	20,441	22,034	18,204	21,528
AIC	20,636	20,500	22,093	18,262	21,586
Log-Likelihood	-10,310	-10,242	-11,038	-9,123	-10,785

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Study 2

I tested whether the findings were robust against the four alternative methodological specifications tested in Study 1 (excluding evaluations of people on the political right and sympathizing with the AfD, logarithmizing the contact measure, replacing 'don't know' responses with the median in the contact variable, and using sampling weights, in this case from the first wave of the SCP). Additionally, I tested if the findings were robust against trimming outliers of reported household income. Household income was assessed in euros (€) per month in this study, but survey responses across waves suggest that it was occasionally misinterpreted as euros per year. The measurement of group status could be disproportionally influenced by outliers reporting yearly incomes, particularly for groups with a small number of members among the participants. It was thus tested whether the results were robust against trimming the income variable at € 15,000 per month.

Table 5C-2

Model Summaries Robustness Analyses Study 2

Effect	M8	M8 Log contact	M8 Contact missings	M8 Exclude evaluations right/AfD	M8 Sample weights	M8 Trimmed household income
			Fixed effects			
Intercept	0.03*** (0.01)	0.02** (0.01)	0.02*** (0.01)	0.02** (0.01)	0.02*** (0.01)	0.03*** (0.01)
Evaluation W1	0.63*** (0.003)	0.63*** (0.003)	0.63*** (0.002)	0.50*** (0.003)	0.61*** (0.003)	0.63*** (0.003)
Shared Group Membership	0.04*** (0.003)	0.04*** (0.003)	0.04*** (0.002)	0.04*** (0.003)	0.04*** (0.003)	0.04*** (0.003)
Group Status	-0.01*** (0.002)	-0.01*** (0.002)	-0.01*** (0.002)	-0.02*** (0.003)	-0.01*** (0.002)	-0.01*** (0.002)
Contact W1	0.11*** (0.003)	0.10*** (0.003)	0.10*** (0.003)	0.12*** (0.003)	0.10*** (0.003)	0.11*** (0.003)
Shared Group Membership x Contact W1	-0.05*** (0.002)	-0.03*** (0.003)	-0.05*** (0.002)	-0.04*** (0.003)	-0.04*** (0.002)	-0.05*** (0.002)
Group Status x Contact W1	0.03*** (0.003)	0.02*** (0.002)	0.03*** (0.003)	0.05*** (0.003)	0.02*** (0.003)	0.03*** (0.003)
			Random effects			
Variance components						
Level 1	0.39	0.39	0.39	0.40	0.39	0.39
Level 2	0.16	0.16	0.15	0.25	0.14	0.16
			Goodness of fit and model information			
N Participants	6,993	6,993	7,012	6,982	6,993	6,993
N Observations	101,527	101,527	109,281	90,135	101,527	101,527
Deviance	204,970	204,939	221,876	189,478	248,944	204,970
AIC	205,058	205,027	221,965	189,565	249,032	205,058
Log-Likelihood	-102,520	-102,505	-110,974	-94,774	-124,507	-102,520

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Study 1

I tested whether the findings were robust against the five alternative methodological specifications investigated in Study 2: excluding political right and AfD group memberships from the models, logarithmizing the contact measure, replacing 'don't know' responses on the contact variable with the median, applying sample weights from the SCP Wave 1, and trimming outliers of reported household income. Additionally, I tested whether results differed by the measure of group evaluation, since the scale demonstrated questionable reliability (α = .68) with two of the three items correlating only weakly (cooperation and conflict, $r = .29$, $p < .001$).

Table 5C-3

Model Summaries Robustness Analyses Study 3

Effect	M7	M7 Log Contact	M7 Contact Missings	M7 No political right	M7 Weights	M7 Trim-med income
			Fixed effects			
Intercept	0.31*** (0.02)	0.04 (0.03)	0.31*** (0.02)	0.31*** (0.02)	0.33*** (0.02)	0.31*** (0.02)
Shared Group Memberships	0.002 (0.005)	-0.001 (0.01)	0.001 (0.005)	0.04*** (0.005)	-0.005 (0.005)	0.002 (0.005)
Vignette Status	0.001 (0.004)	-0.04** (0.01)	0.001 (0.004)	0.01* (0.005)	0.001 (0.004)	0.001 (0.004)
Contact	0.10*** (0.005)	0.32*** (0.02)	0.10*** (0.005)	0.04*** (0.005)	0.11*** (0.005)	0.10*** (0.005)
Shared Group Memberships x Contact	-0.01 (0.005)	0.004 (0.01)	-0.01 (0.005)	-0.003 (0.005)	-0.01 (0.005)	-0.01 (0.005)
Vignette Status x Contact	0.02** (0.01)	0.05*** (0.01)	0.02** (0.01)	0.003 (0.01)	0.03*** (0.005)	0.02** (0.01)
			Random effects			
Variance components						
Level 1	0.53	0.53	0.53	0.54	0.50	0.53
Level 2	0.39	0.38	0.39	0.39	0.35	0.39
			Goodness of fit and model information			
N Participants	3,007	3,007	3,014	3,007	3,007	3,007
N Observations	28,314	28,314	28,413	28,308	28,314	28,314
Deviance	68,624	68,651	68,841	68,889	79,104	68,624
AIC	68,766	68,787	68,983	69,031	79,247	68,766
Log-Likelihood	-34,367	-34,377	-34,476	-34,500	-39,607	-34,367

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Table 5C-4

Model Summaries Warmth, Cooperation, and Conflict Evaluations, Study 3

Effect	M7 Warmth	M7 Competence	M7 Conflict
	Fixed effects		
Intercept	0.29*** (0.02)	0.31*** (0.02)	0.12*** (0.02)
Shared Group Memberships	0.01 (0.005)	0.004 (0.005)	-0.01 (0.005)
Vignette Status	0.001 (0.005)	0.01† (0.004)	-0.01* (0.004)
Contact	0.09*** (0.005)	0.08*** (0.005)	0.05*** (0.005)
Shared Group Memberships x Contact	-0.01 (0.005)	-0.004 (0.005)	-0.003 (0.005)
Vignette Status x Contact	0.02** (0.01)	0.01* (0.005)	0.01* (0.005)
	Random effects		
Variance components			
Level 1	0.55	0.46	0.46
Level 2	0.38	0.49	0.52
	Goodness of fit and model information		
N Participants	3,007	3,007	3,007
N Observations	28,314	28,314	28,314
Deviance	69,240	65,326	65,608
AIC	69,382	65,470	65,752
Log-Likelihood	-34,675	-32,719	-32,860

Note. Standard errors are in parentheses. AIC = Akaike information criterion.

† $p \leq .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix 5D: Group Evaluation SCP W1 – SCP W3

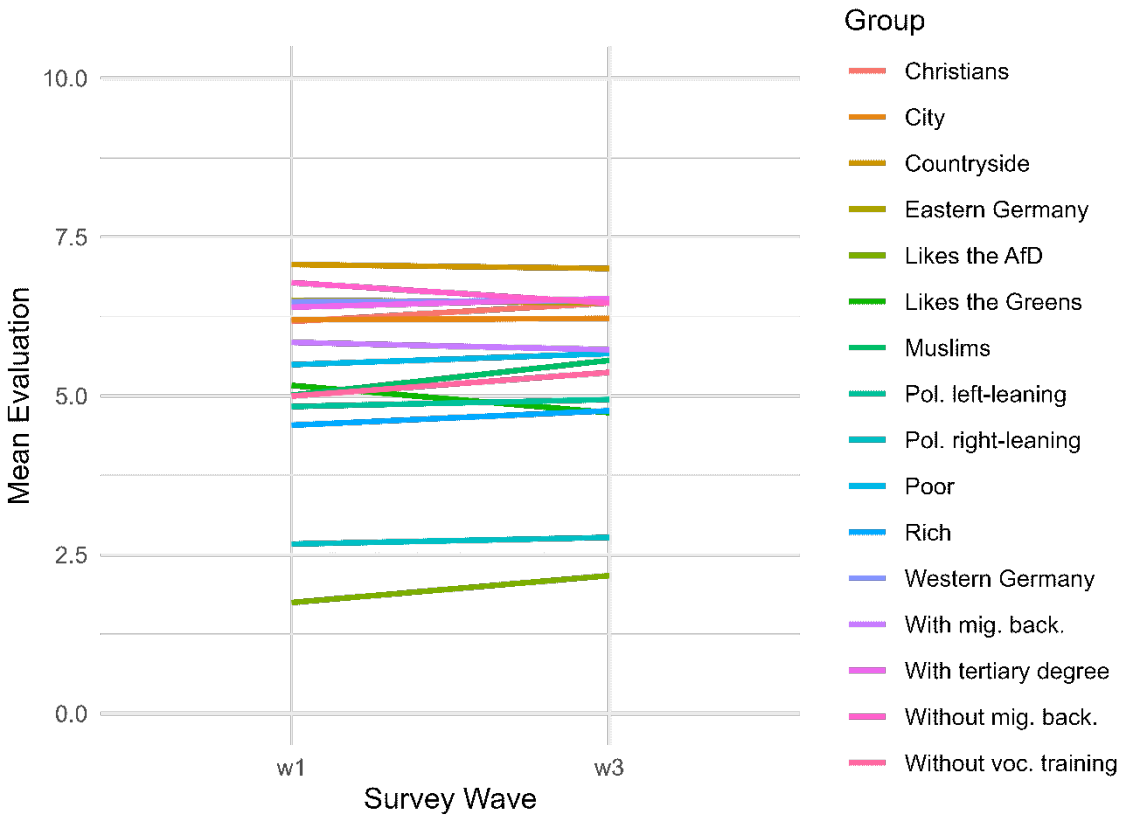
Table 5D-1

Group Evaluations across SCP Wave 1 and SCP Wave 3

	Evaluation W1 *M* (*SD*)	Evaluation W3 *M* (*SD*)
City	6.2 (2.03)	6.22 (1.87)
Countryside	7.07 (1.88)	7.01 (1.71)
Western Germany	6.50 (2.23)	6.52 (2.06)
Eastern Germany	6.51 (1.89)	6.48 (1.77)
Without mig. back.	6.78 (1.80)	6.48 (1.61)
With mig. back.	5.85 (1.92)	5.74 (2.03)
Muslims	4.97 (2.36)	5.52 (2.24)
Christians	6.24 (2.00)	6.53 (1.91)
With tertiary degree	6.43 (1.77)	6.57 (1.69)
Without voc. training	4.97 (2.12)	5.36 (2.06)
Poor	5.48 (1.96)	5.67 (1.95)
Rich	4.51 (2.16)	4.76 (2.18)
Likes the Greens	5.21 (2.81)	4.78 (2.91)
Likes the AfD	1.67 (2.41)	2.09 (2.63)
Pol. left-leaning	4.94 (2.67)	5.02 (2.55)
Pol. right-leaning	2.54 (2.53)	2.65 (2.46)

Figure 5D-1

Group Evaluations across SCP Wave 1 and SCP Wave 3



Declaration

I hereby certify that I have completed this dissertation without any unauthorized aid/s, have only used referenced sources and aids, have identified all ideas that are not my own, as well as excerpts and citations as such, I allow the dissertation to be checked with qualified software as part of the investigation into allegations of plagiarism.

Bremen, January 30, 2025 Anne Speer