Personality Psychology

First Impressions of Faces of Refugees Are More Strongly Influenced by Target Cues and Perceiver Attitudes Than by Sheer Group Affiliation

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The importance of first impressions for various intrapersonal, social and societal outcomes is well established. First impressions towards refugees as individual members of one of the most heatedly discussed social groups in Western societies should play a key role in facilitating or impeding successful social integration. However, this issue is currently underexplored. To help understand first impressions towards refugee individuals, we conducted two studies, in which German perceivers (total $N = 938$) evaluated 60 (Study 1) or 48 (Study 2) male target photos of Western individuals (presented as Germans) and Middle Eastern individuals (presented as refugees). In Study 2, we included information about targets' religious affiliations (Christian, Muslim) and religiousness (weakly religious, devout). Targets' facial characteristics (physical attractiveness, smiling) were coded, and perceiver attitudes (right-wing authoritarianism, social dominance orientation, right-wing political ideology) were assessed. Results showed (a) no overall devaluation of refugees or Muslims, (b) strong effects of target attractiveness and smiling on evaluations across individuals of different group affiliations, (c) strong effects of perceiver attitudes towards refugees and Muslims, and (d) no interactive effects of perceiver attitudes and target cues on evaluations. It is important to note that these results should not be interpreted as any doubt about the profound experiences of discrimination and prejudices faced by minorities such as refugees. Instead, they underline the utility of an individual differences approach to better understand the circumstances under which devaluations of minoritized individuals suchs as refugees are amplified or reduced.

First impressions from faces have been found to be highly consequential across different contexts (see Todorov et al., 2015 for an overview). On base of ascribed characteristics such as trustworthiness and overall evaluations, a variety of important life aspects such as mate selection, juridical judgments, financial investments as well as job and housing opportunities can be determined by facial first impressions (e.g., Harris & Garris, 2008; Tracy et al., 2020). While the downstream consequences of first impressions affect everyone, for refugees, the stakes of first impressions are particularly high. Even unlike members of other migrant groups, refugees typically have to go through thorough asylum application processes. Usually, refugees have to provide asylum testimonies on-site, which include face-to-face meetings with officials or representatives from the receiving country. Furthermore, the integration process for refugees involves finding new social connections and going through housing and job applications (see Esses et al., 2001; Hynie, 2018), which also largely rely on first impressions.

These impressions can work bottom-up from the facial characteristics to an evaluation outcome, but can also be top-down driven (e.g., Bach & Schenke, 2017). Accordingly, (negative) images about refugees in public debates (see Dinas et al., 2019; Esses et al., 2001; Van Prooijen et al., 2018) can affect first impressions and therefore the success of integrational challenges.

Previous research on how refugees as a group are perceived in general provided important insights regarding devaluation effects and discrimination tendencies (e.g., Canetti et al., 2016; Cowling et al., 2019; Kotzur et al., 2017, 2019; Murray & Marx, 2013; Schweitzer et al., 2005). However, less is known with respect to first impressions of individual refugees, that is, how individuals stemming from the group of refugees are perceived in zero acquaintance situations (i.e., prior to any interaction). Person perception research dealing with evaluations of multiple individual perceivers of multiple individual targets indicates that such first impressions show substantial variability not only

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within the group of perceivers (different perceivers evaluate the same targets differently), but also within the group of targets (different targets are judged differently by the same perceivers; Back & Nestler, 2016; Biesanz, 2010; Hehman et al., 2017; Naumann et al., 2009; Willis & Todorov, 2006).

In the present paper, we adopt an individual differences approach to explore key predictors of first impressions towards refugees, thereby considering between-person differences on both targets and perceiver sides. We study differences between targets in observable facial features (e.g., attractiveness and smiling), and group-related individual differences (e.g., refugee status, religion and religiousness) between targets. Regarding between-perceivers differences, we investigate individual differences in attitudes. As the key outcome variable, we focus on the most basic dimension of first impressions, namely, a more or less positive versus negative perception, that is, evaluation (Osgood et al., 1978; Peabody, 1970; Todorov et al., 2008).

The Influence of Target Group Affiliations

The field of person perception research has mainly focused on individual cue characteristics, but also provided findings connected to group affiliations. Such studies focused on the effects of being of a particular gender (e.g., Chiao et al., 2008; Hess et al., 2000; Walker & Wänke, 2017), age (e.g., Kaufmann et al., 2017; Montepare & Zebrowitz, 1998; Zebrowitz & Montepare, 2008), ethnicity (e.g., Lazerus et al., 2016) or religion (e.g., Mahmud & Swami, 2009) on evaluation outcomes. This research indicates that first impressions can rely on stereotypes and can, in the case of evaluative judgments, result in prejudiced first impressions (i.e., impressions that are based on a negative evaluation of the group the evaluated individual belongs to).

For the group of refugees, we know from research on groups and prototypical targets that refugee status as well as religious affiliation and religious strength are important social categories for evaluation outcomes (e.g., Czymara & Schmidt-Catran, 2017; Kotzur et al., 2017, 2019; Murray & Marx, 2013). Thus, we focus on those three social categories (i.e., refugee status, religious affiliation and strength) to represent fundamental (ascribed) group affilations of refugees. While the above studies showed refugees as a group to be perceived more negatively, they have rarely addressed the variability across evaluations of individuals within a refugee or religious group. Thus, it rests on the (untested) assumption that "all members of an outgroup will be evaluated and perceived in similar ways by ingroup members" (Hartley & Pedersen, 2015, p. 142-143). First findings with a more individual scope on refugee targets show that refugees labeled as Muslims (vs. Christians) are less likely accepted as asylum-seekers (see Bansak et al., 2016; Czymara & Schmidt-Catran, 2017; Hager & Veit, 2019). These vignette studies focused on group affiliations

like religion, and did not primarily investigate how individual characteristics determine the perception of refugees. To fill this apparent gap, the present paper aimed to help understanding the influence of being affiliated to minoritized[1] groups (e.g., refugee status and religious affiliation) on evaluation outcomes for individual refugees.

The Influence of Target Cue Differences

Research on person perception has focused extensively on explaining differences in how actual individual targets are perceived (Back & Nestler, 2016; Funder, 1999; Kenny, 1994, for overviews). This research has shown that (a) targets from the same group vary with respect to a large number of observable appearances and behaviors and that (b) these so-called *cues* have a strong influence on social perception (e.g., Back et al., 2011; Hirschmüller et al., 2013; Naumann et al., 2009; Willis & Todorov, 2006). By weighing cues when inferring targets' individual traits (*cue utilization*), perceivers derive judgments for multiple social dimensions. A wide range of static physical appearance and more dynamic nonverbal cue differences have been found to predict target evaluations (see Breil et al., 2021, for an overview). However, individual differences in the static cue of facial attractiveness and in the dynamic cue of facial expressiveness (i.e., smiling) have been found to be the most powerful predictors of evaluations of targets in a large variety of judgment contexts (e.g., Back et al., 2011; Feingold, 1992; Krumhuber et al., 2007; Lau, 1982; Naumann et al., 2009; Reis et al., 1990; Todorov et al., 2015). Those who look attractive and those who smile are evaluated more positively, whereas those who are less attractive and exhibit more grumpy expressions are typically devalued. On the one hand, perceivers might show a reduced utilization of cues for refugees because they tend to process minoritized targets more superficially and rather on the basis of their categorization as certain group members (Michel et al., 2006; Tanaka et al., 2004; Young et al., 2012, 2015). In this case, target differences in attractiveness and smiling should have a weaker effect on evaluations of minoritized targets as opposed to receiving society targets. On the other hand, one can argue that perceivers might show an augmented utilization of cues for refugees for instance, because they have a particularly strong sensitivity to potential threats posed by minoritized group members (Brandt et al., 2014; Caricati et al., 2017; Cohrs & Asbrock, 2009; Duckitt, 2006; Duckitt & Fisher, 2003; Onraet et al., 2013). In this case, differences between targets in attractiveness and smiling should have stronger effects on evaluations of refugee as opposed to receiving society targets.

The impact of group affiliations and of individual cue characteristics have not yet been fully compared for the evaluation of members of minoritized groups like refugees. Thus, it is unclear whether there are interactive effects of group affiliation and individual facial characteristics in pre-

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[1] In the present paper, we chose to use the terms *majority group* and *minoritized group* to highlight the action of ascribing "being less" to groups or group members rather than it being an inherent trait.

dicting evaluations. For instance, the present research was designed to provide insights to the question of whether individual target characteristics (e.g., smiling) affect evaluative judgments equally across different target groups (e.g., similar strong effects of the degree of smiling for refugees vs. non-refugees).

The Influence of Perceiver Attitudes

On the perceivers' side, person perception research has often focused on determinants of more or less accurate judgments (see Back & Nestler, 2016 for an overview), but less on predictors of more evaluative first impressions (such as liking or disliking a target). Research on so-called "perceiver-effects" indicates that there are stable individual differences in judging others as more or less positive and that these differences are related to a more or less prosocial versus antiosocial personality (see Back et al., 2011; Rau et al., 2020, 2021). In the context of evaluations of refugee individuals, and thus, evaluations of members of minoritized groups, related research on intergroup perception and prejudices could be particularly beneficial to understand such perceiver differences in evaluation. Prejudices can be defined as "an individual-level attitude (whether subjectively positive or negative) toward groups and their members that creates or maintains hierarchical status relations between groups" (Dovidio et al., 2013, p. 7; see also Dovidio et al., 2019) and are accordingly highly evaluative and relevant to intergroup settings.

Research on prejudices has identified three attitudinal perceiver characteristics as the most consistent predictors of evaluations: Perceiver's social dominance orientation (SDO), right-wing authoritarianism (RWA), and political ideology. SDO, the extent to which one prefers hierarchical, versus equal, social relations and in particular the domination of outgroups by the ingroup (Pratto et al., 1994), and RWA, which values being submissive to authorities, complying with conservative norms, and promoting sanctions of norm violations or established social order violations (Altemeyer, 1981, 1998), were particularly associated with policies opposing immigrants (e.g., Craig & Richeson, 2014) and with prejudices toward certain religious groups like Muslims (Dunwoody & McFarland, 2018). Furthermore, political ideology appears to affect interethnic and interreligious perceptions, whereby conservatives and right-wing-leaning individuals showed less positive attitudes toward Arabs (Echebarria-Echabe & Fernández-Guede, 2006) and Muslims (Bleich, 2011; Ogan et al., 2014).

The extent to which RWA, SDO, and political ideology also affect first impressions towards individual members of minoritized groups, and towards individual refugees in particular, is not yet fully understood. Studies on related issues reported associations between perceivers' political ideology and threat perceptions on the basis of ambigious faces (Vigil, 2010) and that RWA and SDO related to racial bias in

face detection (Bret et al., 2017). It, thus, remains unclear if the effects of RWA, SDO, and political ideology on the devaluation of minoritized groups (i.e., devaluating refugees or Muslims as a whole), can also be found with respect to the perception of minoritized individuals (e.g., individual refugees). Furthermore, it is unclear whether there are potential interactions of perceivers' attitudes (e.g., RWA) and target cue characteristics (e.g., smiling). Depending on their attitudes, perceivers might show more or less utilization of cues when evaluating minoritized individuals as opposed to majority targets. In other words, perceiver attitudes might moderate the interactive effects of group affiliation (e.g., refugee status) and cue value (e.g., smiling) on target evaluation.

The Present Research

With the present research, we aimed to contribute to a better understanding of the perceiver and target characteristics that predict more or less positive first impressions[2] towards refugees. By presenting face photos of target individuals, we provided a natural source of information for social evaluations. On the targets' side, we investigated the roles of different target group affiliations connected to refugee perceptions, namely refugee status (Middle Eastern refugee vs. nonmigrant German), religion (Christian vs. Muslim), and religiousness (weakly religious vs. devout). In addition, we investigated effects of targets' individual cue characteristics (smiling and attractiveness) and compared them to the effects of group affiliations. On the perceivers' side, we examined the roles of SDO, RWA, and right-wing political ideology for evaluation outcomes of minoritized individuals (vs. majority individuals).

The design combines photo-based perceptions of targets, self-reported perceiver attitudes, and independently coded facial cues. This multimethodological approach allowed us to explore four key questions about the determinants of refugee evaluations at first sight.

First, we planned to analyze the general evaluation outcomes of minoritized group individuals (i.e., refugees, Muslims and devout individuals as well as their combinations) and majority group individuals. These findings offer links to previous research on group and prototypical target levels (e.g., Bansak et al., 2016; Kotzur et al., 2019). To address this, we tested for the effects of targets' status as a refugee versus a member of the host society (Studies 1 and 2) and targets' religion and religiousness (Study 2).

Second, we tested how strongly targets' individual cue values contribute to evaluations of minoritized targets and majority targets. That is, we addressed the questions of how much smiling and attractiveness influence evaluations, and whether this influence is similarly strong for both groups of targets. We thereby tested for cue utilization effects of targets' attractiveness and smiling and quantified the relative contributions of individual cue characteristics in com-

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2 In the present study, perceivers got prior information about the social groups they were going to see in the study, however they did not have any individual information of targets prior to the perception.

parison with targets' mere group affiliations to predict perception outcomes. Furthermore, we tested for interactions of attractiveness and smiling with refugee status (Studies 1 and 2) as well as with religion and religiousness (Study 2).

Third, we analyzed relations between perceiver characteristics and the perception of minoritized group members. Do RWA, SDO, and right-wing political ideology predict more negative evaluations of minoritized individuals as they do for group contexts? We, thus, tested for effects of interactions of RWA, SDO, and right-wing political ideology with refugee status (Studies 1 and 2) as well as religion and religiousness (Study 2).

Fourth, we explored whether perceiver characteristics moderate the cue utilization process for minoritized group versus majority group individuals? Are the extents to which smiling and attractiveness predict evaluations of majority versus minoritized targets affected by perceivers' levels of RWA, SDO, or right-wing political ideology? We tested for interactive effects of perceiver attitudes (in Studies 1 and 2), targets' refugee status (in Studies 1 and 2), religion and religiousness (in Study 2), and target cue characteristics (facial attractiveness, facial expressiveness in Studies 1 and 2).[3]

Study 1

Study 1 was a first attempt to investigate perceiver and target determinants of refugee evaluations in a zero-acquaintance person perception setting. We focused on an intergroup context with targets affiliated to the group of Middle Eastern refugees versus nonmigrant Germans.

Method

Design and participants

All perceivers judged the same set of individual target photos. Thus, the study was a cross-random effect design, in which each perceiver judged all targets, and each target was judged by all perceivers (also called a half-block design, see Kenny, 1994; Kenny et al., 2006). Within perceivers, we varied targets' refugee status by presenting targets from the majority group and from a minoritized group (nonmigrant Germans vs. Middle Eastern refugees). The instruc-

tion included a definition of the term refugee as following: "Refugees are individuals, who have been forced to leave their home for an unforeseeable amount of time. The individuals in this study originate in the Middle East and fled to Germany".[4]

Participants were recruited through social networks, e-mails, and local flyers and were informed about the chance of winning a voucher worth 20€. A total of 158 participants finished the online study and consented to the use of their data. We excluded participants who did not indicate German nationality (6 cases) and those with questionable data due to extreme deviations in the time needed to complete the study (in 7 cases the duration was less than half or more than 3 times the defined margins from our pretests) or due to response-bias abnormalities (in 3 cases the standard deviation for a perceiver within one dimension or between all dimensions across all 60 targets was below 0.1). A total of 142 perceivers were used in the analyses. Of these, 100 were women, and the mean age was 30.59 (SD = 11.15). As the highest educational degree, 65 reported that they had a university degree, 71 indicated they had finished upper secondary school or vocational training, and 6 indicated they had finished intermediate and lower secondary school.[5] As for their current profession, 82 indicated to be students (in school or university), 54 reported having a job, and 6 did not fit into these categories.

Procedure

The study consisted of three blocks and was conducted in German language. After a first section containing self-reports, participants were told that the study's objective was to examine first impressions on the basis of faces. Before the photos were presented, participants were told that they would subsequently view photos of individuals affiliated to two different groups (Middle Eastern refugees vs. nonmigrant Germans). The instructions explained that the target individuals would not be labeled as members of one of the groups. We deliberately chose not to label individual target photos with the target's refugee status (Middle Eastern refugee vs. nonmigrant German) to offer a more natural situation for evaluating others on individual characteristics. While labeling would provide more certainty of accurate al-

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3 Both studies are part of the broader project "Integration at First Sight" situated within a research initiative on "Psychological Aspects of Refugee Integration" and the research cluster "Cluster of Excellence Religion and Politics" at the University of Münster, Germany. In the present paper, we report analyses based on a subset of the available data that are relevant for investigating key determinants of evaluations toward refugees. Supplementary material accompanying this paper including codebooks, the data, the statistical code we applied, and results of the supplementary analyses can be found at https://osf.io/hxzcj/. We also note that data from both studies have already been analyzed in multiple Bachelor and Master theses over the course of which a number of hypotheses and research questions that only partially overlap with those investigated here have been registered for unbiased theses completion. Thus, whereas none of the prior analyses dealt with exactly the same research questions, all hypotheses and research questions were based on careful analyses of the literature, and we replicated the analyses across two samples, the present work should still be regarded as mainly exploratory.

4 The original design included an additional group of participants (i.e., a between-perceiver variation) for which Middle Eastern targets were introduced as Germans with a migration background. Because the focus of the present research was solely on perceptions of refugees, and so that we would be able to directly compare Studies 1 and 2 in an integrated framework, we did not include this additional group of perceivers.

5 The educational system in Germany mainly offers three different secondary school tracks: *Hauptschule* (lower secondary track), *Realschule* (intermediate secondary track), and *Gymnasium* (upper secondary school, qualifying for university studies). In addition, the *Berufsausbildung* (vocational training) can qualify graduates for numerous jobs and offers an alternative to the university track.

location to the social category, everyday inter-group encounters would not provide such a labeling. Therefore, to allow for stronger generalizability to such natural perception contexts, we decided to not label each individual, but to offer general information in advance to which social categories the subsequently presented individuals might belong. An additional study and analyses provided evidence that evaluations were not driven by ambiguity of the targets' group affiliation.[6]

Participants were then presented with all 60 faces in a random order, one face at a time, and were instructed to evaluate the depicted person on different measures. In the third phase of the study, we asked the participants for additional self-reports on their personality and attitudes. Finally, participants were debriefed, thanked, and instructed they could enter their e-mail addresses for the voucher raffle. On average, the time to completion was 53 min (SD = 33.51). A more complete overview of all measures can be found in a detailed codebook (see folder "Codebooks" at https://osf.io/hxzcj/).

Photo material

Face stimuli were taken from the American Color Face Recognition Technology database (colorFERET; Phillips et al., 1998, 2000) and the Iranian Face Database (Bastanfard et al., 2007; Dehshibi, 2018; IFDB; Dehshibi & Bastanfard, 2010). Both databases offered photos of faces taken in a standardized setting, while exhibiting natural variations in facial expressions and other features. As the majority of refugees who have arrived in Germany in recent years have been from the Middle East, below 40 years, and male (Brücker et al., 2016), we selected a database and photos that met these criteria. Overall, we selected 60 male target photos by matching 30 target photos from each database on prominent features such as facial expression, hair, age, or perceived attractiveness (see Figure 1 for examples). While the focus on male photos only naturally limits the generalizability of our findings (to males only), restricting the sources of variation enabled us to realize a well-powered design that allows for robust insights.

Following photo selection, three trained raters (see below for details) created pairs from the two databases by matching the photos on prominent features. With descriptive analyses, we chose 30 pairs that showed a sufficient balance on means and standard deviations for selected cues (e.g., friendliness, anxiety, and aggression cues) between

Figure 1. **Examples of matched stimuli pairs from the databases colorFERET (upper row), presented as nonmigrant Germans, and IFDB (lower row), presented as Middle Eastern refugees.**

the two groups. By doing so, we aimed to prevent sheer differences in facial features (e.g., attractiveness) between the groups from driving perception differences. We used the colorFERET photos as majority group target stimuli (nonmigrant Germans) and the IFDB photos as minoritized group target stimuli (Middle Eastern refugees). We carefully ensured that all photos were comparable regarding illumination, that is, brightness, and size. size, making the face clearly visible and eliminating information about the body and posture.

Power analysis

At present and to the best of our knowledge, the optimal sample size for cross-random effect designs can only be determined for the effect of a binary treatment variable (see Westfall et al., 2014). Using the formulas presented in Westfall et al. (2014) for the stimuli-within-condition design, we found that the power to obtain a significant condition effect with an effect size of delta = 0.30 is about 0.87 when examining $N = 100$ perceivers and $N = 60$ targets. On the basis of earlier research on the accuracy of personality judgments (Hirschmüller et al., 2013; Nestler et al., 2012), we used a standardized variance of the participant intercept of 0.20, a standardized variance of the stimuli intercept of 0.10, and an error variance of 0.60 for the calculation. Furthermore, the variance of the slope of the perceivers (effect of targets' refugee status on perceivers' judgments) was set to 0.05, the variance of the slope of the targets (the extent to which refugee targets are evaluated more favorably) was set to 0.00, and the variance of the participant-by-stimulus interaction (the unique effect of perceiver-target dyads) was set to 0.05.

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6 To rule out that categorization ambiguity impacted the effects, we collected data from 14 independent participants, of which 5 were female and the mean age was 26.14 (SD = 6.88), judging the targets' prototypicality. The participants were asked to categorize each of the used target stimuli to either being German or Middle Eastern origin. Accordingly, each participant categorized every of the 60 targets to one of both groups and additionally indicated their confidence with a certainty rating (1-6) for each judgment. Then, we calculated a hit ratio (indicating the correct categorization percentage). With the data, we conducted two sensitivity analyses with our original data of Studies 1 and 2. To check for the robustness of our findings, we included only those targets who were unambiguously assigned to one of the two groups. For the first supplemental analyses, only those targets with a hit ratio of at least 80% and a certainty rating of at least 4 were included and all analyses from the main paper were repeated. For the second, even stricter analyses, only those targets with a hit ratio of at least 90% and a certainty rating of at least 4.5 were included. Results showed no substantial differences in comparison with the results presented here. Accordingly, we concluded that a potential categorization ambiguity did not drive the presented effects below. See Supplement Full Results section "Sensitivity Analyses of Prototypical Targets 1/2" of the respective study (https://osf.io/hxzcj/).

Table 1. **Data structure illustration including perceiver characteristics (SDO, RWA and right-wing political ideology), target characteristics (refugee status, religion and religiousness) as well as evaluation for Study 1 (top) and Study 2 (bottom).**

					Study 1					
Perceiver	SDO	RWA	Political ideology	Target	Smiling	Attractiveness	Refugee status	/	/	Evaluation
1	6.1	3.8	6.3	1	3.2	4.4	1	/	/	3.5
1	6.1	3.8	6.3	2	2.8	2.3	2	/	/	2.5
...	...	...	...	...	...	...	...	/	/	...
1	6.1	3.8	6.3	60	4.1	3.8	2	/	/	4.1
2	3.2	2.6	3.5	1	3.2	4.4	1	/	/	3.7
2	3.2	2.6	3.5	2	2.8	2.3	2	/	/	1.3
...	...	...	...	...	...	...	...	/	/	...
2	3.2	2.6	3.5	60	4.1	3.8	2	/	/	3.9
...	...	...	...	...	...	...	...	/	/	...
142	5.2	4.2	7.5	1	3.2	4.4	1	/	/	3.4
142	5.2	4.2	7.5	2	2.8	2.3	2	/	/	2.1
...	...	...	...	...	...	...	...	/	/	...
142	5.2	4.2	7.5	60	4.1	3.8	2	/	/	4.7

					Study 2					
Perceiver	SDO	RWA	Political ideology	Target	Smiling	Attractiveness	Refugee status	Religion	Religiousness	Evaluation
1	5.9	4.4	7.8	1	3.2	4.4	1	1	1	3.4
1	5.9	4.4	7.8	2	2.8	2.3	2	1	1	4.1
...	...	...	...	...	...	...	...	...	...	...
1	5.9	4.4	7.8	48	4.5	4.1	2	2	1	1.3
2	2.2	1.9	3.7	1	3.2	4.4	1	2	2	4.5
2	2.2	1.9	3.7	2	2.8	2.3	2	1	2	4.1
...	...	...	...	...	...	...	...	...	...	...
2	2.2	1.9	3.7	48	4.5	4.1	2	1	2	3.9
...	...	...	...	...	...	...	...	...	...	...
796	4.9	3.3	7.1	1	3.2	4.4	1	1	2	2.4
796	4.9	3.3	7.1	2	2.8	2.3	2	2	1	4.7
...	...	...	...	...	...	...	...	...	...	...
796	4.9	3.3	7.1	48	4.5	4.1	2	1	1	3.3

Table 2. **Number of Observations, Means, Standard Deviations, and Intercorrelations for Evaluation, Target Cues, and Perceiver Attitudes Presented Separately for Target Subsets**

	n	M	SD	2	3	4	5	6
All targets								
1 Evaluation	8,520	0.00	1.00	.33	.20	-.15	-.17	-.08
2 Smiling	8,520	2.04	1.03		.13	-	-	-
3 Attractiveness	8,520	2.18	0.78			-	-	-
4 SDO	142	2.39	1.01				.57	.45
5 RWA	142	2.42	0.73					.37
6 Political ideology (right)	142	4.66	2.26					
Refugee targets								
1 Evaluation	4,260	-0.01	1.00	.29	.09	-.25	-.23	-.16
2 Smiling	4,260	1.99	1.03		.07	-	-	-
3 Attractiveness	4,260	2.10	0.64			-	-	-
4 SDO	142	2.39	1.01				.57	.45
5 RWA	142	2.42	0.73					.37
6 Political ideology (right)	142	4.66	2.26					
German targets								
1 Evaluation	4,260	0.01	1.00	.37	.28	-.06	-.10	.00
2 Smiling	4,260	2.09	1.03		.17	-	-	-
3 Attractiveness	4,260	2.27	0.89			-	-	-
4 SDO	142	2.39	1.01				.57	.45
5 RWA	142	2.42	0.73					.37
6 Political ideology (right)	142	4.66	2.26					

Note. The facial cue (smiling and attractiveness), social dominance orientation (SDO), and right-wing authoritarianism (RWA) scales ranged from 1 to 5. Political ideology ranged from 1 (left-wing) to 10 (right-wing). Intercorrelations were calculated per subset.

Target cues: Attractiveness and smiling

To account for the individuality of the target stimuli, three trained coders rated the photo stimuli on facial expression and facial appearance cues. We then chose a set of 31 facial cues, defined the anchor points for each cue rating scale, and trained three independent coders on an independent set of photos to ensure a satisfactory level of interrater reliability. Here, we focused on smiling and attractiveness as two of the most fundamental cues for personal evaluations (e.g., Back et al., 2011; Feingold, 1992; Krumhuber et al., 2007; Lau, 1982; Naumann et al., 2009; Reis et al., 1990; Todorov et al., 2015). Both were rated on a Likert scale ranging from 1 (*not at all*) to 5 (*very much*; see Table 2 for cue intercorrelations). Thus, the cue measures capture facial differences in a dimensional way (smiling: very grumpy to very friendly expressions; attractiveness: very unattractive to very attractive physical appearance). For each cue, we averaged the ratings across all three coders and found satisfactory interrater agreements for smiling, ICC (2, k) = .84, and attractiveness, ICC (2, k) = .77 (see e.g., Hirschmüller et al., 2013; Naumann et al., 2009). The agreement on smiling did not substantially differ between Middle Eastern targets,

ICC (2, k) = .86, 95% CI [.74, .93], and Western targets, ICC (2, k) = .83, 95% CI [.69, .91], while the one for attractiveness for Middle Eastern targets, ICC (2, k) = .68, 95% CI [.41, .84], was descriptively lower than the one of Western targets, ICC (2, k) = .82, 95% CI [.67, .91].

Perceiver judgments: Evaluation

Participants were asked to judge the targets on different judgment dimensions. Accordingly, every perceiver provided an evaluation of every target on different dimensions. All items were answered on a 5-point scale ranging from 1 (*low*) to 5 (*very*). To analyze effects of a general evaluation (i.e., the degree of positive vs. negative perception), we calculated a global evaluation or positivity index across all available judgment dimensions (see Back et al., 2011; Osgood et al., 1978; Wood et al., 2010): assertive, egoistic, hostile, outgoing, trustworthy, likeable, and intelligent. To determine an evaluative factor for assessing differences between the evaluations of the targets (rather than a factor for assessing differences between perceivers' ratings of targets), we first reduced the cross-classified structure and averaged the values across perceivers for each judgment di-

mension. These data were then reduced to a single factor using a principal component analysis (eigenvalue: 4.43, explained variance: 63.2%). Factor scores were extracted to approximate a global evaluation of the targets. This positivity index was subsequently used in our analyses as a measure of evaluation.[7]

Perceiver attitudes: SDO, RWA, and right-wing political ideology

Perceivers' SDO scores were measured with an eight-item version (Sibley & Duckitt, 2009) of the original 16-item SDO scale (Pratto et al., 1994; using the German translation of Six et al., 2001). The SDO items (α = .86) were answered on a Likert scale ranging from 1 (*very negative*) to 7 (*very positive*). We used the Authoritarianism Short Scale (Kurzskala Autoritarismus, KSA-3; Beierlein et al., 2014; see also Altemeyer, 1981) with nine items (α = .83) measured on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Furthermore, we adapted one item from the Socio-Economic-Panel (SOEP; Wagner et al., 2007), asking respondents to indicate their preference for political parties in Germany. We then used the 2014 Chapel Hill Expert Survey (see Polk et al., 2017), which offers a solid database of 337 political scientist expert ratings, to code and weight the political parties' right versus left orientation. The expert scores on Germany's political parties' overall ideological stance ranging from 0 (*extreme left*) to 10 (*extreme right*) were used to create an overall measure of political ideology with higher scores reflecting a more right-wing-oriented ideology and lower scores reflecting a more left-wing-oriented ideology.[8]

Statistical approach

For an illustration of the data structure of both studies, see Table 1. All research questions were investigated using Bayesian cross-classified mixed models (CC-MMs) with varying crossed random effects for perceivers and targets (Hehman et al., 2017; Judd et al., 2012; Nestler & Back, 2017). All analyses were conducted in R (R Core Team, 2018) using tidyverse packages (Wickham & Grolemund, 2016) for the data preparation and the brms package (Bürkner, 2017), which is based on Stan (Carpenter et al., 2017; Stan Development Team, 2017), for model fitting. Our fully reproducible analyses can be found at https://osf.io/hxzcj/.

Random intercepts were allowed for the perceivers and the targets to model variability between the average judgment of the perceivers and the average judgment concern-

ing the targets. For the random perceiver slopes, we allowed variation for all perceiver characteristics (reflecting differences between targets in the extent to which perceiver characteristics such as SDO drive the judgments) and target characteristics (reflecting differences between perceivers in the extent to which target characteristics, e.g., group affiliation or facial cues, drive the judgments). For the Bayesian multilevel models, we used the default prior distributions from the brms package, which are noninformative or only weakly informative and thus had only a minimal influence on the results we obtained (Bürkner, 2017). We fit the models using 10 Markov chains each with 1,000 iterations of which the first 500 were used to warm up the sampler (Carpenter et al., 2017). This resulted in a total of 5,000 postwarmup samples used for inference. All models converged with Rhat estimates smaller than 1.05 (Gelman & Rubin, 1992; Vehtari et al., 2019). Bulk and Tail effective sample sizes exceeded 500 for most parameters and did not go below 200 in the worst case, which provided sufficient estimation accuracy for the purpose of our inferences (see Vehtari et al., 2019, for details).

Results

Preliminary results

Descriptive statistics (i.e., means, standard deviations, and intercorrelations) were calculated for the total sample, the Middle Eastern refugee targets (refugees), and the German targets (Germans). Both smiling and attractiveness were related to more positive evaluations (see Table 2). Whereas this was apparent in both target samples, the association between attractiveness and evaluation was descriptively weaker in the refugee target subset. Regarding perceiver attitudes, SDO, RWA, and right-wing political ideology were more strongly related to negative evaluations for the refugee than for the German targets subset.

Overall evaluation of minoritized group members

We first tested for potential devaluation effects of minoritized targets (i.e., Middle Eastern refugees). To this end, the evaluation of individual targets was predicted with an effect-coded variable that assigned nonmigrant German targets a value of -1 and Middle Eastern refugee targets a value of 1. Results showed that targets' refugee status was not associated with the evaluations, b = -0.00, 95% CI [-0.13, 0.12]. Finding no general evaluation difference between minoritized and majority targets, we examined whether there was substantial variance (a) between targets

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7 As an alternative approach, we computed another positivity index by simply averaging the judgment dimensions that were most clearly related to the positive versus negative evaluations: trustworthiness, likeability, and recoded hostility. The results were all in the same direction and were similar in size. See the Supplement Full Results section "Sensitivity Analysis of Positivity Version 2" of the respective study (https://osf.io/hxzcj/) for details.

8 Besides the global measure of political ideology, we used two additional measures to code more specific aspects of ideological orientation. We therefore coded one measure on economic-oriented ideology (from economically left to economically right) and one on value-oriented ideology (from left to right values). Both were used to predict evaluation outcomes and produced results that were very similar to those from the global ideology measures. See the Supplement Full Results section "Positivity Version 1" in "Hypothesis Block 3" of the respective study: https://osf.io/hxzcj/.

in how they were evaluated on average, (b) between perceivers in how they evaluated targets on average, and (c) between perceivers in the extent to which their evaluations of the Middle Eastern refugee targets differed from those of the nonmigrant Germans. Additionally, (d) we report the residual SD. The results showed (a) high variability between average target evaluations, $SD_{Target\ Intercepts}$ = 0.49, 95% CI [0.41, 0.60], (b) high variability between perceivers' average evaluations, $SD_{Perceiver\ Intercepts}$ = 0.41, 95% CI [0.36, 0.46], and (c) that perceivers varied in the extent to which they evaluated Middle Eastern refugee targets versus German targets, $SD_{slopes\ refugee\ status}$ = 0.16, 95% CI [0.14, 0.19]. For further details, we (d) report the residual SD: $SD_{residual}$ = 0.77, 95% CI [0.75, 0.78].

The role of targets' observable cues

We used the grand-mean-centered target cues (smiling and attractiveness) to predict the positivity of evaluations in two separate models. Results are illustrated in Figure 2. Both smiling, b = 0.33, 95% CI [0.24, 0.42], and attractiveness, b = 0.23, 95% CI [0.07, 0.39], were related to more positive evaluations. To better understand the relative importance of the targets' individual cues as opposed to the targets' group affiliation, in predicting evaluations, we compared the target variance ratios of a null model including no predictors, a model including the targets' group affiliation (refugee status) main effect, and a model including this main effect and the main effects of both cues. No substantial reduction in the between-target variance was found when we compared the target variance of the null model with the refugee status main-effect-only model, variance ratio (VR) = 1.04, 95% CI [0.59, 1.70]. However, comparing the main-effect-with-cues model with either the null model, VR = 0.44, 95% CI [0.24, 0.73], or the refugee status main-effect-only model, VR = 0.44, 95% CI [0.24, 0.72], indicated strong reductions in the between-target variance due to targets' individual cue characteristics. Thus, for the evaluation of individual targets, the cue characteristics were much more important than group affiliation (i.e., being a host society member vs. a refugee). We also tested whether cue effects were moderated by refugee status, but there was no evidence of an interaction for smiling, b = -0.04, 95% CI [-0.12, 0.05], or for attractiveness, b = -0.08, 95% CI [-0.24, 0.08]. This indicates that the selected facial cues were utilized similarly to form an evaluation regardless of targets' refugee status (for all model results, see Supplemental Results section A Study 1; https://osf.io/hxzcj/). The residual SDs were similar for both, the smiling model, $SD_{residual}$ = 0.76, 95% CI [0.74, 0.77], and the attractiveness model, $SD_{residual}$ = 0.76, 95% CI [0.75, 0.77].

The role of perceiver attitudes

Perceiver attitudes were first grand-mean centered and then used to predict perceiver differences in average evaluations (i.e., the perceiver intercepts) and perceiver differences in the effect of the targets' refugee status variable (i.e., the perceiver slope). Results are depicted in Figure 3. SDO, b = -0.14, 95% CI [-0.20, -0.08], RWA, b = -0.23, 95% CI [-0.32, -0.14], and right-wing political ideology, b = -0.04, 95% CI [-.07, -.01], were all associated with more negative
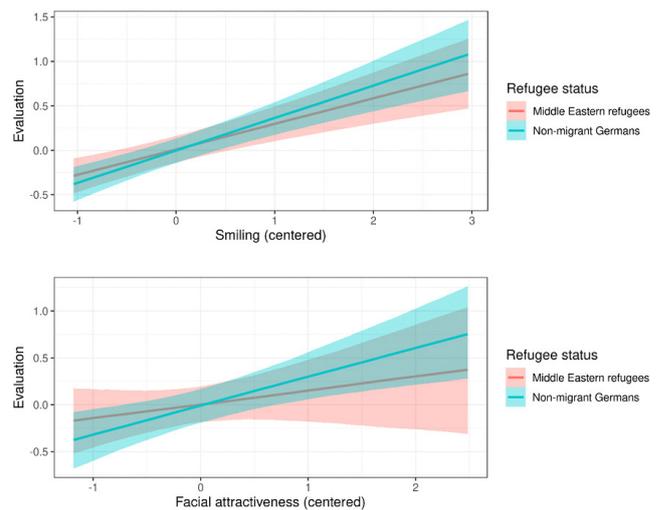
Figure 2. **Main and interaction effects when predicting positivity from targets' refugee status (red vs. green) and targets' cue characteristics smiling (top) and attractiveness (bottom) for Study 1. Shaded areas indicate the 95% credible intervals of the predictions.**

evaluations of targets in general. More importantly, perceiver attitudes moderated the effect of target refugee status: Higher SDO, b = -0.08, 95% CI [-0.11, -0.05], higher RWA, b = -0.09, 95% CI [-0.14, -0.05], and more right-wing political ideology, b = -0.03, 95% CI [-0.05, -0.02], were associated with a stronger devaluation of Middle Eastern refugees in comparison with nonmigrant Germans.

A subsequent simple slope analysis revealed that the patterns for perceiver attitude effects differed between target groups. In particular, higher levels of SDO were associated with more negative evaluation outcomes for Middle Eastern refugee targets, b = -0.22, 95% CI [-0.28, -0.16], whereas the association with evaluation outcomes for nonmigrant German targets was substantially smaller, b = -0.06, 95% CI [-0.11, 0.00]. While there were no differences in the positivity of the evaluation outcomes between the groups for low levels of SDO (one SD below the mean), b = 0.07, 95% CI [-0.05, 0.18], Middle Eastern refugee targets were evaluated slightly more negatively at higher levels of SDO (one SD above the mean), b = -0.11, 95% CI [-0.22, -0.01].

Regarding RWA, the effect of attitude on Middle Eastern refugee targets was stronger, b = -0.32, 95% CI [-0.41, -0.23], than for nonmigrant German targets, b = -0.14, 95% CI [-0.22, -0.06]. Perceivers with lower levels of RWA (one SD below the mean) tended to provide more positive evaluations of refugees, b = 0.05, 95% CI [-0.05, 0.16], whereas perceivers with higher levels of RWA (one SD above the mean) tended to provide more negative evaluations of refugees, b = -0.08, 95% CI [-0.20, 0.03]. Right-wing political ideology was associated with more negative evaluations of Middle Eastern refugee targets, b = -0.07, 95% CI [-0.10, -0.04], whereas it was not associated with evaluations of nonmigrant German targets, b = 0.00, 95% CI [-0.03, 0.02]. Left-wing-leaning perceivers (one SD below the mean) evaluated refugees more positively on a descriptive level, b = 0.06, 95% CI [-0.06, 0.18], whereas refugees were evaluated more

negatively on a descriptive level for right-wing-leaning perceivers (one *SD* above the mean), *b* = -0.09, 95% CI [-0.21, 0.01]. Thus, perceiver differences in SDO, RWA, and political ideology had consistent effects on the devaluation of Middle Eastern refugee targets (see Supplemental Results section B Study 1 for details, https://osf.io/hxzcj/). The residual SDs were very similar with, $SD_{residual}$ = 0.76, 95% CI [0.75, 0.77] for the SDO model and $SD_{residual}$ = 0.76, 95% CI [0.75, 0.78] for both RWA and political ideology models.

The interplay between target cues and perceiver differences

In a final step, we investigated whether one of the more complex interactions between attitudes (SDO, RWA, and political ideology), individual target cues (smiling and attractiveness), and targets' refugee status (Germans vs. Middle Eastern refugees) were relevant for the prediction of evaluations. However, we did not find evidence for any of these interactions (results for the six models, that is, three perceiver attitudes combined with two target cues each, are summarized in Supplemental Results section C Study 1; see https://osf.io/hxzcj/). These results indicate (a) that the effects of smiling and attractiveness on target evaluation did not vary with SDO, RWA, or political ideology and (b) that SDO, RWA, and political ideology were not related to a specific utilization of cues for Middle Eastern refugees in comparison with nonmigrant Germans.

Discussion

In Study 1, we investigated the role of target and perceiver differences for evaluations of Middle Eastern refugee individuals at zero acquaintance. In this zero-acquaintance person perception setting, we did not find evidence of a general devaluation of refugees: Averaging across all targets and perceivers, Middle Eastern refugees and nonmigrant Germans were evaluated at comparable levels of favorability. While the refugee status had no general effect on the evaluation of individual targets, we observed large variability (a) between targets in how they were evaluated, (b) between perceivers in general, and (c) in how perceivers evaluated Middle Eastern refugees in comparison with nonmigrant Germans. Furthermore, such variability was not random, but was systematically linked to targets' cues and perceivers' attitudes, respectively. With respect to targets, individual facial cues predicted target evaluation: Those targets who smiled more or were more attractive were evaluated more positively, whereas those with a grumpier facial expression and less attractive individuals were devaluated. This result was found for both Middle Eastern refugees and nonmigrant German targets. Hereby, we replicated findings of previous person perception studies in a setting with face photographs of refugee individuals and highlighted the impact of idiosyncratic differences between members of minoritized groups on evaluation outcomes. The results of Study 1 indicate that the individual cue differences of targets are more crucial than target's sheer group affiliation (i.e., being a Middle Eastern refugee) for evaluation outcomes.

With regard to perceivers, we found substantial effects of
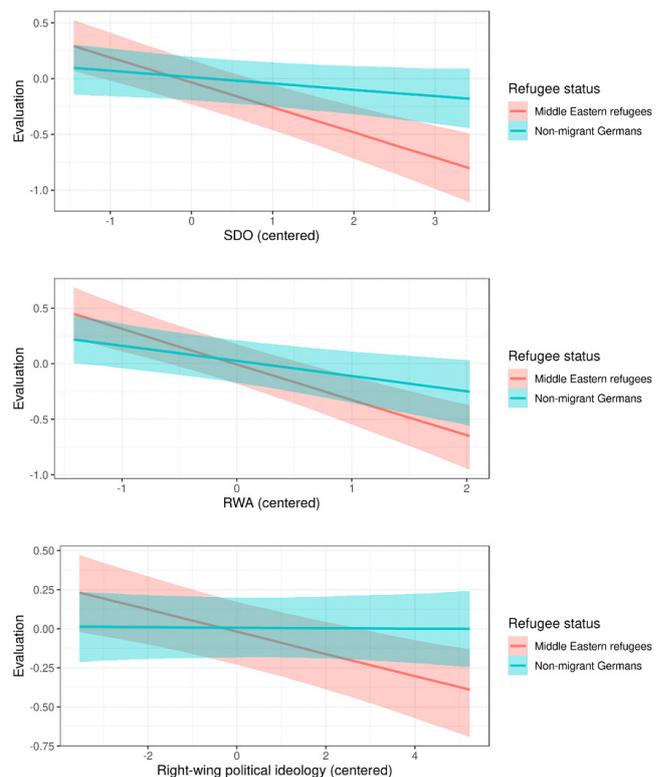
Figure 3. **Main and interaction effects when predicting evaluations from targets' refugee status (red vs. green) and perceiver characteristics, that is, SDO (top), RWA (middle), and political ideology (bottom) in Study 1. Shaded areas indicate the 95% credible intervals of the predictions.**

perceivers' attitudes such as effects of SDO, RWA, and political ideology on the evaluation of Middle Eastern refugees. In line with group-level research, perceivers higher on SDO, RWA, or right-wing political attitudes showed more negative evaluations of refugee individuals as well. However, these attitudinal effects on the devaluation of refugees were not related to a different utilization of cues for refugee versus German targets. Independent of perceivers' levels of SDO, RWA, and political ideology, interindividual differences in targets' facial characteristics were similarly related to how they were evaluated, for example, perceiving a smiling (vs. not smiling) individual more positively.

Study 2

With Study 2, we aimed to replicate and extend the findings of Study 1. We used a very similar methodology, but further considered the important roles of targets' religion and religiousness (e.g., Galen et al., 2014; Weeks & Vincent, 2007). Also, to allow for broader generalizability of our findings, we gathered a sample with a broader age range.

Method

Design and participants

Study 2 also used the cross-random effects or half-block design. However, besides targets' refugee status (Middle

Eastern refugees vs. nonmigrant Germans), also targets' religion (Christian vs. Muslim) and religiousness (weakly religious vs. devout) were additionally incorporated as target factors.[9] As in Study 1, we did not label targets with their allocation to the refugee status (Middle Eastern refugee vs. nonmigrant German) to offer more naturalistic responses to targets from different social groups. The categorization of targets to either a Middle Eastern or German origin relied on observable cues and the use of stereotypes. Despite a potential ambiguity, the categorization can be seen as sufficiently accurate as shown in the additional study on prototypicality of targets referred to in Study 1 (see Footnote 6). However, for the religion and religiousness categories, we followed a different approach as both are mostly non-observable from facial features. While stereotypes also might play an important rule for natural categorization processes, the ambiguity for these categories can be assumed to be more prominent. Therefore, the religion and religiousness labels were presented together underneath each target's photo. Both targets' religion and religiousness were varied in a counterbalanced design following a Latin square approach (see Erickson, 2013). Therefore, we created four versions of each target's photo by pairing the photo with all four label combinations (Christian, weakly religious; Christian, devout; Muslim, weakly religious; Muslim, devout). With the four different versions of every target-photo-label combination, we created four different survey versions by using one version of each target-photo-label combination for each survey. Perceivers were then randomly assigned to one of the four conditions, and we used an allocation quota to adjust the sample sizes. Due to the Latin square approach, each target was shown with each label combination to a subset of perceivers. Hence, we could separate the effects of religion and religiousness from one another and also separate those effects from the effect of targets' refugee status.

Participants were recruited mainly through the platform Psyweb (see https://psyweb.uni-muenster.de/pages/home). At the start, they were informed about the chance to win a voucher worth between 50€ to 100€. Initially, 1,079 participants completed the questionnaire and agreed that we could use their data. We excluded participants who did not indicate German nationality (51 cases) and participants with questionable data due to extreme deviations in the amount of time it took them to complete the study (for 73 cases, the duration was less than half or more than 3 times the defined margins from our pretests). Furthermore, we also excluded those showing strong response-bias abnormalities (in 159 cases, the standard deviation for a perceiver within one dimension or between all dimensions across all 48 targets was below 0.1). Data from total of $N = 796$ per-

ceivers were used in the analyses. Of these, 528 were women, and the mean age was 46.46 ($SD = 15.75$). In the final sample, 423 participants had a university degree, 228 had completed upper secondary school or vocational training, and 145 had finished intermediate and lower secondary school. Furthermore, 111 participants were students (at a university or in school), 43 were in vocational training, 493 had a job, and 149 did not fit into these categories.

Procedure

The procedure was equivalent to the one described in Study 1.[10] After the first part, which was comprised primarily of demographic questions, participants were presented photos of one target at a time and asked to rate them on different dimensions. Afterwards, they filled out different personality and attitude questionnaires before they were debriefed, thanked and redirected to take part in the voucher lottery. On average, the time needed to complete the questionnaire was 41.62 min ($SD = 18.11$).

Photo material

We used the same face stimuli as in Study 1, but for reasons of feasibility, we limited the selection to 24 male individuals from each group of 30 (Middle Eastern refugees; Germans). To reduce the 60 targets from Study 1 to 48 targets for our final sample in Study 2, we selected target individuals such that the mean differences in the cues between the nonmigrant German and Middle Eastern refugee subsets were minimized. After applying a balancing procedure similar to Study 1, we arrived at a composition of 24 targets in each subset that ensured similar means on the cues.

Target cues: attractiveness and smiling

As for the objective cues, we used the same ratings from Study 1 for the 48 targets we selected to account for the individuality of the target stimuli. As in Study 1, the interrater agreements were satisfactory for both smiling, ICC $(2, k) = .79$, and attractiveness, ICC $(2, k) = .73$.

Power analysis

We identified our sample size goals by using the same formulas and the same population parameters as in Study 1. The estimate of the power that is available to detect an effect size of 0.30 is about 0.88 when $N = 600$ perceivers and $N = 48$ targets are assessed.

Perceiver judgments: evaluation

Equivalent to Study 1, we were interested in the general

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9 The design also included a between-participants condition: In one condition, perceivers were told that they would subsequently see photos of potential colleagues, whereas in the other, this was changed to potential neighbors. Because the focus of the present research was on general prejudices (i.e., positive vs. negative evaluations), we did not assume context-specific effects. Therefore, and to present a clearer comparison with results of Study 1, we did not consider this between-perceivers variation any further.

10 Similar to Study 1, we conducted separate analyses including only those targets who were unambiguously assigned to one of the two groups. Results showed no substantial differences in comparison with the results presented below. See Supplement Full Results section for Study 2 "Sensitivity Analyses of Prototypical Targets 1/2" of the respective study (https://osf.io/hxzcj/).

evaluations (i.e., degree of positive vs. negative perception of minoritized group individuals) as a dependent measure. Hereby, every perceiver provided an evaluation of every target on different dimensions. In this study, the items for evaluating targets were answered on 5-point bipolar scales, whereby the scales ranged from one trait (e.g., hostile) to an opposite extreme (e.g., trustworthy). We selected the dimensions of trustworthiness versus hostility, dominance versus submissiveness, and competence versus incompetence and reduced the data to a single factor using the same methodology as described for Study 1. This first factor (eigenvalue: 1.70, explained variance: 56.6%) offers an approximation of the global evaluation of the targets on a dimension of positivity. For the analyses, this positivity index was used as a measure of evaluation.[11]

Perceiver characteristics: SDO, RWA, and political ideology

We assessed SDO, RWA, and political party preference as in Study 1.

Statistical approach

For an illustration of the data structure, see Table 1. All research questions were tested using Bayesian cross-random effects models with random intercepts for the perceivers and the targets. Furthermore, the effect of refugee status (Germans vs. Middle Eastern refugees) was allowed to vary between perceivers (see Study 1). With regard to the factors religion (Christian vs. Muslim) and religiousness (weakly religious vs. devout), we note that due to the Latin square design, each target was labeled with each of the four combinations of religion and religiousness. Therefore, the effect of targets' religion and religiousness can vary between perceivers and between targets as they were part of the labels that were both varied within a photo (across participants) and within participants (across targets). Hence, targets' religion and religiousness were modeled as random slope effects for perceivers (reflecting differences between perceivers in the extent to which targets' religion and religiousness affected their judgments) and as random slope effects for targets (reflecting differences between targets in the extent to which the judgments changed on the basis of the religion or religiousness labels). All analyses were conducted in R (R Core Team, 2018) using the same packages and specifications as in Study 1. Our fully reproducible analyses can be found here https://osf.io/hxzcj/.

Results

Preliminary results

As in Study 1, we calculated the means, standard deviations, and intercorrelations separately for the total sample, the Middle Eastern refugee targets (refugees), and the German targets (Germans). As in Study 1, smiling and attractiveness were both related to more positive evaluations, and the association between attractiveness and evaluation was descriptively slightly higher for the German target subset compared with the Middle Eastern subset (see Table 3). SDO, RWA, and right-wing political ideology were negatively associated with evaluation, whereby these factors had a more negative impact in the refugee target subset than in the German target subset.

Overall evaluation of minoritized group members

In Study 2, we aimed to replicate the effects of no general devaluation of Middle Eastern refugees and extend it to targets' religion and religiousness affiliations. To this end, we computed a cross-random effect model in which evaluation was predicted from three effect-coded group affiliation variables and their interactions: targets' refugee status (-1 = nonmigrant German targets, 1 = Middle Eastern refugee targets), targets' religion (-1 = Christian targets and 1 = Muslim targets), and targets' religiousness (-1 = weakly religious targets and 1 = devout targets). Results showed that targets' refugee status was not associated with positivity evaluations, $b = -0.07$, 95% CI [-0.19, 0.04]. Furthermore, evaluations were not associated with religion, $b = -0.01$, 95% CI [-0.02, 0.00], or with the interaction between targets' refugee status and religion, $b = -0.00$, 95% CI [-0.01, 0.01]. Therefore, the evaluations of Middle Eastern refugees as a minoritized group, Muslims as a minoritized group, and Middle Eastern Muslim refugees did not substantially differ from those of nonmigrant Germans.

Regarding religiousness, we found that being devout was associated with more negative evaluations, $b = -0.09$, 95% CI [-0.10, -0.08]. Furthermore, the interaction of religion and religiousness was associated with negative evaluations, $b = -0.03$, 95% CI [-0.03, -0.02]. The respective simple slope analyses revealed that devout Muslims were evaluated more negatively than devout Christians, $b = -0.04$, 95% CI [-0.05, -0.02], whereas there was no such difference between weakly religious Muslims and Christians, $b = 0.01$, 95% CI [0.00, 0.03]. As for devout targets, we found that devout Christians were evaluated more negatively than weakly religious Christians, $b = -0.07$, 95% CI [-0.08, -0.05], whereas devout Muslims were even more devalued than weakly religious Muslims, $b = -0.12$, 95% CI [-0.13, -0.10]. No significant three-way interaction of targets' refugee status, religion, and religiousness was found, $b = -0.00$, 95% CI [-0.01, 0.01].

Further analyses showed interindividual differences between targets and between perceivers. For targets, we found substantial variations between the average evaluations of targets, $SD_{target\ intercepts} = 0.43$, 95% CI [0.34, 0.53]. Also, for targets there were only small variations in the effects of the religion label, $SD_{target\ slopes\ religion} = 0.02$, 95% CI [0.00, 0.03], the religiousness label, $SD_{target\ slopes\ religiousness}$

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11 Parallel to Study1, we computed an alternative positivity index by simply using the judgment dimension that is most clearly related to positive versus negative evaluations: trustworthiness. All results were in the same direction and similar in size to our results. See the Supplement Full Results section "Study 1/2" in "Sensitivity Analyses of Positivity Version 2" (https://osf.io/hxzcj/) for details.

Table 3. Number of Observations, Means, Standard Deviations, and Intercorrelations for Evaluation, Target Cues, and Perceiver Attitudes Presented Separately for Target Subsets

	n	M	SD	2	3	4	5	6
All targets								
1 Evaluation	38,208	0.00	1.00	.24	.20	-.09	-.03	-.06
2 Smiling	38,208	2.01	0.95		.03	-	-	-
3 Attractiveness	38,208	2.21	0.73			-	-	-
4 SDO	796	2.53	1.11				.47	.26
5 RWA	796	2.30	0.70					.21
6 Political ideology (right)	796	5.45	3.06					
Refugee targets								
1 Evaluation	19,104	-0.08	1.00	.24	.15	-.12	-.08	-.07
2 Smiling	19,104	2.01	1.01		.04	-	-	-
3 Attractiveness	19,104	2.18	0.67			-	-	-
4 SDO	796	2.53	1.11				.47	.26
5 RWA	796	2.30	0.70					.21
6 Political ideology (right)	796	5.45	3.06					
German targets								
1 Evaluation	19,104	0.08	0.99	.23	.24	-.05	.03	-.04
2 Smiling	19,104	2.00	0.89		.02	-	-	-
3 Attractiveness	19,104	2.24	0.78			-	-	-
4 SDO	796	2.53	1.11				.47	.26
5 RWA	796	2.30	0.70					.21
6 Political ideology (right)	796	5.45	3.06					

Note. The facial cues (smiling and attractiveness), social dominance orientation (SDO), and right-wing authoritarianism (RWA) scales ranged from 1 to 5. The right-wing political ideology scale ranged from 1 to 10. Intercorrelations were calculated per subset.

= 0.01, 95% CI [0.00, 0.02], and the combination of the labels, $SD_{target\ slopes\ interaction}$ = 0.01, 95% CI [0.00, 0.02]. Accordingly, the targets differed in particular in how they were evaluated in general and only minimally in the individual effects of labeling. To help contextualizing the results, we present the residual SD, $SD_{residual}$ = 0.78, 95% CI [0.77, 0.78].

For the perceivers, we found substantial variability in how their evaluations differed on average, $SD_{perceiver\ Intercepts}$ = 0.40, 95% CI [0.38, 0.42]. More importantly, the perceivers also differed in how their evaluations were affected by targets' refugee status, $SD_{perceiver\ slopes\ refugee\ status}$ = 0.13, 95% CI [0.12, 0.15], religion, $SD_{perceiver\ slopes\ religion}$ = 0.13, 95% CI [0.12, 0.14], and religiousness, $SD_{perceiver\ slopes\ religiousness}$ = 0.16, 95% CI [0.14, 0.17]. Perceivers only differed slightly regarding the effects of the group affiliation combinations (religion with refugee status, $SD_{perceiver\ slopes\ interactions}$ = 0.02, 95% CI [0.00, 0.04]; refugee status with religiousness, $SD_{perceiver\ slopes\ interactions}$ = 0.01, 95% CI [0.00, 0.02]; religion with religiousness, $SD_{perceiver\ slopes\ interactions}$ = 0.04, 95% CI [0.03, 0.06]; combinations of all three labels, $SD_{perceiver\ slopes\ interactions}$ = 0.01, 95% CI [0.00, 0.03]).

The roles of targets' observable cues

The grand-mean-centered target cues smiling and attractiveness were used to predict the positivity of evaluations in two separate models. In both models, all effect-coded group affiliation variables, the respective cue, and all interaction effects were used to predict the evaluation outcomes. The results of the full model can be found in Supplemental Results section A, Study 2 (https://osf.io/hxzcj/). Here, we focus on the main effects of the target cues and their interactions. The results are illustrated in Figure 4. Both smiling, b = 0.25, 95% CI [0.16, 0.36], and attractiveness, b = 0.26, 95% CI [0.11, 0.40] were associated with more positive evaluations. The residual SDs were the same for both the smiling and attractiveness models, $SD_{residual}$ = 0.77, 95% CI [0.76, 0.77].

To formally test for the relative importance of targets' cues in comparison with their group affiliations, we again compared a null model, a model including main effects of targets' refugee status, and a model including main effects of targets' refugee status, as well as both targets' cue effects with each other. Comparing between-target variances from the null model with the one including targets' refugee status, the variance ratio did not show substantial differences,

VR = 1.04, 95% CI [0.55, 1.77]. Looking at the impact of targets' individual cues, the variance ratios showed a substantial reduction compared with the null model, VR = 0.45, 95% CI [0.24, 0.78] and the one with only targets' refugee status, VR = 0.46, 95% CI [0.24, 0.80]. Accordingly, as in Study 1, the impact of targets' individual cues (smiling and attractiveness) was more relevant than the targets' group affiliations.

The effects of both smiling and attractiveness were consistent across targets' refugee status, religion, and religiousness. Furthermore, no three-way or four-way interactions between cues and group affiliations were found. The full results can be found in Supplemental Results section A Study 2 (https://osf.io/hxzcj/). Thus, similar to Study 1, Study 2 revealed clear effects of targets' smiling and attractiveness on evaluations, whereas both cues were utilized in a similar way across targets' group affiliations.

The role of perceiver attitudes

After grand-mean centering the perceiver attitudes, they were used to predict the evaluations as in Study 1. Therefore, one model for each perceiver attitude was calculated, including the main effects of the group affiliations as above, the main effects of perceivers' attitude, as well as all interaction effects. The results are depicted in Figure 5 (also see Supplemental Results section B Study 2 at https://osf.io/hxzcj/).

The role of perceiver SDO. A higher SDO level was associated with more negative evaluations of targets in general, b = -0.08, 95% CI [-0.11, -0.05], and with negative evaluations of specific minoritized group members in particular. Hereby, we found that it was associated with more negative evaluations of Middle Eastern refugees, b = -0.03, 95% CI [-0.05, -0.02]. Additional simple slope analyses revealed that higher SDO was associated with more negative evaluations of nonmigrant Germans, b = -0.05, 95% CI [-0.07, -0.02], and even more negative evaluations of Middle Eastern refugees, b = -0.11, 95% CI [-0.14, -0.08]. Whereas for low levels of SDO (one SD below the mean), there was no difference between these groups, b = -0.04, 95% CI [-0.15, 0.07], for high levels of SDO (one SD above the mean), we found that Middle Eastern refugees were evaluated slightly more negatively than nonmigrant Germans, b = -0.11, 95% CI [-0.21, -0.01]. Furthermore, SDO was associated with more negative evaluations of Muslims, b = -0.04, 95% CI [-0.05, -0.03] as well. In the respective simple slope analyses, we found a pattern that was similar to the group affiliation results above. Higher levels of SDO were associated with more negative evaluations of Christians, b = -0.04, 95% CI [-0.07, -0.02], and even more negative evaluations of Muslim targets, b = -0.11, 95% CI [-0.14, -0.09]. Whereas for low levels of SDO (one SD below the mean), we found that Muslims were evaluated slightly more positively than Christians, b = 0.03, 95% CI [0.01, 0.04], but for high levels of SDO (one SD above the mean), Muslim targets were evaluated more negatively than Christians, b = -0.05, 95% CI [-0.07, -0.04]. For the religiousness group difference, we found that SDO was not associated with different evaluations of devout individuals as opposed to weakly religious targets, b = -0.00, 95% CI [-0.02, 0.01]. There were also no
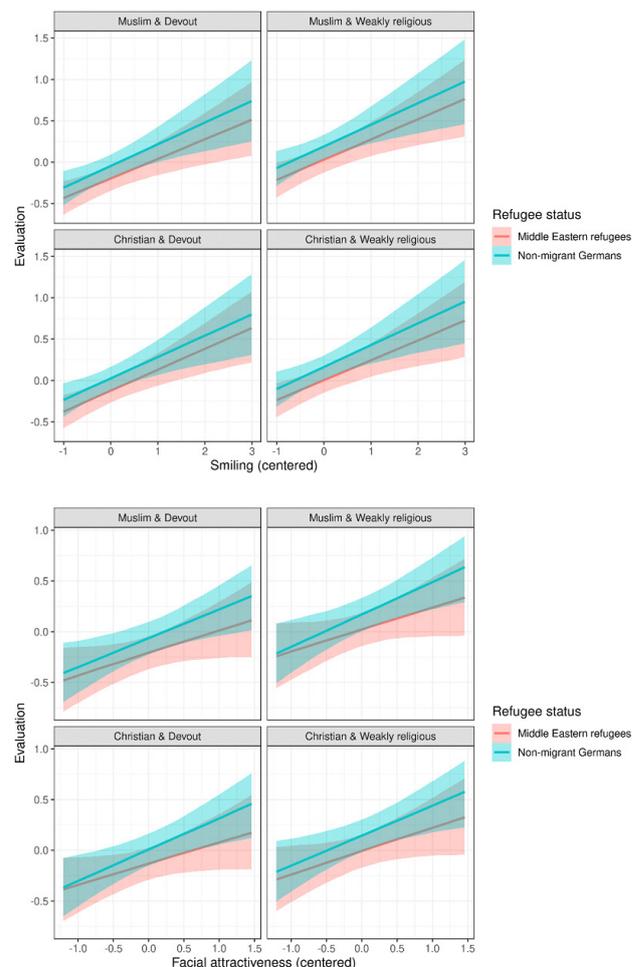
Figure 4. Main and interaction effects when predicting positivity from targets' refugee status (red vs. green), religion (top vs. bottom rows), and religiousness (left vs. right column) separately for targets' smiling (top half) and attractiveness (bottom half) for Study 2. The shaded areas indicate the 95% credible intervals of the predictions.

significant three- or four-way interactions between SDO, refugee status, religion, and religiousness (see all results in Supplemental Results section B Study 2 at https://osf.io/hxzcj/). For contextualization, the residual SD for the SDO model was $SD_{residual}$ = 0.78, 95% CI [0.77, 0.78].

The role of perceiver RWA. RWA was only descriptively associated with more negative evaluations in general, b = -0.04, 95% CI [-0.09, 0.01]. Similar to the results for SDO, RWA was related to more negative evaluations of Middle Eastern refugees as opposed to nonmigrant Germans in particular, b = -0.08, 95% CI [-0.10, -0.05]. Simple slope analyses showed that for nonmigrant Germans, higher RWA was unrelated to the positivity of evaluations, b = 0.04, 95% CI [0.00, 0.08], whereas it was associated with more negative evaluations of Middle Eastern refugees, b = -0.12, 95% CI [-0.16, -0.07]. For lower levels of RWA (one SD below the mean), the evaluations of the two groups did not differ, b = -0.02, 95% CI [-0.12, 0.08], whereas for higher levels of RWA (one SD above the mean), the Middle Eastern refugees were evaluated less positively than the nonmigrant Germans, b

= -0.13, 95% CI [-0.23, -0.03]. For religious affiliation, we found that RWA was associated with more negative evaluations of Muslims as compared to Christians, b = -0.06, 95% CI [-0.08, -0.05]. Simple slope analyses revealed that RWA had no effect for Christian targets, b = -0.03, 95% CI [-0.01, 0.06], whereas for Muslims, higher RWA was associated with less positive evaluations, b = -0.10, 95% CI [-0.15, -0.06]. For low levels of RWA (one SD below mean), the results showed that Muslim targets were evaluated slightly more positively than Christian targets, b = 0.03, 95% CI [0.02, 0.05], whereas for higher levels of RWA (one SD above the mean), the opposite was found, b = -0.06, 95% CI [-0.07, -0.04]. RWA was furthermore associated with more negative evaluations of devout Muslims in particular, b = -0.02, 95% CI [-0.03, -0.01]. As with SDO, there were no significant three- or four-way interactions of RWA with refugee status, religion, or religiousness (see all results in Supplemental results section B Study 2 at https://osf.io/hxzcj/). Similar to the residual SD of the SDO model, for the RWA model it was $SD_{residual}$ = 0.78, 95% CI [0.77, 0.78].

The role of perceiver political ideology. Right-wing political ideology was associated with more negative evaluations in general, b = -0.02, 95% CI [-0.03, -0.01]. Compared with SDO and RWA, associations with more negative evaluations of Middle Eastern refugees were even smaller, b = -0.01, 95% CI [-0.01, -0.00]. We nevertheless calculated simple slopes, which showed that this devaluation was not present for the group of nonmigrant Germans, b = -0.01, 95% CI [-0.02, 0.00], whereas the Middle Eastern refugee targets were evaluated slightly more negatively as their right-wing political ideology increased, b = -0.02, 95% CI [-0.03, -0.02]. There were no differences in evaluations between the groups for low levels (one SD below the mean) or for high levels of right-wing political ideology (one SD above the mean). Right-wing political ideology was only slightly associated with more negative judgments of individuals of the Muslim faith as opposed to Christians, b = -0.01, 95% CI [-0.01, -0.00]. Simple slope analyses showed that there was no association for Christian targets, b = -0.01, 95% CI [-0.02, 0.00], but there was a negative association with evaluations of Muslim targets, b = -0.02, 95% CI [-0.03, -0.02]. For right-wing-leaning individuals (one SD above the mean), there was a slightly more negative evaluation of Muslims as opposed to Christians, b = -0.03, 95% CI [-0.05, -0.02], whereas there was no difference for left-wing-leaning individuals (one SD below the mean), b = 0.01, 95% CI [-0.01, 0.02]. Regarding group differences in religiousness, we found that right-wing political ideology was not associated with different evaluations of devout individuals as opposed to weakly religious targets, b = 0.00, 95% CI [-0.00, 0.01]. There were no significant three- or four-way interactions (see Supplemental Results section B Study 2; https://osf.io/hxzcj/). Equivalent to both other models, the residual SD for the political ideology model was $SD_{residual}$ = 0.78, 95% CI [0.77, 0.78].

In sum, replicating the findings of Study 1, SDO, RWA, and (somewhat less pronounced) right-wing political ideology were associated with more negative evaluations of refugees. In addition, these attitudes also predicted a devaluation of Muslims and partly of devout Muslims in particular. We note that these effects were rather small and consid-
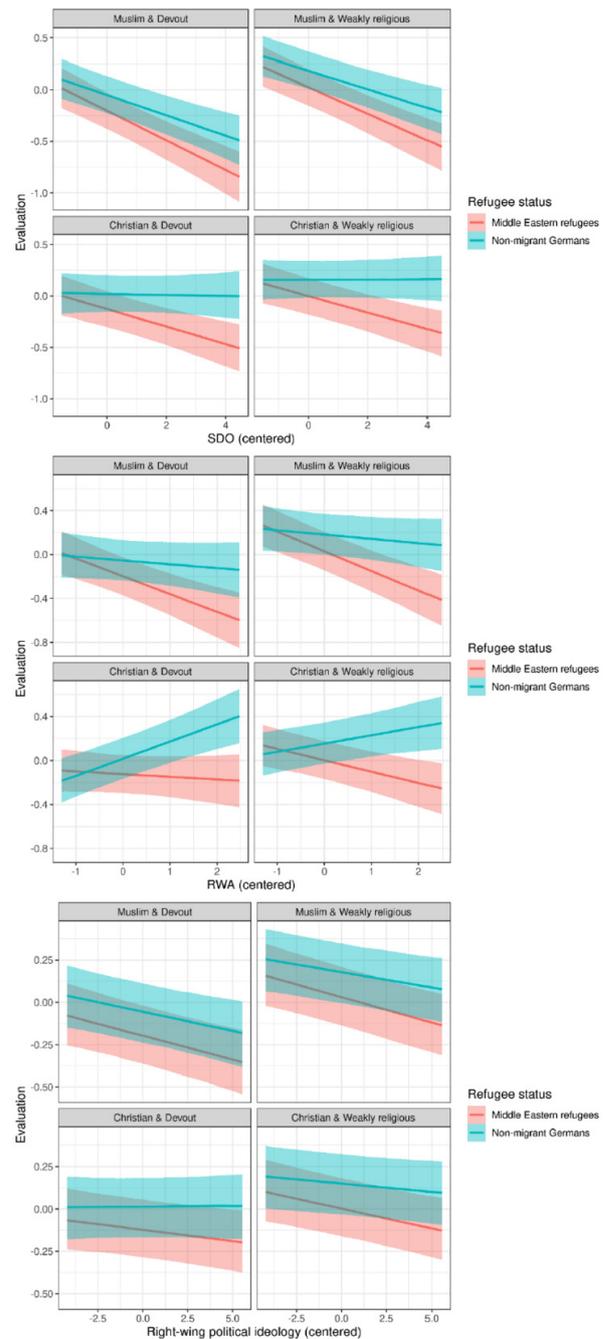
Figure 5. **Main and interaction effects when predicting positivity from targets' refugee status (red vs. green), religion (top vs. bottom rows), and religiousness (left vs. right column) separately for perceivers' SDO (top), RWA (middle), and right-wing political ideology (bottom). The shaded areas indicate the 95% credible intervals of the predictions.**

erably weaker than the cue effects reported above.

The interplay between target cues and perceiver differences

Parallel to Study 1, we tested for complex interaction effects between individual target cues, perceiver attitudes,

and targets' group affiliations on evaluation outcomes. The results replicated findings from Study 1, that is, (a) effects of smiling and attractiveness did not vary across perceivers' SDO, RWA, and political ideology, and (b) differences in perceiver attitudes were not associated with specific cue utilization patterns for Middle Eastern refugees in comparison with nonmigrant Germans. Furthermore, Study 2 extended the findings of Study 1 by showing that (c) perceiver attitudes were equivalently not related to differences in cue utilization patterns for other target group affiliations (i.e., religion and religiousness). The full results of all models that tested for complex interactions between individual target cues, perceiver attitudes, and target affiliations can be found in Supplemental Results section C Study 2 (see https://osf.io/hxzcj/).

Discussion

In Study 2, we again investigated the role of target and perceiver differences for the person perception of Middle Eastern refugee targets and extended the scope of the investigation to potential effects of targets' religion and religiousness. To improve the generalizability of our findings, we investigated a larger and more diverse sample concerning perceivers' age. Replicating and extending Study 1, no general devaluation effects for minoritized group members were found for Middle Eastern refugees and Muslim individuals. Interestingly, we found a general devaluation of the minoritized religiousness group (devout) and in particular of the devout members of the minoritized religious group (devout Muslims).

For targets, and in line with Study 1, we found that smiling and attractiveness predicted positive evaluations. As in Study 1, these effects did not differ between target groups (e.g., refugee status, religion, or religiousness), indicating very similar perception processes across targets of the majority and minoritized groups. Remarkably, the effect sizes we found indicate, as in Study 1, that individual-level target cues such as smiling and attractiveness played a much larger role in the evaluation of individual targets based on photos than sheer group affiliation. The context and evaluation of effect sizes and their magnitude is a challenging topic for person perception studies including both cue-level and group-level characteristics. To better interpret the presented effect sizes, one can follow different approaches: First by looking at the variance ratios showing a substantial reduction of between-target variance about half when adding individual cues to the null model. Second, by calculating standardized regression coefficients using the presented (unstandardized) regression coefficients and the corresponding predictors' standard deviations[12]. Third, there are ways to define a region of practical equivalence (ROPE) around a point null hypothesis. This interval could then be compared to the confidence interval and help de-

ciding about the null hypothesis. However, the definition of such a ROPE is dependent on the subject and scales of testing and therefore need to be informed by theoretical considerations or previous results. Due to the limited number of comparable studies and novelty in the comparison of cue-level and group-level characteristics, we are hesitant to define ROPEs, but would like to encourage future research to engage in the delineation of such ROPEs for different contexts and based on sufficient empirical studies.

For perceivers, those higher in SDO, RWA, and right-wing political ideology tended to show more social criticalness in general and particularly towards minoritized group members with regard to refugee status (i.e., Middle Eastern refugees) and religion (i.e., Muslims). Furthermore, perceivers higher in RWA provided more negative evaluations of devout Muslims in particular. In line with traditional group-level research, general as well as specific negative evaluation of others are partially driven by perceivers' attitudes SDO, RWA, and political ideology. Also replicating findings from Study 1, these attitude-related devaluations were not driven by differences in the use of attractiveness and smiling cues.

General Discussion

The fundamental importance of person perception is well-established and especially prominent for individuals of minoritized groups (see Richeson et al., 2007 for an overview). First impressions can play an important role with respect to refugee integration: Being evaluated more or less positively at first sight should have a non-trivial influence on how easily refugees reach access to and adjust in private, educational, and occupational social contexts. The importance of evaluations based on first impressions of a refugee's physical appearance may even go as far as being critical for the outcome of their asylum application process. Previous research points to the relevance of group affiliation (e.g., Lazerus et al., 2016; Naumann et al., 2009; Zebrowitz & Montepare, 2008) and individual cue characteristics (e.g., Back et al., 2011; Hirschmüller et al., 2013; Willis & Todorov, 2006) for first impressions, as well as to the impact of perceiver attitudes for the evaluation of minoritized groups (e.g., Craig & Richeson, 2014; Dunwoody & McFarland, 2018). Building on this research, we conducted two studies to explore target and perceiver characteristics as predictors of first impressions of face photographs towards refugees.

Results indicated (a) no general devaluation of minoritized group members (e.g., refugees) with exception of devout individuals, (b) strong differences between targets in how they were evaluated, which was predicted by their physical attractiveness and degree of smiling, and (c) differences between perceivers in how they evaluated minoritized group members, which was predicted by their attitudes. (d)

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12 Because the presented criterion (positivity) is already standardized, one can calculate standardized regression coefficients (and their CIs) by multiplying the presented regression coefficients (and their CIs) with the corresponding predictor's standard deviation (see the total sample section in Table 2 and Table 3).

These interindividual differences between perceivers were not the result of a different use of cues across majority and minoritized targets.

The Role of Group Affiliations for First Impressions

Refugees' integration has become one of the most important and challenging issues in recent times (Echterhoff et al., 2020). This is reflected in an increasing number of studies on stereotypes and prejudice toward refugees (e.g., Bansak et al., 2016; Canetti et al., 2016; Cowling et al., 2019; Echterhoff et al., 2019; Hangartner et al., 2019; Kotzur et al., 2017, 2019; Murray & Marx, 2013; Schweitzer et al., 2005). Those previous studies have investigated evaluations of group labels or of hypothetical individual exemplars from groups and found both a general devaluation of refugees (Canetti et al., 2016; Kotzur et al., 2019; Murray & Marx, 2013; Schweitzer et al., 2005) and pronounced devaluations of specific subgroups such as economic and Muslim refugees (Bansak et al., 2016; Czymara & Schmidt-Catran, 2017; Kotzur et al., 2017).

In the present studies, we investigated perceptions and evaluations of refugee faces from photographs, that is, we used specific individuals as targets and varied group affiliations connected to prototypical refugees in Western countries. When considering both studies together, we found little support for consistent devaluation of minoritized group individuals. Devaluation was not systematically predicted by members' minoritized refugee status (Middle Eastern refugees; in Studies 1 and 2), religious minoritized members (Muslims), or the combination of minoritized affiliations (Middle Eastern Muslim refugees; both in Study 2). The only group whose individual members were generally devaluated were those of the minoritized religiousness (devout individuals) and in particular in interaction with the minoritized religion (devout Muslims). Conceptually, this might be related to religion and religiousness (and their combination) as key aspects of majority and minority group categorizations (Tajfel & Turner, 1979; Turner et al., 1987), as well as to specific stereotypical perceptions attached to religion and religiousness minoritized groups (e.g., low power/status), for example, on the basis of threat and/or resource competition perceptions (Bergh et al., 2016). The present results highlight the need to further differentiate effects of group affiliations ascribed to refugees (such as being Muslim or devout or both) on perception outcomes. While the presented studies showed first evidence on the importance of religion and religiousness affiliations, future studies should further address the extent to which group affiliations drive potentially negative evaluations of refugees. However, it is important to emphasize that this effect was much smaller than the strong and robust effects of targets' smiling and attractiveness. In general, the effects of target's interindividual cue differences (e.g., degree of smiling, facial attractiveness) on evaluation outcomes were stronger than the mere group affiliation (e.g., Middle Eastern refugee). This connects to first findings showing a superiority of facial expressions (i.e., smiling) over a target's group affiliation in impression formation (Senft et al., 2016) and highlights the importance of incorporating first impression

research in intergroup settings.

While research on prejudices and devaluations of groups or abstract vignettes found strong devaluation effects for minoritized groups, the present study could not fully transfer these findings to a face perception setting of minoritized group individuals based on photographs. Previous research on factors that differentiate between groups and individual targets might help explain the differences we found. For instance, group interactions were found to be more competitive than interactions with individuals (e.g., Hoyle et al., 1989; Insko & Schopler, 1987; Schopler & Insko, 1992) and might therefore involve more minoritized group devaluation. Furthermore, groups tend to be judged on memory-based processes (Hastie & Park, 1986), whereas evaluations of individual targets tend to rely on ad hoc judgments that are based on accessible information (Sanbonmatsu et al., 1987). This would also be in line with the person-positivity bias (Sears, 1983). According to this approach, individuals are typically evaluated more favorably than more non-individualistic attitude objects including groups of individuals. When perceiving a target photo with unique facial cues such as emotional expression, perceivers may accordingly utilize idiosyncratic cues and form individual judgments rather than base their judgments on sheer group affiliation. However, we also highlight that the results should of course not be taken out of context to cast doubt on the actual numerous prejudice and discrimination experiences of minoritized individuals. Rather, this might have relevant implications for the development of effective interventions. As intergroup bias tends to be reduced through interpersonal contact (Islam & Hewstone, 1993; Pettigrew & Tropp, 2006; see also Paluck et al., 2019) and confrontation (Czopp et al., 2006), it seems helpful to emphasize existing interindividual differences and idiosyncratic features within both majority and minoritized target groups.

The Role of Target Differences in Observable Cues for First Impressions

In line with the idea that photograph perceptions of individual minoritized group members are not primarily driven by their group affiliations, results of both studies showed (a) substantial variability between target individuals within groups in how positively they were evaluated and (b) that these differences were robustly predicted by targets' degree of smiling as well as their facial attractiveness.

Perceivers did not use cues differently for minoritized targets (e.g., Middle Eastern refugees or Muslims) compared to majority targets (e.g., nonmigrant Germans or Christians) in either Study 1 or Study 2. Therefore, it seems that these cue-based evaluation processes are generalizable across majority groups and minoritized groups.

From an evolutionary perspective, it might have been important not only to be sensitive to group differences (e.g., in ethnicity) but also to be sensitive to individuals' intentions (whereby smiling might be a useful cue; see Jenkins et al., 2011; Johnson & Fredrickson, 2005 and reproductive fitness (whereby facial attractiveness might be a useful cue; e.g., Rhodes et al., 2001) in both the majority group and the minoritized group (Hehman et al., 2013). To further understand the contributions to perception outcomes, current

methodological approaches highlight variance component analyses (VCAs) as a measure for differentiation (Martinez et al., 2020). While the present paper focused on fundamental differences in target and perceiver contributions to perception outcomes, future research might include designs that allow for even more differentiated VCAs.

In sum, we found strong evidence that individual target cues shaped evaluation outcomes and no evidence for different utilizations of face stimuli between majority and minoritized target groups for the refugee status, religion, and religiousness (sub)groups.

The Role of Perceiver Differences in Attitudes for First Impressions

Perceiver attitudes are known to affect perceptions of groups and particularly minoritized groups. The present results found higher levels of SDO, RWA, and right-wing political ideology to be mostly associated with more negative evaluations of minoritized group individuals (e.g., refugees). Accordingly, the associations of SDO, RWA, and right-wing political ideology with negative evaluations of minoritized groups (e.g., for the perception of immigrants and Muslims; Craig & Richeson, 2014; Dunwoody & McFarland, 2018), seem to generalize to evaluations of minoritized target individuals' facial appearances on photographs.

Previous research has sometimes shown differential effects of SDO, RWA, and political ideology on the evaluation of minoritized groups (Duckitt & Sibley, 2009), despite the fact that all three attitudinal variables are strongly related to each other (Wilson & Sibley, 2013). In particular, RWA was found to particularly predict prejudice toward deviant groups, whereas SDO was found to be more relevant for subordinate groups (Duckitt, 2006). In the present studies, we did not find any robust differences between SDO and RWA with regard to the evaluation of different group members. All three attitudinal constructs were comparably strongly related to the devaluation of minoritized group members.[13] It might be the case that differences in the attitudinal effects are only relevant in contexts with a stronger salience of specific group characteristics (e.g., subordination, deviance).

The Interplay of Perceiver Attitudes and Target Cues

As a last step in our analyses, we tested whether individual perceiver differences in SDO, RWA, and political ideology affect cue utilization processes in such a way that might explain more negative perceptions of minoritized individuals. Our results suggest that this was not the case. Independent of perceivers' levels of SDO, RWA, and right-wing political ideology, targets' facial characteristics were utilized

in a similar way for evaluations (e.g., perceiving and evaluating a smiling vs. nonsmiling individual more positively). This is in contrast to the idea of either a less differentiated consideration of target cue differences (e.g., not processing differences in smiling as soon as one identifies a target as a refugee) or a higher susceptibility to certain cues (e.g., particularly negative reactions to grumpy faces for refugee targets) for attitudinal differences between perceivers. Instead, this finding supports the idea of a general tendency to evaluate certain idiosyncratic features more or less positively, not only independently from a target's group affiliation, but also independently of the perceiver's (political) attitudes. Furthermore, it indicates that the effects of perceiver attitudes (i.e., more negative perceptions of minoritized group individuals) are driven by additional independent processes. For example, perceivers might first identify and categorize a target as a member of the minoritized group based on the perception of cues that show actual differences between minoritized group and majority group members (e.g., skin tone). Following this, they might apply their attitude-related stereotypes and prejudice (Dunham et al., 2015; Gosling et al., 2002; MacLin & Malpass, 2001). Future research might build on the present initial findings and try to unravel more closely the cue-utilization and stereotype-use processes that underlie negative perceptions of minoritized group members (such as devout Muslims).

Constraints of Generality, Limitations and Future Prospects

In the present research, we applied a zero-acquaintance person-perception design to an intergroup setting focusing on group affiliations related to refugees. We were thus able to assess spontaneous other-perceptions based on a selection of photographs and simultaneously analyze the influence of target characteristics (independently coded facial cues) and perceiver characteristics (self-reported social attitudes), both of which are important to consider when trying to explain person perception phenomena (Back, 2021; Kenny, 1994).

Naturally, the design we applied is only one of many possible approaches to analyze the role of target and perceiver interindividual differences in perceptions. There are a number of constraints to the generalizability of the present findings and further limitations, as well as possible extensions that should be pursued in future research. Specifically, the constraints on generality of the present research pertain to (a) participants, including the sampling of perceivers, (b) stimuli, including the generalizability of target stimuli, (c) procedure, including the presentation of target groups and additional approaches to the assessment of variables (e.g., perceiver attitudes, judgments, target personality and cues) and (d) temporal specificity. Besides the explanations be-

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13 While we note the difficulties of interpreting controlled/residualized effects (e.g., Vize et al., 2018), we conducted supplemental analyses with differential effects of SDO and RWA for the interested reader. The results showed that controlling for one or the other within a model, did not substantially change the overall effects on perception outcomes. However, due to the high intercorrelations of SDO and RWA in our samples (.41 in Study 1 and .61 in Study 2), interaction effects with refugee status were more mixed in these models. For details, see the Supplemental Results section under "supplemental results 2" on https://osf.io/hxzcj/.

low, we have no reason to believe that the results depend on other characteristics of the participants, materials, or context.

Sample characteristics

Whereas we already moved beyond the investigation of student samples only, an even more representative sampling of perceivers would allow for a wider range of socioeconomic, religious affiliation, and attitude variables. Given that the range of these characteristics was most likely restricted in the present studies, the resulting associations might be considered rather conservative estimates. We assume the presented results apply to a rather White and educated population from Western countries comparable to Germany, and to perceivers who are not visually impaired.

Stimuli

As for other first impression studies based on face perception, the target sampling remained crucially important. By including Iranian and American targets, the paradigm offered the possibility to compare standardized target groups with different ethnic origins. One could argue that the majority sample with American targets differed from the mainly German perceiver sample and also that the Iranian sample was not prototypical for refugees in Germany (Brücker et al., 2016). However, as finer-grained ethnic origin is rarely categorized accurately (Kosic & Phalet, 2006) and biases have been found to overlap for Middle Eastern and Arab individuals (e.g., Ahmed, 2010; French et al., 2013; Saleem & Anderson, 2013), target sample selection can be assumed to play a minor role. In addition, this paradigm offered the opportunity to compare perceptions of Middle Eastern and Western origin targets as more broadly defined ethnic categories. Nonetheless, future research should include other target samples to extend generalizability to other minoritized individuals.

Besides the ethnic sampling, the sampling of male individuals only is an important limitation that need to be kept in mind. On one hand, the focus on male face stimuli was made due to theoretical reasons, especially as the prototypical refugee image in current public discourse centers around male refugees (Brücker et al., 2016). On the other hand, this methodological choice was a pragmatic consequence of empirical restrictions. The complex data structure and our goal of high power did not allow to include further sources of variance. Doubling the number of stimuli, which would have been needed to allow for high power within both male and female target groups, would have most likely led to participant fatigue effects and less valid data. However, future studies are advised to include female face stimuli to test for the generalizability of our findings and investigate potential differences in the perception of male and female individuals from minoritized groups. Including female faces might increase benevolent perceptions, while one might also observe increased devaluation due to headscarf effects for female stimuli from certain Muslim background (e.g., Mahmud & Swami, 2009). To check for interaction effects of perceiver's gender, we conducted supplemental analyses. Results showed no overall effects. Details can be found in the Supplemental Results 2

for Study 1 and Study 2 (https://osf.io/hxzcj/).

Procedure

Regarding the general procedure, there are no specific constraints for replicating the studies. As the testing was done online with the only requirement of a technical device accessing the website, future studies do not need specific infrastructure, technical devices or special training. Regarding specific parts of the procedure the constraints and implications for future studies are explained below.

For the variation and labeling of group affiliations, the present studies included certain social groups to represent empirical group affiliations of refugees in Germany and represent different minoritized groups (e.g., Middle Eastern refugees, Muslims, and devout individuals). Future research should further differentiate target groups (e.g., economic refugees, different ethnicities, different qualifications) and contexts (e.g., live and online interactions, private and work contexts) to better understand the effects of selected group affiliations and perception setting. Furthermore, future research should examine to what extent the type of presentation affects perception outcomes by varying the labeling of target photos (e.g., labeling refugees). While a more salient indication of the targets' refugee status should elicit more category-based processes (Fiske et al., 1987), the perception of individual face photograph stimuli with ambiguous group affiliations is more ecologically valid for first impressions in daily life, which rarely include explicit labeling. With additional analyses on subsets of targets rated as particularly prototypically, we found evidence that ambiguous categorizations did not solely drive perception outcomes.

Furthermore, perceivers' RWA, SDO, and political ideology were found to moderate devaluation effects of not only Muslims and devout individuals (both labeled), but also of refugee individuals (not labeled) in both studies. As those attitudes repeatedly moderated devaluation effects of minority groups (e.g., Craig & Richeson, 2014; Dunwoody & McFarland, 2018; Echebarria-Echabe & Fernández-Guede, 2006), this provides further evidence that the categorization processes of Middle Eastern individuals to the minoritized group and those of Western origin to a majority group worked in our design. Nevertheless, we cannot exclude the possibility that perceivers in our studies showed a less than perfect differentiation of group affiliations. Future research is well advised to replicate the present results with different ways of experimentally varying group affiliation (e.g., contrasting brief person descriptions paired with photographs with photo only and person description only conditions). Another option would be to include some manipulation check items within the task itself while being careful to not include demand characteristics at the same time (e.g., asking participants to also rate targets on more neutrally framed aspects such as the likelihood that they experienced discrimination from others). More generally speaking, future research might vary both the abstractness (individual level to group level) and the explicitness of a target's group affiliation in a more fine-grained way to systematically analyze effects on general, cue-based, and attitude-based evaluations.

For the procedure of assessing judgments, attitudes and

cues, future research might realize a number of extensions. Regarding perceiver attitudes, one might include implicit measures to capture more automatic aspects of more or less negative perceptions. This might include more generalized measures of implicit evaluations as assessed with Implicit Association Tests (e.g., Greenwald et al., 2009; see also Hirschmüller et al., 2013) as well as implicit evaluations of individual targets (e.g., Krause et al., 2014). For the judgments, the present research focused on a general positivity evaluation to offer first insights on a basic dimension of person perception. Future research should take a closer look into differential effects of agency, competence, warmth, and morality dimensions. With regards to target differentiation, future research should include further measures of targets' personalities. Following lens model frameworks (Hirschmüller et al., 2013; Nestler & Back, 2013), this would allow to explore the extent to which physical and behavioral cues are indicators of stable personality characteristics (i.e., to analyze cue validities) and mediate personality-prejudice and personality-personality impression (i.e., accuracy) associations. Also, to foster the understanding of different facial cues on perception outcomes in intergroup settings, future research might broaden methodological approaches for the assessment of facial cues. Specifically, in addition to attractiveness ratings as applied in the present research, one might try to automatically extract facial features such as symmetry. These methodological extensions should be applied not only for observable, but also for non-observable target features. While more abstract stimuli like vignettes can be easily varied experimentally in an orthogonal design, this is more difficult for the naturalistic target photos used in our approach. Not directly observable target features (such as religion), in contrast, are difficult to investigate without some sort of experimentally varied labelling, which again limits the generalizability to naturalistic contexts. Future research is well advised to further extend and integrate different experimental approaches (e.g., experimentally varying blended faces of different ethnicities) and more representative approaches (e.g., observing participants of different group affiliations during mutual social interactions) to analyze prejudiced perceptions.

Temporal specificity

Regarding potential effects of cultural or temporal norms, we would like to highlight that the presented studies are conducted in temporal proximity to the political and societal debates on refugee movements in 2015. With both studies being conducted in 2016 and 2017, respectively, these effects might affect the presented outcomes. Future studies are advised to take temporal context into account.

Conclusions

With the present studies, we aimed to contribute to a better understanding of determinants for first impressions of refugee individuals as members of a minoritized group in Western societies. Applying a zero-acquaintance person perception framework, we analyzed multiple perceivers' evaluations of multiple individual targets. While we did not find a general devaluation of Middle Eastern refugees or Muslims, we do not claim in any way that this casts doubt about the numerous experiences of devaluation minoritized individuals face in daily life. Our results offer a limited perspective on perception outcomes based on face photographs under lab conditions leaving out crucial aspects of such daily discrimination. In addition, the presented studies found large variability in evaluations between both the evaluated targets and the evaluating perceivers. These interindividual differences were systematically related to targets' cue characteristics and perceivers' attitudes. Furthermore, refugee and nonrefugee targets who smiled more and were more physically attractive were evaluated more positively. The fact that interindividual differences within target groups were much more influential in determining target evaluations than group affiliation supports the idea that person perception might reduce negative evaluations and therefore highlight the need for interventions (a) allowing for direct contact with individual members of minoritized groups and (b) facilitating the experience of interindividual differences within both the minoritized group and perceivers' majority group.

In sum, the present findings highlight the need for differentiation between target group affiliations and target individual characteristics as well as perceiver characteristics to understand the evaluations of refugees. Future research might extend the present approach to a wider range of person perception and social interaction settings to increase the understanding of and to counteract negative first impressions of minoritized group members.

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Contributions

Funding information

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Competing interests

The authors of the present manuscript have no competing interests to declare.

Data accessibility statement and Supplemental materials

All codebooks, data, analysis scripts, main and supplemental analyses can be found at the OSF page: https://osf.io/hxzcj/. Stimuli could not be provided due to copyright issues, but are accessible through request at the following databases: The American Color Face Recognition Technology database (Phillips et al., 1998, 2000) and the Iranian Face Database (Bastanfard et al., 2007; Dehshibi, 2018; Dehshibi & Bastanfard, 2010).

REFERENCES

Ahmed, A. M. (2010). Muslim discrimination: Evidence from two lost-letter experiments. *Journal of Applied Social Psychology*, *40*(4), 888–898. https://doi.org/10.1111/j.1559-1816.2010.00602.x

Altemeyer, B. (1981). *Right-wing authoritarianism*. University of Manitoba Press.

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

Bach, P., & Schenke, K. C. (2017). Predictive social perception: Towards a unifying framework from action observation to person knowledge. *Social and Personality Psychology Compass*, *11*(7), e12312. https://doi.org/10.1111/spc3.12312

Back, M. D. (2021). Social interaction processes and personality. In J. Rauthmann (Ed.), *The handbook of personality dynamics and processes* (pp. 183–226). Elsevier. https://doi.org/10.1016/b978-0-12-813995-0.00008-x

Back, M. D., & Nestler, S. (2016). Accuracy of judging personality. In J. A. Hall, M. S. Mast, & T. V. West (Eds.), *The social psychology of perceiving others accurately* (pp. 98–124). Cambridge University Press.

Back, M. D., Schmukle, S. C., & Egloff, B. (2011). A closer look at first sight: Social relations lens model analysis of personality and interpersonal attraction at zero acquaintance. *European Journal of Personality*, *25*(3), 225–238. https://doi.org/10.1002/per.790

Bansak, K., Hainmueller, J., & Hangartner, D. (2016). How economic, humanitarian, and religious concerns shape European attitudes toward asylum seekers. *Science*, *354*(6309), 217–222. https://doi.org/10.1126/science.aag2147

Bastanfard, A., Nik, M. A., & Dehshibi, M. M. (2007). Iranian Face Database with age, pose and expression. *2007 International Conference on Machine Vision*, 50–55. https://doi.org/10.1109/icmv.2007.4469272

Beierlein, C., Asbrock, F., Kauff, M., & Schmidt, P. (2014). Die Kurzskala Autoritarismus (KSA-3): Ein ökonomisches Messinstrument zur Erfassung dreier Subdimensionen autoritärer Einstellungen [Authoritarianism short scale (KSA-3): An economic measure to assess three subdimensions of authoritarian attitudes]. *GESIS-Working Papers, 2014/35*. https://nbn-resolving.org/urn:nbn:de:0168-ssoar-426711

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), 367–395. https://doi.org/10.1037/pspi0000064

Biesanz, J. C. (2010). The social accuracy model of interpersonal perception: Assessing individual differences in perceptive and expressive accuracy. *Multivariate Behavioral Research*, *45*(5), 853–885. https://doi.org/10.1080/00273171.2010.519262

Bleich, E. (2011). What is islamophobia and how much is there? Theorizing and measuring an emerging comparative concept. *American Behavioral Scientist*, *55*(12), 1581–1600. https://doi.org/10.1177/0002764211409387

Brandt, M. J., Reyna, C., Chambers, J. R., Crawford, J. T., & Wetherell, G. (2014). The ideological-conflict hypothesis. *Current Directions in Psychological Science*, *23*(1), 27–34. https://doi.org/10.1177/0963721413510932

Breil, S. M., Osterholz, S., Nestler, S., & Back, M. D. (2021). *Contributions of Nonverbal Cues to the Accurate Judgment of Personality Traits* (T. D. Letzring & J. S. Spain, Eds.). Oxford University Press.

Bret, A., Beffara, B., McFadyen, J., & Mermillod, M. (2017). Right wing authoritarianism is associated with race bias in face detection. *PloS One*, *12*(7), e0179894. https://doi.org/10.1371/journal.pone.0179894

Brücker, H., Rother, N., & Schupp, J. (2016). IAB-BAMF-SOEP-Befragung von Geflüchteten: Überblick und erste Ergebnisse [IAB-BAMF-SOEP-Survey on refugees: Overview and first results]. *Politikberatung Kompakt*, *116*. http://hdl.handle.net/10419/149124

Bürkner, P.-C. (2017). brms: An R Package for Bayesian Multilevel Models Using Stan. *Journal of Statistical Software*, *80*(1). https://doi.org/10.18637/jss.v080.i01

Canetti, D., Snider, K. L. G., Pedersen, A., & Hall, B. J. (2016). Threatened or Threatening? How Ideology Shapes Asylum Seekers' Immigration Policy Attitudes in Israel and Australia. *Journal of Refugee Studies*, *29*(4), 583–606. https://doi.org/10.1093/jrs/few012

Caricati, L., Mancini, T., & Marletta, G. (2017). The role of ingroup threat and conservative ideologies on prejudice against immigrants in two samples of Italian adults. *The Journal of Social Psychology*, *157*(1), 86–97. https://doi.org/10.1080/00224545.2016.117655 2

Carpenter, B., Gelman, A., Hoffman, M. D., Lee, D., Goodrich, B., Betancourt, M., Brubaker, M., Guo, J., Li, P., & Riddell, A. (2017). Stan: A Probabilistic Programming Language. *Journal of Statistical Software*, *76*(1). https://doi.org/10.18637/jss.v076.i01

Chiao, J. Y., Bowman, N. E., & Gill, H. (2008). The political gender gap: Gender bias in facial inferences that predict voting behavior. *PloS One*, *3*(10), e3666. https://doi.org/10.1371/journal.pone.0003666

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/fe y062

Craig, M. A., & Richeson, J. A. (2014). Not in My Backyard! Authoritarianism, Social Dominance Orientation, and Support for Strict Immigration Policies at Home and Abroad. *Political Psychology*, *35*(3), 417–429. https://doi.org/10.1111/pops.12078

Czopp, A. M., Monteith, M. J., & Mark, A. Y. (2006). Standing up for a change: Reducing bias through interpersonal confrontation. *Journal of Personality and Social Psychology*, *90*(5), 784–803. https://doi.org/10.1 037/0022-3514.90.5.784

Czymara, C. S., & Schmidt-Catran, A. W. (2017). Refugees unwelcome? Changes in the public acceptance of immigrants and refugees in Germany in the course of Europe's 'immigration crisis.' *European Sociological Review*, *33*(6), 735–751. https://doi.org/1 0.1093/esr/jcx071

Dehshibi, M. M. (2018). *Iranian Face Database (IFDB) - Version 1*. https://doi.org/10.17632/5b4chtvj4g.1

Dehshibi, M. M., & Bastanfard, A. (2010). A new algorithm for age recognition from facial images. *Signal Processing*, *90*(8), 2431–2444. https://doi.org/1 0.1016/j.sigpro.2010.02.015

Dinas, E., Matakos, K., Xefteris, D., & Hangartner, D. (2019). Waking up the golden dawn: Does exposure to the refugee crisis increase support for extreme-right parties? *Political Analysis*, *27*(2), 244–254. https://do i.org/10.1017/pan.2018.48

Dovidio, J. F., Hewstone, M., Glick, P., & Esses, V. M. (Eds.). (2013). *The Sage handbook of prejudice, stereotyping and discrimination* (1. paperback ed.). Sage.

Dovidio, J. F., Schellhaas, F. M. H., & Pearson, A. R. (Eds.). (2019). *Oxford Research Encyclopedia of Psychology*. Oxford University Press.

Duckitt, J. (2006). Differential effects of right wing authoritarianism and social dominance orientation on outgroup attitudes and their mediation by threat from and competitiveness to outgroups. *Personality and Social Psychology Bulletin*, *32*(5), 684–696. http s://doi.org/10.1177/0146167205284282

Duckitt, J., & Fisher, K. (2003). The impact of social threat on worldview and ideological attitudes. *Political Psychology*, *24*(1), 199–222. https://doi.org/1 0.1111/0162-895x.00322

Duckitt, J., & Sibley, C. G. (2009). A dual-process motivational model of ideology, politics, and prejudice. *Psychological Inquiry*, *20*(2–3), 98–109. http s://doi.org/10.1080/10478400903028540

Dunham, Y., Stepanova, E. V., Dotsch, R., & Todorov, A. (2015). The development of race-based perceptual categorization: Skin color dominates early category judgments. *Developmental Science*, *18*(3), 469–483. htt ps://doi.org/10.1111/desc.12228

Dunwoody, P. T., & McFarland, S. G. (2018). Support for anti-Muslim policies: The role of political traits and threat perception. *Political Psychology*, *39*(1), 89–106. https://doi.org/10.1111/pops.12405

Echebarria-Echabe, A., & Fernández-Guede, E. (2006). Effects of terrorism on attitudes and ideological orientation. *European Journal of Social Psychology*, *36*(2), 259–265. https://doi.org/10.1002/ej sp.294

Echterhoff, G., Hellmann, J. H., Back, M. D., Kärtner, J., Morina, N., & Hertel, G. (2020). Psychological Antecedents of Refugee Integration (PARI). *Perspectives on Psychological Science*, *15*(4), 856–879. https://doi.org/10.1177/1745691619898838

Echterhoff, G., Hellmann, J. H., Back, M., Esses, V., & Wagner, U. (2019). Special Issue on "The Social Psychology of Forced Migration and Refugee Integration" in the European Journal of Social Psychology. *European Journal of Social Psychology*, *49*(7), 1337–1343. https://doi.org/10.1002/ejsp.2613

Erickson, M. J. (2013). *Introduction to combinatorics* (2nd ed.). John Wiley & Sons.

Esses, V. M., Dovidio, J. F., Jackson, L. M., & Armstrong, T. L. (2001). The Immigration Dilemma: The Role of Perceived Group Competition, Ethnic Prejudice, and National Identity. *Journal of Social Issues*, *57*(3), 389–412. https://doi.org/10.1111/0022-4537.00220

Feingold, A. (1992). Good-looking people are not what we think. *Psychological Bulletin*, *111*(2), 304–341. https://doi.org/10.1037/0033-2909.111.2.304

Fiske, S. T., Neuberg, S. L., Beattie, A. E., & Milberg, S. J. (1987). Category-based and attribute-based reactions to others: Some informational conditions of stereotyping and individuating processes. *Journal of Experimental Social Psychology*, *23*(5), 399–427. https://doi.org/10.1016/0022-1031(87)90038-2

French, A. R., Franz, T. M., Phelan, L. L., & Blaine, B. E. (2013). Reducing Muslim/Arab stereotypes through evaluative conditioning. *The Journal of Social Psychology*, *153*(1), 6–9. https://doi.org/10.1080/00224545.2012.706242

Funder, D. C. (1999). *Personality judgment: A realistic approach to person perception*. Academic Press.

Galen, L. W., Williams, T. J., & Ver Wey, A. L. (2014). Personality ratings are influenced by religious stereotype and ingroup bias. *The International Journal for the Psychology of Religion*, *24*(4), 282–297. https://doi.org/10.1080/10508619.2013.837658

Gelman, A., & Rubin, D. B. (1992). Inference from iterative simulation using multiple sequences. *Statistical Science*, *7*(4), 457–472. https://doi.org/10.1214/ss/1177011136

Gosling, S. D., Ko, S. J., Mannarelli, T., & Morris, M. E. (2002). A room with a cue: Personality judgments based on offices and bedrooms. *Journal of Personality and Social Psychology*, *82*(3), 379–398. https://doi.org/10.1037//0022-3514.82.3.379

Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology*, *97*(1), 17–41. https://doi.org/10.1037/a0015575

Hager, A., & Veit, S. (2019). Attitudes toward asylum seekers: Evidence from Germany. *Public Opinion Quarterly*, *83*(2), 412–422. https://doi.org/10.1093/poq/nfz023

Hangartner, D., Dinas, E., Marbach, M., Matakos, K., & Xefteris, D. (2019). Does exposure to the refugee crisis make natives more hostile? *American Political Science Review*, *113*(2), 442–455. https://doi.org/10.1017/s0003055418000813

Harris, M. J., & Garris, C. P. (2008). You never get a second chance to make a first impression: Behavioral consequences of first impressions. In N. Ambady & J. J. Skowronski (Eds.), *First impressions* (pp. 147–168). Guilford Press.

Hartley, L. K., & Pedersen, A. (2015). Asylum seekers and resettled refugees in Australia: Predicting social policy attitude from prejudice versus emotion. *Journal of Social and Political Psychology*, *3*(1), 142–160. https://doi.org/10.5964/jspp.v3i1.476

Hastie, R., & Park, B. (1986). The relationship between memory and judgment depends on whether the judgment task is memory-based or on-line. *Psychological Review*, *93*(3), 258–268. https://doi.org/10.1037/0033-295x.93.3.258

Hehman, E., Leitner, J. B., Deegan, M. P., & Gaertner, S. L. (2013). Facial structure is indicative of explicit support for prejudicial beliefs. *Psychological Science*, *24*(3), 289–296. https://doi.org/10.1177/0956797612451467

Hehman, E., Sutherland, C. A. M., Flake, J. K., & Slepian, M. L. (2017). The unique contributions of perceiver and target characteristics in person perception. *Journal of Personality and Social Psychology*, *113*(4), 513–529. https://doi.org/10.1037/pspa0000090

Hess, U., Blairy, S., & Kleck, R. E. (2000). The Influence of Facial Emotion Displays, Gender, and Ethnicity on Judgments of Dominance and Affiliation. *Journal of Nonverbal Behavior*, *24*(4), 265–283. https://doi.org/10.1023/a:1006623213355

Hirschmüller, S., Egloff, B., Nestler, S., & Back, M. D. (2013). The dual lens model: A comprehensive framework for understanding self–other agreement of personality judgments at zero acquaintance. *Journal of Personality and Social Psychology*, *104*(2), 335–353. https://doi.org/10.1037/a0030383

Hoyle, R. H., Pinkley, R. L., & Insko, C. A. (1989). Perceptions of social behavior. *Personality and Social Psychology Bulletin*, *15*(3), 365–376. https://doi.org/10.1177/0146167289153007

Hynie, M. (2018). Refugee integration: Research and policy. *Peace and Conflict: Journal of Peace Psychology*, *24*(3), 265–276. https://doi.org/10.1037/pac0000326

Insko, C. A., & Schopler, J. (1987). Categorization, competition, and collectivity. In C. Hendrick (Ed.), *Group processes* (8th ed., pp. 213–251). Sage.

Islam, M. R., & Hewstone, M. (1993). Dimensions of contact as predictors of intergroup anxiety, perceived out-group variability, and out-group attitude: An integrative model. *Personality and Social Psychology Bulletin*, *19*(6), 700–710. https://doi.org/10.1177/0146 167293196005

Jenkins, R., White, D., Van Montfort, X., & Mike Burton, A. (2011). Variability in photos of the same face. *Cognition*, *121*(3), 313–323. https://doi.org/10.10 16/j.cognition.2011.08.001

Johnson, K. J., & Fredrickson, B. L. (2005). "We All Look the Same to Me": Positive Emotions Eliminate the Own-Race Bias in Face Recognition. *Psychological Science*, *16*(11), 875–881. https://doi.org/10.1111/j.14 67-9280.2005.01631.x

Judd, C. M., Westfall, J., & Kenny, D. A. (2012). Treating stimuli as a random factor in social psychology: A new and comprehensive solution to a pervasive but largely ignored problem. *Journal of Personality and Social Psychology*, *103*(1), 54–69. http s://doi.org/10.1037/a0028347

Kaufmann, M. C., Krings, F., Zebrowitz, L. A., & Sczesny, S. (2017). Age Bias in Selection Decisions: The Role of Facial Appearance and Fitness Impressions. *Frontiers in Psychology*, *8*. https://doi.or g/10.3389/fpsyg.2017.02065

Kenny, D. A. (1994). *Interpersonal perception: A social relations analysis*. Guilford Press.

Kenny, D. A., Kashy, D. A., & Cook, W. L. (2006). *Dyadic data analysis*. Guilford Press.

Kosic, A., & Phalet, K. (2006). Ethnic categorization of immigrants: The role of prejudice, perceived acculturation strategies and group size. *International Journal of Intercultural Relations*, *30*(6), 769–782. http s://doi.org/10.1016/j.ijintrel.2006.06.003

Kotzur, P. F., Forsbach, N., & Wagner, U. (2017). Choose your words wisely. *Social Psychology*, *48*(4), 226–241. https://doi.org/10.1027/1864-9335/a000312

Kotzur, P. F., Friehs, M.-T., Asbrock, F., & Zalk, M. H. W. (2019). Stereotype content of refugee subgroups in Germany. *European Journal of Social Psychology*, *49*(7), 1344–1358. https://doi.org/10.1002/ejsp.2585

Krause, S., Back, M. D., Egloff, B., & Schmukle, S. C. (2014). Implicit Interpersonal Attraction in Small Groups. *Social Psychological and Personality Science*, *5*(6), 671–679. https://doi.org/10.1177/194855061351 7723

Krumhuber, E., Manstead, A. S. R., Cosker, D., Marshall, D., Rosin, P. L., & Kappas, A. (2007). Facial dynamics as indicators of trustworthiness and cooperative behavior. *Emotion*, *7*(4), 730–735. http s://doi.org/10.1037/1528-3542.7.4.730

Lau, S. (1982). The effect of smiling on person perception. *The Journal of Social Psychology*, *117*(1), 63–67. https://doi.org/10.1080/00224545.1982.971340 8

Lazerus, T., Ingbretsen, Z. A., Stolier, R. M., Freeman, J. B., & Cikara, M. (2016). Positivity bias in judging ingroup members' emotional expressions. *Emotion*, *16*(8), 1117–1125. https://doi.org/10.1037/emo000022 7

MacLin, O. H., & Malpass, R. S. (2001). Racial categorization of faces: The ambiguous race face effect. *Psychology, Public Policy, and Law*, *7*(1), 98–118. https://doi.org/10.1037/1076-8971.7.1.98

Mahmud, Y., & Swami, V. (2009). The influence of the hijab (Islamic head-cover) on perceptions of women's attractiveness and intelligence. *Body Image*, *7*(1), 90–93. https://doi.org/10.1016/j.bodyim.2009.09.003

Martinez, J. E., Funk, F., & Todorov, A. (2020). Quantifying idiosyncratic and shared contributions to judgment. *Behavior Research Methods*, *52*(4). https://d oi.org/10.3758/s13428-019-01323-0

Michel, C., Rossion, B., Han, J., Chung, C.-S., & Caldara, R. (2006). Holistic processing is finely tuned for faces of one's own race. *Psychological Science*, *17*(7), 608–615. https://doi.org/10.1111/j.1467-9280.2 006.01752.x

Montepare, J. M., & Zebrowitz, L. A. (1998). Person Perception Comes of Age: The Salience and Significance of Age in Social Judgments. In *Advances in Experimental Social Psychology* (Vol. 30, pp. 93–161). Elsevier. https://doi.org/10.1016/s0065-260 1(08)60383-4

Murray, K. E., & Marx, D. M. (2013). Attitudes toward unauthorized immigrants, authorized immigrants, and refugees. *Cultural Diversity and Ethnic Minority Psychology*, *19*(3), 332–341. https://doi.org/10.1037/a 0030812

Naumann, L. P., Vazire, S., Rentfrow, P. J., & Gosling, S. D. (2009). Personality judgments based on physical appearance. *Personality and Social Psychology Bulletin*, *35*(12), 1661–1671. https://doi.org/10.1177/01461672 09346309

Nestler, S., & Back, M. D. (2013). Applications and extensions of the lens model to understand interpersonal judgments at zero acquaintance. *Current Directions in Psychological Science*, *22*(5), 374–379. https://doi.org/10.1177/0963721413486148

Nestler, S., & Back, M. D. (2017). Using cross-classified structural equation models to examine the accuracy of personality judgments. *Psychometrika*, *82*(2), 475–497. https://doi.org/10.1007/s11336-015-9485-6

Nestler, S., Egloff, B., Küfner, A. C. P., & Back, M. D. (2012). An integrative lens model approach to bias and accuracy in human inferences: Hindsight effects and knowledge updating in personality judgments. *Journal of Personality and Social Psychology*, *103*(4), 689–717. https://doi.org/10.1037/a0029461

Ogan, C., Willnat, L., Pennington, R., & Bashir, M. (2014). The rise of anti-Muslim prejudice. *International Communication Gazette*, *76*(1), 27–46. https://doi.org/10.1177/1748048513504048

Onraet, E., van Hiel, A., Dhont, K., & Pattyn, S. (2013). Internal and external threat in relationship with right-wing attitudes. *Journal of Personality*, *81*(3), 233–248. https://doi.org/10.1111/jopy.12011

Osgood, C. E., Tannenbaum, P. H., & Suci, G. J. (1978). *The measurement of meaning*. University of Illinois.

Paluck, E. L., Green, S. A., & Green, D. P. (2019). The contact hypothesis re-evaluated. *Behavioural Public Policy*, *3*(02), 129–158. https://doi.org/10.1017/bpp.2018.25

Peabody, D. (1970). Evaluative and descriptive aspects in personality perception: A reappraisal. *Journal of Personality and Social Psychology*, *16*(4), 639–646. https://doi.org/10.1037/h0030259

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751–783. https://doi.org/10.1037/0022-3514.90.5.751

Phillips, P. J., Moon, H., Rizvi, S. A., & Rauss, P. J. (2000). The FERET evaluation methodology for face-recognition algorithms. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *22*(10), 1090–1104. https://doi.org/10.1109/34.879790

Phillips, P. J., Wechsler, H., Huang, J., & Rauss, P. J. (1998). The FERET database and evaluation procedure for face-recognition algorithms. *Image and Vision Computing*, *16*(5), 295–306. https://doi.org/10.1016/s0262-8856(97)00070-x

Polk, J., Rovny, J., Bakker, R., Edwards, E., Hooghe, L., Jolly, S., Koedam, J., Kostelka, F., Marks, G., Schumacher, G., Steenbergen, M., Vachudova, M., & Zilovic, M. (2017). Explaining the salience of anti-elitism and reducing political corruption for political parties in Europe with the 2014 Chapel Hill Expert Survey data. *Research & Politics*, *4*(1), 205316801668691. https://doi.org/10.1177/2053168016686915

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

R Core Team. (2018). R: A language and environment for statistical computing. *R. Found. Stat. Comput.*, *1*.

Rau, R., Carlson, E. N., Back, M. D., Barranti, M., Gebauer, J. E., Human, L. J., Leising, D., & Nestler, S. (2021). What is the structure of perceiver effects? On the importance of global positivity and trait-specificity across personality domains and judgment contexts. *Journal of Personality and Social Psychology*, *120*(3), 745–764. https://doi.org/10.1037/pspp0000278

Rau, R., Nestler, W., Dufner, M., & Nestler, S. (2020). Seeing the best or worst in others: A measure of generalized other-perceptions. *Assessment*. Advance online publication. https://doi.org/10.1177/1073191120905015

Reis, H. T., Wilson, I. M., Monestere, C., Bernstein, S., Clark, K., Seidl, E., Franco, M., Gioioso, E., Freeman, L., & Radoane, K. (1990). What is smiling is beautiful and good. *European Journal of Social Psychology*, *20*(3), 259–267. https://doi.org/10.1002/ejsp.2420200307

Rhodes, G., Zebrowitz, L. A., Clark, A., Kalick, S. M., Hightower, A., & McKay, R. (2001). Do facial averageness and symmetry signal health? *Evolution and Human Behavior*, *22*(1), 31–46. https://doi.org/10.1016/s1090-5138(00)00060-x

Richeson, J., Dovidio, J. F., Shelton, J. N., & Hebl, M. (2007). Implications of Ingroup-Outgroup Membership for Interpersonal Perceptions: Faces and Emotion. In U. Hess & P. Philippot (Eds.), *Group Dynamics and Emotional Expression* (pp. 7–32). Cambridge University Press. https://doi.org/10.1017/cbo9780511499838.002

Saleem, M., & Anderson, C. A. (2013). Arabs as terrorists: Effects of stereotypes within violent contexts on attitudes, perceptions, and affect. *Psychology of Violence*, *3*(1), 84–99. https://doi.org/10.1037/a0030038

Sanbonmatsu, D. M., Sherman, S. J., & Hamilton, D. L. (1987). Illusory correlation in the perception of individuals and groups. *Social Cognition*, *5*(1), 1–25. https://doi.org/10.1521/soco.1987.5.1.1

Schopler, J., & Insko, C. A. (1992). The discontinuity effect in interpersonal and intergroup relations: Generality and mediation. *European Review of Social Psychology*, *3*(1), 121–151. https://doi.org/10.1080/14792779243000041

Schweitzer, R., Perkoulidis, S., Krome, S., Ludlow, C., & Ryan, M. (2005). Attitudes towards refugees: The dark side of prejudice in Australia. *Australian Journal of Psychology*, *57*(3), 170–179. https://doi.org/10.1080/00049530500125199

Sears, D. O. (1983). The person-positivity bias. *Journal of Personality and Social Psychology*, *44*(2), 233–250. https://doi.org/10.1037/0022-3514.44.2.233

Senft, N., Chentsova-Dutton, Y., & Patten, G. A. (2016). All smiles perceived equally: Facial expressions trump target characteristics in impression formation. *Motivation and Emotion*, *40*(4), 577–587. https://doi.org/10.1007/s11031-016-9558-6

Sibley, C. G., & Duckitt, J. (2009). Big-five personality, social worldviews, and ideological attitudes: Further tests of a dual process cognitive-motivational model. *The Journal of Social Psychology*, *149*(5), 545–561. https://doi.org/10.1080/00224540903232308

Six, B., Wolfradt, U., & Zick, A. (2001). Autoritarismus und soziale Dominanzorientierung als generalisierte Einstellungen [Authoritarianism and social dominance orientation as generalized attitudes]. *Zeitschrift für Politische Psychologie*, *9*, 23–40.

Stan Development Team. (2017). *Stan: A C++ library for probability and sampling*. http://mc-stan.org/

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33–48). Brooks Cole.

Tanaka, J. W., Kiefer, M., & Bukach, C. M. (2004). A holistic account of the own-race effect in face recognition: Evidence from a cross-cultural study. *Cognition*, *93*(1), B1–B9. https://doi.org/10.1016/j.cognition.2003.09.011

Todorov, A., Olivola, C. Y., Dotsch, R., & Mende-Siedlecki, P. (2015). Social attributions from faces: Determinants, consequences, accuracy, and functional significance. *Annual Review of Psychology*, *66*(1), 519–545. https://doi.org/10.1146/annurev-psych-113011-143831

Todorov, A., Said, C. P., Engell, A. D., & Oosterhof, N. N. (2008). Understanding evaluation of faces on social dimensions. *Trends in Cognitive Sciences*, *12*(12), 455–460. https://doi.org/10.1016/j.tics.2008.10.001

Tracy, R. E., Wilson, J. P., Slepian, M. L., & Young, S. G. (2020). Facial trustworthiness predicts ingroup inclusion decisions. *Journal of Experimental Social Psychology*, *91*, 104047. https://doi.org/10.1016/j.jesp.2020.104047

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

Van Prooijen, J.-W., Krouwel, A. P. M., & Emmer, J. (2018). Ideological responses to the EU refugee crisis: The left, the right, and the extremes. *Social Psychological and Personality Science*, *9*(2), 143–150. https://doi.org/10.1177/1948550617731501

Vehtari, A., Gelman, A., Simpson, D., Carpenter, B., & Bürkner, P. - C. (2019). *Rank-normalization, folding, and localization: An improved $\widehat{R}$ for assessing convergence of MCMC*. https://arxiv.org/abs/1903.08008

Vigil, J. M. (2010). Political leanings vary with facial expression processing and psychosocial functioning. *Group Processes & Intergroup Relations*, *13*(5), 547–558. https://doi.org/10.1177/1368430209356930

Vize, C. E., Collison, K. L., Miller, J. D., Lynam, D. R., & Back, M. (2018). Examining the effects of controlling for shared variance among the dark triad using meta-analytic structural equation modeling. *European Journal of Personality*, *32*(1), 46–61. https://doi.org/10.1002/per.2137

Wagner, G. G., Frick, J. R., & Schupp, J. (2007). The German Socio-Economic Panel Study (SOEP): Scope, evolution and enhancements. *Schmollers Jahrbuch*, *127*(1), 139–169. https://doi.org/10.2139/ssrn.1028709

Walker, M., & Wänke, M. (2017). Caring or daring? Exploring the impact of facial masculinity/femininity and gender category information on first impressions. *PloS One*, *12*(10), e0181306. https://doi.org/10.1371/journal.pone.0181306

Weeks, M., & Vincent, M. A. (2007). Using religious affiliation to spontaneously categorize others. *International Journal for the Psychology of Religion*, *17*(4), 317–331. https://doi.org/10.1080/10508610701572846

Westfall, J., Kenny, D. A., & Judd, C. M. (2014). Statistical power and optimal design in experiments in which samples of participants respond to samples of stimuli. *Journal of Experimental Psychology: General*, *143*(5), 2020–2045. https://doi.org/10.1037/xge0000014

Wickham, H., & Grolemund, G. (2016). R for data science. In *Data science with R* (p. 522). Oreilly & Associates Inc.

Willis, J., & Todorov, A. (2006). First impressions: Making up your mind after a 100-ms exposure to a face. *Psychological Science*, *17*(7), 592–598. https://doi.org/10.1111/j.1467-9280.2006.01750.x

Wilson, M. S., & Sibley, C. G. (2013). Social dominance orientation and right-wing authoritarianism: Additive and interactive effects on political conservatism. *Political Psychology*, *34*(2), 277–284. https://doi.org/10.1111/j.1467-9221.2012.00929.x

Wood, D., Harms, P., & Vazire, S. (2010). Perceiver effects as projective tests: What your perceptions of others say about you. *Journal of Personality and Social Psychology*, *99*(1), 174–190. https://doi.org/10.1037/a0019390

Young, S. G., Hugenberg, K., Bernstein, M. J., & Sacco, D. F. (2012). Perception and motivation in face recognition: A critical review of theories of the Cross-Race Effect. *Personality and Social Psychology Review*, *16*(2), 116–142. https://doi.org/10.1177/1088868311418987

Young, S. G., Slepian, M. L., & Sacco, D. F. (2015). Sensitivity to perceived facial trustworthiness is increased by activating self-protection motives. *Social Psychological and Personality Science*, *6*(6), 607–613. https://doi.org/10.1177/1948550615573329

Zebrowitz, L. A., & Montepare, J. M. (2008). First impressions from facial appearance cues. In N. Ambady & J. J. Skowronski (Eds.), *First impressions* (pp. 171–204). Guilford Press.

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