1 **Prejudice towards refugees predicts social fear of crime**

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Prejudice towards refugees predicts social fear of crime

Abstract

Research suggests that social fear of crime and prejudice towards minority groups may be linked. We investigated (N_{total} = 7,712) whether prejudice towards a social group that is stereotyped as more criminal (refugees) is more strongly associated with social fear of crime than prejudice towards a group that is less (homosexual individuals); and whether prejudice predicts social fear of crime or vice versa. We used a mixed-method approach to show that refugees are stereotyped as more criminal than homosexual individuals (Pretest). Subgroup characteristics of the criminally-stereotyped group, such as country of origin (Study 1a) and flight motive (Study 1b) of refugees, qualified the prejudice-fear of crime link. Finally, whereas prejudice towards refugees predicted social fear of crime over time more strongly than vice versa, prejudice towards homosexual individuals did not (Study 2). Our results have important theoretical and practical implications suggesting prejudice reduction towards refugees as a criminally-stereotyped group as a potential pathway to reduce social fear of crime.

Keywords: social fear of crime; prejudice; refugees; homosexual individuals

Prejudice towards refugees predicts social fear of crime

The fear of crime is a multi-faceted construct on researchers' agendas since the 1970s. Although fear of crime can be diffuse and includes fear of various offenses (e.g., assault, robbery, burglary, or drug offenses), fear of crime encapsulates perceived threats to safety along at least two empirically distinct dimensions (Frevel, 1999): *Social* fear of crime, defined as the subjective fear or worry about crime as a problem for society; and *personal* fear of crime, which describes the fear or worry to become a crime victim oneself (Armborst, 2017).

Whereas the study of causes of personal fear of crime has been thriving (Amerio & Roccato, 2005), there is still much to learn about drivers of social fear of crime. Doing so is important because, firstly, social fear of crime reflects a broader expression about cultural and social significance of crime in society, and thus indicates how people make sense of the world (Jackson, 2004). Secondly, excessive social – just like personal – fear of crime can negatively impact people's individual and

community behaviours, and can erode social cohesion and solidarity (Amerio & Roccato, 2005). Finally, social fear of crime can also fuel or be leveraged for support of specific policies which balance security against liberty (Jackson, 2006). Thus, identifying predictors and boundary conditions under which predictors exert the largest effect is of high value to practitioners, policy makers and researchers alike and can inform interventions aiming at effectively reducing social fear of crime. The present research contributes to these goals. We aimed to show that social fear of crime and prejudice towards refugees, a criminally-stereotyped minority, are intimately linked, and contribute to the debate whether prejudice serves as a predictor of social fear of crime or vice versa.

Prejudice can be defined as bearing or displaying attitudes, emotions, and/or behaviors that directly or indirectly imply negativity towards a social group (Brown, 2011). Previous research has shown that White US Americans who harbor more prejudice towards Black US Americans also report higher personal fear of crime (e.g., Skogan, 1995). European data suggests that Germans who hold more negative views about immigrants (Fitzgerald et al., 2012) also tend to report more personal fear of crime. Thus, personal fear of crime and prejudice towards a range of minorities co-occur, which we argue may extend to the social domain as well, which we elaborate more on below.

We offer the first empirical investigation of the link between prejudice and *social* (rather than personal) fear of crime. Additionally, we aim to test whether cultural stereotypes serve as a factor qualifying the link between prejudice and social fear of crime. Cultural stereotypes are societally shared beliefs and assumptions about a group (Ashmore & Del Boca, 1981). One such belief or assumption relates to a minority groups' proneness to commit crimes (Devine, 1989), with some minority groups commonly believed to be more criminal than others (Chiricos et al., 2004). We propose that the cultural stereotypes of minority groups are important contributors to the degree to which prejudice towards the respective minority group in question and social fear of crime are linked. We argue that the more a minority group is stereotyped as criminal, the stronger the association between prejudice and social fear of crime.

We test this hypothesis with a focus on refugees. Refugees are a minority group of increasing social relevance in Europe, the US, and many other parts of the world (Kotzur et al., 2022). This is

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also the case in Germany, where our studies have been conducted, which has become a major refugee-receiving country among European Union member states since 2015 (*Annual Asylum Statistics*, n.d.), with many refugees stemming from Syria, Afghanistan, Eritrea, (*Asylzahlen im Juli 2024*, n.d.) and – most recently – also Ukraine. Although some evidence suggests that refugees are perceived as vulnerable and in need (Kotzur et al., 2017), indirect evidence suggests that refugees are often associated with negative traits, including crime: it has been argued that refugees are primarily perceived to be male and a threat committing aggressive and criminal acts, such as terrorism or rape (Rettberg & Gajjala, 2016). According to threat theories (Cottrell & Neuberg, 2005; Stephan & Stephan, 2000), immigrant groups can elicit a range of different threats, including threats to safety (Cottrell & Neuberg, 2005). A recent study found a positive associations between prejudice towards refugees and perceived safety threat originating from concerns about criminal acts (Landmann et al., 2019). Representative surveys from Germany suggest that a majority fears a rise in crime as a result of immigration of refugees (*Sorgen über die Folgen der Flüchtlingszuwanderung nach Deutschland 2017*, n.d.; *Zwischenbilanz zur deutschen Flüchtlingspolitik 2018*, n.d.). Finally, perceptions that the world is a dangerous place – broadly mapping on social fear of crime – correlate with prejudice towards immigrant groups (Duckitt, 2001). Taken together, these studies and surveys provide initial (albeit indirect) evidence that refugees are generally stereotyped as criminal, and, we argue, that endorsing prejudice towards this group should thus be very closely associated with worry about crime in society, i.e., social fear of crime.

Investigating to what extent prejudice towards a more criminally-stereotyped group is more strongly associated with fear of crime than other groups requires a contrast with a less criminally-stereotyped comparison group. Homosexual people are a good candidate for this. The group's cultural stereotypes focus on sex role definitions deviating from heterosexuals (Taylor, 1983), where homosexual men are stereotyped to be more feminine than heterosexual men, and vice versa for homosexual women. (Sexual) health is another prominent dimension of cultural stereotypes, often linking homosexual individuals to sexually-transmitted diseases (Cottrell & Neuberg, 2005; Rice et al., 2022), and threats to values (rather than safety; Stephan & Stephan, 2000). We know of no

contemporary literature suggesting that homosexual individuals – male or female – are commonly associated with crime (see, e.g., Duckitt & Sibley, 2007). Thus, we hypothesized that refugees are culturally stereotyped as more criminal than homosexual people, and we argue that endorsing prejudice towards this group should thus be less closely associated with social fear of crime than endorsing prejudice towards refugees.

A further open question is whether prejudice towards minorities, in our case refugees, predicts social fear of crime more dominantly, or vice versa. In order to establish predictor-outcome relationships between constructs, the predictor variable needs to precede the outcome variable temporally (Shadish et al., 2002). Existing studies on prejudice and social fear of crime are of cross-sectional nature. Such designs are not suited to test predictor-outcome relationships. Few existing longitudinal studies focused on testing longitudinal effects of *personal* fear of crime on time-lagged prejudice (Fitzgerald et al., 2012), leaving the reversed time-lagged relationship untested, and thus providing no empirical basis for theorizing about the directionality of the relationship between prejudice and 'its relative', *social* fear of crime.

Theoretically, there are good reasons to assume social fear of crime could be the predictor of prejudice. Several theoretical accounts and empirical examinations in related literature streams suggest that fear, anxiety, and perceived threat contribute to increased prejudice levels (Cottrell & Neuberg, 2005; Landmann et al., 2019; Schlueter et al., 2008; Sinclair et al., 2024; Stephan & Stephan, 2000). Therefore, it is plausible to assume that social fear of crime – a non-group specific generalized fear or worry about crime in society, but still a fear or worry – fuels hostility towards minorities. However, the idea that prejudice contributes to social fear of crime levels is equally conceivable. Indeed, prejudice may provide a filter through which people understand their environment (Jackson et al., 2017). For instance, researchers suggested (yet did not test) that the reason why White US-Americans express more personal fear of crime with higher proportions of Blacks is because stereotypes influence perceptions of crime levels (Quillian & Pager, 2010). We suggest that the same can be argued about perceptions of crime on a societal level.

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Longitudinal designs can help to establish whether prejudice towards refugees may be contributing to subjectively perceived social fear of crime over time and/or vice versa. This is important, because evidence for prejudice-effects on social fear of crime would suggest a way in which social fear of crime could be leveraged, or, alternatively, could lay the groundwork for designing interventions aiming at reducing social fear of crime via prejudice reductions towards refugees or other criminally-stereotyped minority groups. This would be good news, given that fear of crime is associated with important individual and community behaviors, as well as societal cohesion (Amerio & Roccato, 2005). Thus, such interventions could potentially foster outcomes beneficial for individuals and society at large. Evidence for fear of crime-effects on prejudice would be of equal value, as this would provide novel evidence for how people make sense of the world and suggest that alternative ways to affect social fear of crime are needed.

In this paper, we investigated (a) whether endorsing prejudice towards a more criminally-stereotyped social group is more strongly associated with social fear of crime than endorsing prejudice towards a less criminally-stereotyped social group; and (b) the dominant direction of the refugee prejudice-social fear of crime link. We first used a mixed-method approach to examine to what extent refugees are stereotyped as more criminal than homosexual people (Pretest; $N = 300$). Next, we examined to what degree subgroup characteristics of refugees as the more criminally-stereotyped group, namely country of origin (Study 1a; $N = 1,661$) and flight motive (Study 1b; $N = 4,859$) of refugees, qualified the prejudice-fear of crime link. Finally, we examined the directionality of the link between prejudice towards refugees and homosexual individuals and social fear of crime (Study 2; $N = 897$). Together, the results contribute to the understanding of the relationship between prejudice and social fear of crime and important qualifiers of this relationship.

Pretest

Studying the above research questions requires knowledge about the cultural stereotypes concerning the social groups investigated. Systematic studies investigating the cultural stereotypes of refugees and homosexual individuals regarding perceived proneness to criminality is, however,

lacking. This pretest provided this groundwork. We hypothesized that refugees are culturally stereotyped as more criminal than homosexual individuals.

Methods

All data collections complied with current APA Ethical Principles of Psychologists and Code of Conduct. We received ethical clearance from the institutional review board of Osnabrück University. We report all manipulations, measures, and exclusions, when applicable, across all studies. For online supplementary materials (OSMs), including syntaxes, data, and codebooks, see https://osf.io/h7uva/. None of our studies were pre-registered.

Sample and Procedure

We recruited $N = 300$ adults April–May 2019 in public places in three mid-sized German university towns. Undergraduate student recruiters approached every fourth passing person to reduce selection effects. Participants were offered 4.00€ and inclusion into a raffle (1x100.00€) for participating in a paper-and-pencil questionnaire introduced as a study on "societal topics". Participants were 95.7% German nationals; 58.3% females, 0.3% of other genders; $M_{age} = 33.59$, $SD_{age} = 14.79$; 58.30% with upper-secondary level or higher educational background[1]. 59.3% lived in small to big cities. Three participants self-identified as refugees, six as homosexual. Since we were interested in cultural (societally shared) stereotypes, we included them in all analyses. Result patterns excluding these participants did not differ. Sensitivity analyses using G*power 3.1.9.7 (Faul et al., 2009, $\alpha_{\text{two-sided}} = .05$) revealed that the sample size was sufficient to detect differences between two dependent means with $dz = .15$ with adequate power, .83.

Measures

Open-ended stereotype measure

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[1] Upper secondary level is a Gymnasium degree (Secretariat of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany, 2019, pp. 5– 6).

Participants were requested to list up to five stereotypes prevalent in German society about refugees and homosexual people in an open-ended format with five numbered lines. The formulation of the question was inspired by Fiske et al. (2002), shown to lead to less filtered sharing of stereotypes than when participants are asked about personal views (Kotzur et al., 2020).

Closed-ended criminal cultural stereotype measure

We adapted Fiske et al.'s (2002) instruction to ask on a scale from *1 – not at all* to *7 – completely*: "From the perspective of most Germans, how criminal are [refugees/homosexuals]"? We embedded these items in a list of other traits and measures to distract from our primary interest in this measure.

Results

We conducted a quantitative content analysis (White & Marsh, 2006) of open responses. Two coders screened these to check whether crime-related aspects were mentioned, Cohen's $\kappa_{refugees}$ = .865, and, $\kappa_{homosexual\ people}$ = .837. Disagreements were resolved by discussion. Example codes included 'criminal', 'thieves', for refugees, and 'criminal', 'pedophile' for homosexual people. Participants named M = 4.327, SD = 1.001 (range = 0-5) cultural stereotypes for refugees, and M = 3.660, SD = 1.338 (range = 0-5) for homosexual individuals. We created 'criminality indicators' for refugees and homosexual people, 1 = participant mentioned criminality, 0 = participant did not. A paired sample t-test using these indicators using IBM-SPSS 27 showed, as expected, that more participants used criminality-related words for refugees, M = 0.600, SD = 0.491 (60% of participants), compared to homosexual people, M = .027, SD = .161 (2.7% of participants), ΔM = .573, ΔSD = 0.509, 95%CI [0.516; 0.631], $t(299)$ = 19.520, $p < .001$, d = 0.509, a medium-sized effect.

We additionally conducted a paired sample t-test on the closed-ended measure. As expected, participants associated refugees, M = 4.90, SD = 1.444, more with crime than homosexual people, M = 2.12, SD = 1.145, ΔM = 2.776, ΔSD = 1.963, 95%CI[2.553; 2.999], $t(298)$ = 24.456, $p < .001$, d = 1.93, a large effect.

Discussion

This was the first systematic investigation of cultural stereotypes of refugees and homosexual people regarding perceived proneness to criminality. Although caution is advised regarding generalizability to the German population as a whole, the data provided a solid empirical base, as both the open-ended question without any criminality-prompts and the closed-question produced similar results: refugees were perceived as more criminal than homosexual individuals.

Study 1a and 1b

Across cross-sectional Study 1a ($N = 1,661$) and 1b ($N = 4,859$), we tested the association between prejudice towards refugee sub-groups and social fear of crime. Previous research has suggested that prejudice towards refugees is mentally organized along subgroup attributes, separating more socially preferred subgroups of refugees from those who are less (Bansak et al., 2016; Kotzur et al., 2017, 2019). Country of origin and flight motive have been suggested to be prominent dimensions along which people tend to differentiate refugee subgroups and which evoke differential subgroup evaluations.

Legally, Ukrainian refugees were granted a special status in Germany at the time of conducting the study: They were treated like EU citizens, and thus not required to formally apply for asylum, and received a more generous allowance ('Bürgergeld') from the get-go if they were not active in the labor market, like any other non-working citizen (Bundesregierung, 2024). This is not the case for refugees from other countries. Psychologically, Ukrainian refugees are also perceived more benevolently than Syrian, Afghan, or Yemeni refugees, for instance (De Coninck, 2022; Echterhoff et al., 2023; Sinclair et al., 2024). This is likely because Ukrainians are seen as less culturally distant, less of a criminal or other threat to society than refugees from other countries (Karic et al., 2025; Sinclair et al., 2024), and more deserving of help (De Coninck, 2022). In contrast, refugees from other origins are publicly discussed more as (potential) perpetrators of crime, particularly refugees from African origin (Stürmer et al., 2019; Wigger et al., 2022). Thus, social fear of crime may be less strongly associated with prejudice towards Ukrainian refugees than with prejudice from refugees from other countries. Previous studies found that refugees fleeing due to war or political persecution to be perceived more positively than those fleeing for economic reasons (Bansak et al., 2016; Kotzur et al.,

2017, 2019). This may be because fleeing for economic reasons is not covered by any convention, which might be seen as 'illegal' by some. Therefore, social fear of crime may be more strongly associated with prejudice towards refugees fleeing for economic than for other reasons.

Thus, we tested whether the prejudice-social fear of crime link might be qualified by prominent characteristics of refugees: country of origin (Study 1a) and flight motive (Study 1b). In Study 1a, we tested whether this link was less pronounced for Ukrainian refugees compared to refugees from other countries. In Study 1b, we tested whether fleeing due to war was less associated with social fear of crime than fleeing due to economic reasons. We also explored to what extent political persecution, a core flight motive for refugees, might differently be associated to social fear of crime than fleeing due to war or economic reasons (Bansak et al., 2016). Results of these studies will contribute important nuance to the understanding of the relationship between prejudice towards refugees and social fear of crime.

Study 1a: Methods

We received ethical clearance from the institutional review board of the psychology department of the University of Marburg.

Sample and Procedure

We recruited $N = 1,702$ adults in October 2022 through a professional recruiting agency to participate in a factorial online survey. To reach a sample as representative of the German adult population as possible, quotas were applied for gender, federal state, and town/city size. For an overview over key demographic composition markers of the samples of Study 1a and 1b and how they compare to population data, see OSM-Table 1. The country of origin of refugees presented in the prejudice measure was a between-subject factor (1 = Ukraine, 2 = Syria, 3 = Afghanistan, 4 = Kosovo, 5 = Eritrea), all other measures were identical across factors. Since we were interested in intergroup perceptions, we excluded participants from analyses who reported a flight biography, $n = 36$. Result patterns including these participants did not differ. We also excluded $n = 4$ participants self-identifying as gender diverse to be able to use gender as a covariate (Cowling et al., 2019; Hale,

1996) and those providing no answer to any of our variables, $n = 37$. The final sample consisted of $N = 1,661$ eligible participants, $n = 332$ evaluating Ukrainian, $n = 339$ Syrian, $n = 336$ Afghan, $n = 333$, Kosovarian, and $n = 321$ Eritrean refugees. Participants were 49.7% females; $M_{age} = 45.21$ years, $SD_{age} = 14.21$, 18-69 years; 25.4% with migration background; 55.63% an upper-secondary level degree or higher, and 1.2% a different educational degree; 46.54% lived in cities with more than 50,000 inhabitants. Sensitivity analyses using G*power 3.1.9.7 (Faul et al., 2009, $\alpha_{\text{two-sided}} = .05$) revealed that the sample size was sufficient to detect an R^2 increase with a small effect size of $f^2 = 0.02$ for our most complex model (4 tested predictors, a total of 11 predictors in the model) with adequate power, 1.00.

Measures

Prejudice

We used a one-item feeling thermometer (Iyengar et al., 2012) to ask participants on a scale from 0% - *very cold*, to 100% - *very warm*, to indicate how "they generally feel towards refugees from [country]." We inverted scores so that higher values reflect more prejudice.

Social fear of crime

We adapted Mears et al.'s (2009) two-item scale to ask participants to indicate their agreement on a 5-point scale form *1 – completely disagree*, to *5 – completely agree*, to the following statements: "In Germany, crime is a problem to be taken seriously", "In my town/community, crime is a serious problem", $r = .504$, $p < .001$.

Study 1a: Results

Descriptive statistics are summarized in OSM-Table 2. To test whether the relationship between prejudice towards refugees as a criminally-stereotyped group and social fear of crime might be qualified by refugees' country of origin, we conducted hierarchical multiple linear regression to predict fear of crime using list-wise deletion of missings, excluding $n = 4$ participants. Results are summarized in table 1.

-Table 1-

We controlled for gender, age, and education in this and all subsequent studies, as they are known correlates of prejudice and fear of crime (Cowling et al., 2019; Hale, 1996; Wilson, 1996) potentially artificially inflating their association. Education was binary coded: 0 = below, 1 = equal and above upper-secondary level. Model 1 contained the demographical variables only. Model 2 added prejudice and country of origin (condition variable) as predictors. Since the country-of-origin variable was composed of multiple categories, we included the variable in a dummy-coded fashion, with Ukraine as the reference category. Model 3 added interactions between dummy-coded condition variables and centered prejudice. Although ΔR^2 did not significantly improve from Model 2 to Model 3, we report Model 3 results given a significant interaction effect. In Model 3, prejudice was as expected positively associated with social fear of crime, $b = .006$, $SE = 0.002$, 95%CI [0.002, 0.009], $\beta = .161$, $p = .003$. Prejudice and social fear of crime were more closely associated when participants reported prejudice towards refugees from Eritrea compared to refugees from Ukraine, $b = .161$, $SE = .074$, 95%CI [0.016, 0.307], $\beta = .071$, $p = .029$. Simple slope analyses revealed the relationship between prejudice towards Ukrainian refugees and social fear of crime was positive and significant, $b = .057$, $p = .003$. The gradient of the slope for prejudice towards Eritrean refugees was also positive and significant, but the relationship between prejudice and social fear of crime was stronger than for Ukrainian refugees, $b = .218$, $p = .001$. This moderation is illustrated in Figure 1. The model's explanatory power was small ($R^2 = 0.064$), suggesting that while significant, these relationships accounted for a modest proportion of the variance.

-Figure 1-

Study 1b: Methods

We received ethical clearance from the institutional review board of the psychology department of the University of Marburg. For data and codebook, see https://search.gesis.org/research_data/ZA5280.

Sample and Procedure

Data stemmed from the German General Social Survey 2021 (GESIS - Leibniz-Institut für Sozialwissenschaften, 2022), a mixed-mode survey based on random samples of the German adult population. $N = 5,342$ adults participated June-August 2021. For more details about recruitment, see https://search.gesis.org/research_data/ZA5280. This survey had a within-person design, i.e., all participants answered all items relevant to our research question.

Since there were no indicators regarding people's flight biographies, all participants were kept in for analyses, except for three participants self-identifying as gender diverse (to be able to use gender as a covariate) and those who did not provide answers to any of the variables we were interested in, $n = 483$. The final sample consisted of $N = 4,859$ eligible participants, 49.1% females, 50.9% males; $M_{age} = 53.25$ years, $SD_{age} = 17.644$, 18-96 years; 88.6% born in Germany, 0.4% no answer; 46.6% an upper secondary degree or higher, 0.3% were still pupils, and 1.2% received a different educational degree or provided no answer; 40.0% lived in places with more than 50,000 inhabitants, 3.3% provided no answer. Given the sample size, we did not run a sensitivity analysis.

Measures

Prejudice

We used the following items ranging from 1 – *immigration should be possible unrestrictedly*, 2 – *immigration should be limited*, 3 – *immigration should be stopped*, which were introduced as follows: "In the following, we are going to ask you about the immigration of different societal groups to Germany. What is your attitude about this?". We used "What about refugees from countries of war?" as a measure of prejudice towards refugees fleeing due to war, "And what about refugees, who are persecuted politically in their native country?" as a measure of prejudice towards refugees fleeing due to political prosecution, and "And what about refugees, who come to Germany due to financial problems in their native countries?" as a measure of prejudice towards refugees fleeing due to economic reasons.

Social fear of crime

We used the item: "Please think now about the development of crime in Germany. Would you say that criminality in Germany in the past few years…" Participants were asked to answer on a scale from 1 - *has increased strongly* to 5 – *has decreased strongly*. This item was inverted so that higher values reflect more fear of crime.

Results

Descriptive statistics are summarized in OSM-Table 3. To test whether the relationship between prejudice and social fear of crime might be qualified by perceived flight motive, we conducted hierarchical multiple linear regression to predict social fear of crime and tested whether the size of the regression coefficients of prejudice towards refugees indicators varying in their flight motives were significantly different from one another. All eligible participants entered analyses. Results are summarized in table 2.

-Table 2-

Model 1 contained the demographical control variables only. Education was coded like in Study 1. Model 2 added the three prejudices towards refugees' variables simultaneously, each indicating prejudice towards refugees with a different flight motive. In Model 2 all prejudice variables were as expected positively associated with social fear of crime. Prejudice towards war refugees had the weakest association, $b = 0.084$, $SE = 0.030$, $95\%CI[0.026, 0.142]$, $\beta = .050$, $p = .005$, followed by prejudice towards refugees fleeing due to economic reasons, $b = 0.169$, $SE = 0.024$, $95\%CI[0.122, 0.217]$, $\beta = .110$, $p < .001$, and fleeing due to political persecution, $b = 0.300$, $SE = 0.028$, $95\%CI[0.246, 0.355]$, $\beta = .190$, $p < .001$. To probe whether the sizes of the regression coefficients differed significantly, we inspected the overlap of their confidence intervals. Non-overlap signifies significant difference, yet overlap does not imply non-significant difference (Schenker & Gentleman, 2001) requiring a z-test to determine whether the difference is significant. Thus, we conducted a z-test testing for significant difference of coefficients using Daniel Soper's tool (https://www.danielsoper.com/statcalc/calculator.aspx?id=104) whenever confidence intervals overlapped. Non-overlapping confidence intervals indicated that prejudice towards refugees fleeing

due to political persecution was significantly more strongly related to social fear of crime than prejudice towards refugees due to economic reasons. Non-overlapping confidence intervals also indicated that prejudice towards refugees fleeing due to political persecution was significantly more strongly related to social fear of crime than prejudice towards war refugees. Although confidence intervals overlapped, prejudice due to economic reasons was significantly more strongly associated with social fear of crime than prejudice due to war, $z = 3.018$, $p = .003$. The model's explanatory power was small ($R^2 = 0.161$), suggesting that while significant, these relationships accounted for a modest proportion of the variance.

Study 1a and 1b: Discussion

In Study 1a, we found that the association between social fear of crime and prejudice is less pronounced for Ukrainian compared to Eritrean refugees. Previous research evidenced that refugees from Eritrea are less welcomed in Germany than groups from other countries (Kotzur et al., 2019). For instance, in Germany, media portrayals have been suggested to have aided direct attributions of engaging in sexual assaults to the cultural background of perpetrators after the so-called "New Years assaults", with an outsized focus on suspects from African origin (Stürmer et al., 2019; Wigger et al., 2022). Other countries of origins were not differentially associated with social fear of crime, despite the uniquely favorable treatment of Ukrainian refugees in Germany. Thus, instead of particularly benevolent perceptions setting Ukrainians apart, it might be that particularly unfavorable perceptions set Eritreans apart; particularly high perceptions of criminal and perhaps other threats, in conjunction with particular high cultural distance (Sinclair et al., 2024) may be credited for an increased link between social fear of crime and prejudice for Eritreans in particular.

Moreover, we showed in Study 1b that the association between social fear of crime and prejudice is qualified by refugees' perceived flight motives. As expected, fleeing due to war contributed less strongly to social fear of crime compared to fleeing due to economic reasons. Economic reasons are not classified as a reason to be granted refugee status, and migrating for these reasons is likely more closely associated with higher proneness to engage in illegal activity than

migrating for legally sanctioned reasons. Surprisingly, political persecution contributed most strongly to social fear of crime levels. We discuss these unexpected findings further in the general discussion.

Thus, overall, Study 1a and 1b suggest that the association between social fear of crime and prejudice is qualified by the country of origin and the perceived flight motive. A limitation of our studies thus far was that, in Study 1a, the ΔR^2 of a model not including any interaction effects to a model including interaction effects was not significant. Thus, including the significant interaction did not significantly improve the model's explanatory power, and hence subgroup distinctions in terms of country of origin may add statistically significant, but small amounts of additional information. Indeed, while the predictors we report on were significant, the models across both studies accounted for modest proportions of variance. A final limitation of all our studies thus far was that they were cross-sectional, and thus do not allow for any conclusions regarding the direction of effects. We turn to the latter issue in Study 2.

Study 2

Study 2 tested whether (a) prejudice towards refugees is more strongly associated with social fear of crime than prejudice towards homosexual people; and (b) the dominant direction of the prejudice-social fear of crime link.

Methods

We received ethical clearance from the institutional review board of Osnabrück University.

Sample and Procedure

We asked a heterogenous adult sample of $N_{\text{Wave 1}} = 963$ participants March–July 2020 to participate in a two-wave online study. Waves were administered eight weeks apart. Participants were recruited through local press and invitational letters distributed to every household in a mid-sized German university city. We also recruited participants in three other cities through local press. In some locations, participants were invited to an additional wave, which contained measures irrelevant to the present study. Participants were offered 2.00€ and inclusion into a raffle (10x500.00€) for their

participation in all waves. Since we were interested in intergroup perception, we excluded participants from analyses who self-identified as refugees, $n = 17$, and homosexual individuals, $n = 40$. Result patterns including these participants did not differ. The final sample consisted of $N_{Wave 1} = 892$ participants; 61.4% females, 11.5% no answers; $M_{age} = 42.58$ years, $SD_{age} = 16.64$, 18-85 years; 89.6% without migration background; $M = 16.81$, $SD = 3.67$ years in education, 4-30 years; 1.5% pupils, 24% students, 53.1% working, 13.3% retirees/pensioners, 8.2% other or no answer. 61.90% ($n = 552$) of participants in wave 1 continued to participate in wave 2. Sensitivity analysis using pwrSEM version 0.1.2 (Wang & Rhemtulla, 2021) α-level = .05 and $N_{Replications} = 5,000$ for a two-wave cross-lagged panel model we envisioned with cross-lagged relationships ranging between .3 (prejudice towards refugees and social fear of crime) and .15 (prejudice towards homosexual people and social fear of crime) revealed that the study was sufficiently powered (.89-1.00; for further details on the power analysis, see OSM-Table 4).

Measures

Prejudice

We used a two-item version of a scale Kotzur and Wagner (2021) used to ask participants on a 7-point scale from *1 – very negative*, to *7 – very positive*, "how would you rate [refugees/homosexuals] overall?" and "How would you generally describe your feeling towards [refugees/homosexuals]?", for refugees, $r_{Wave 1} = .819$, $p < .001$, $r_{Wave 2} = .814$, $p < .001$, for homosexual people $r_{Wave 1} = .865$, $p < .001$, $r_{Wave 2} = .829$, $p < .001$. We inverted scores so that higher values reflect more prejudice.

Social fear of crime

We used Mears et al.'s, (2009) scale which we amended with an additional item to ask participants to indicate their agreement on a 7-point scale from *1 – completely disagree*, to *7 – completely agree*, to the following statements: "In Germany, crime is a problem to be taken seriously", "In my town/community, crime is a serios problem", and "I am concerned crime is rising in Germany", $\omega_{Wave 1} = .881$ and $\omega_{Wave 2} = .883$.

Results

Preliminary analyses

We ran a series of ANOVA and chi-square tests in SPSS 27 to test for attrition across waves. Results with a Bonferroni-corrected $p_{two\text{-}tailed}$-level = .005 indicated that those with more favorable attitudes towards homosexual people expressed on both attitude items tended to continue their participation, $M_{item1} = 5.95$, $SD_{item1} = .942$; $M_{item2} = 5.92$, $SD_{item2} = .973$, compared to those who did not, $M_{item1} = 5.67$, $SD_{item1} = 1.169$; $M_{item2} = 5.62$, $SD_{item2} = 1.168$, $F_{item1}(1, 600.878) = 12.994$, $p < .001$, and $F_{item2}(1, 616.319) = 15.737$, $p < .001$. Thus, missingness at least partially depended on observed data (Little & Rubin, 2020). We handled this by using a full-information maximum likelihood estimator in all subsequent analyses which is robust against such systematic attrition. The estimator does so by estimating missing values based on the observed variance-covariance matrix in a model-based fashion, which, in our case, included the variables that carry information on the missingness pattern to account for potential bias.

We ran a series of confirmatory factor analyses in Mplus 8.5 or higher to check whether prerequisites were met to submit scales to longitudinal analyses. As a minimal criterion for analyses based on manifest scale means, factor loadings and intercepts of scale items must be equal across measurement occasions (scalar invariance; Vandenberg & Lance, 2000). We were able to establish scalar invariance for all scales using the $\Delta CFI < .01$ criterion (Cheung & Rensvold, 2002; for results, see OSM-Table 5).

Main analyses

We used Mplus 8.5 and above for all main analyses. Descriptive statistics are summarized in OSM-Table 6.

To test whether (a) prejudice towards refugees is more strongly associated with social fear of crime than prejudice towards homosexual people and (b) the dominant direction of the prejudice-social fear of crime link, we fit a 2-wave cross-lagged panel model. All constructs at wave 1 were modeled as predictors of all constructs at wave 2, controlling for gender, age, and education (years of

schooling) again. A stronger longitudinal relationship between fear of crime and prejudice towards

refugees than prejudice towards homosexual people would provide evidence for the first proposition.

A stronger path from prejudice towards any group at wave 1 to social fear of crime at wave 2 than the

path from fear of crime at wave 1 to prejudice at wave 2 would provide conducive evidence for

prejudice more dominatingly determining fear of crime levels. The opposite pattern would speak for

social fear of crime being a more important predictor of prejudice. Results are summarized in Figure

2.

-Figure 2-

Prejudice towards refugees predicted levels of social fear of crime over time, $\beta = .131$, $p <$

.001, 95%CI[.065, .198]. Social fear of crime also predicted prejudice towards refugees over time, but

to a smaller extent, $\beta = .084$, $p = .002$, 95%CI[.031, .137]. This suggests that prejudice towards

refugees and social fear of crime reciprocally affected each other. However, the effect of prejudice on

fear of crime was stronger, $b = 0.093$, $SE = 0.047$, $p = .047$, 95%CI[0.001, .0.185].

In contrast, prejudice towards homosexual people did not significantly predict fear of crime

levels over time, $\beta = .030$, $p = .398$, 95%CI[-.040, .101]. The reversed path was also not significant, β

$= -.003$, $p = .905$, 95%CI[-.059, .053]. Thus, as expected, fear of crime was more strongly associated

with prejudice towards refugees than with prejudice towards homosexual people. The effect of

prejudice towards refugees on social fear of crime was marginally significantly stronger (two-tailed

test) than the effect of prejudice towards homosexual people on social fear of crime, $b = .120$, $SE =$

0.071, $p = .089$, 95%CI[-0.018, 0.259]. The difference for the reversed relationship was significant, b

$= .068$, $SE = 0.027$, $p = .011$, 95%CI[0.016, 0.120]. Together, these results provide support for the

notion that the strength of the link between prejudice towards refugees, a more criminally-stigmatized

group, and social fear of crime is stronger than the link between prejudice towards homosexual

people, a less criminally-stigmatized group, and social fear of crime. Overall, R^2 were large, not least

due to the longitudinal nature of Study 2, accounting for large shares of variance in wave 2 variables

(R^2s $= .556-.668$).

Discussion

Our results were in line with our proposition that social fear of crime is more strongly associated with prejudice towards refugees than with prejudice towards homosexual people. None of the cross-lagged paths between prejudice towards homosexual people and social fear of crime were significant, whereas those between prejudice towards refugees and social fear of crime were. Quantitative difference tests of the strength of these paths provide additional support for this assumption. Moreover, our findings suggested that prejudice towards refugees and social fear of crime reciprocally affect each other. However, the more dominant mechanism over time was prejudice eliciting social fear of crime. This is supported by the finding that prejudice towards the criminally-stereotyped group affected social fear of crime significantly stronger than vice versa.

General Discussion

Our main goals of this paper were to investigate (a) whether prejudice towards refugees as a social group that is stereotyped as more criminal is more strongly associated with social fear of crime compared to prejudice towards homosexual individuals, a group that is less associated with crime; and (b) the dominant direction of the prejudice-social fear of crime link. The pretest provided the basis for exploring these questions by providing evidence for our hypothesis that refugees – a minority group of increasing social relevance in the US, Europe, and many other parts of the world (Kotzur et al., 2022) – are more strongly stereotyped as criminal than homosexual people, our comparison group. The findings of this first systematic examination of cultural stereotypes of refugees and homosexual people regarding perceived proneness to criminality were consistent across open- and closed-ended measures.

Study 1a and 1b suggested the link between prejudice towards refugees and social fear of crime is further qualified by specific subgroup attributes. As expected, country of origin and flight motivations served as qualifiers of this relationship. Study 1a showed that prejudice and social fear of crime were more strongly related for refugees from Eritrea, a Northern African country which has been particularly saliently associated with crime in the public discourse in Germany, than for refugees

from Ukraine. Expanding on these findings, Study 1b showed that prejudice towards refugees fleeing due to political persecution and prejudice due to economic reasons each were associated more closely with social fear of crime levels than prejudice towards refugees due to war. In addition, prejudice towards refugees fleeing due to political persecution was surprisingly more closely associated with fear of crime than prejudice towards refugees fleeing for economic reasons. One reason for this might be that people associate political persecution particularly strongly with safety issues, such as the possibility of motivating additional politically-motivated criminal activity in Germany and elsewhere. For example, the murder of former Soviet spy Skripal and his daughter (Wood & Henke, 2018), where the presence of persecuted refugees translated directly into violent crime committed in the refugee-receiving country; or the unlawful distribution of secret Governmental documents by Snowden and Assange (Touchton et al., 2020), including debates revolving around their criminal cases and reduced (perceptions of) public security as a consequence of these actions. This new knowledge is not only of high theoretical value regarding important qualifiers of the relationship between prejudice and social fear of crime, but also for both policy and practice allowing for specific targeting of interventions to specific subgroups of refugees based on country of origin and flight motive, allowing for efficient allocation of resources for such endeavors, among other things, whose value we will elaborate more on below.

Study 2 is the first study to provide support for the notion that prejudice towards refugees predicts social fear of crime and vice versa, with the more dominant mechanism being prejudice predicting social fear of crime. As such, our findings have far-reaching implications not only for theory development, which is still in its infancy for social fear of crime, but also policy and practice. On the one hand, our research suggests that fostering prejudice towards refugees, and perhaps other criminally-stigmatized groups, may be a way to breed social fear of crime. A sense of societal unsafety can fuel preference for policies balancing security against liberty (Jackson, 2006), which interest groups favoring such policies could leverage that way. On the other hand, our findings suggest that reducing prejudice towards refugees and potentially other criminally-stereotyped minorities is a viable pathway to contribute to the reduction of social fear of crime. As there are many

empirically supported ways to do so (Paluck et al., 2021), we hope to inspire a wave of research and practice that uses our research as a basis to design such interventions to improve people's lives by reducing levels of social fear of crime. As such, reducing prejudice towards criminally-stigmatized groups could be a way to encourage people to view the world in a more positive light (Jackson, 2004), and nurture individual and community behaviors that are else negatively related to social fear of crime, contributing to more social cohesion and solidarity (Amerio & Roccato, 2005).

We have combined various methods to build up our research, which allowed us to advance the understanding of the relationship between prejudice towards refugees and social fear of crime and important qualifiers of this relationship. Nonetheless, there are many ways future studies can build on ours. Since group stereotypes require thorough empirical exploration (see pretest), we have focused our investigation exclusively on one comparison group in society –homosexual individuals. We have also concentrated our empirical investigations to the German context. Generalizations beyond the group and context constellations in this cultural context should only been drawn with caution. For instance, it is likely that homosexual individuals are associated more with crime in parts of the world where homosexuality is outlawed. Similarly, refugees, the focal group of our research, may be viewed very differently in refugee-receiving countries, like Germany, compared to refugee-emitting countries. Thus, we encourage future studies to consider examining further social groups in additional country-contexts to gauge the generalizability of our findings. Although diversity in operationalizations of constructs adds to the generalizability of findings, it also limits direct comparability of effects across studies. Furthermore, our studies did not focus on particular categories of crime, including in our operationalization of social fear of crime. Future research could add to ours by distinguishing between different facets of fear of crime – e.g., violent crimes, like assault or robbery, possibly strongly related to prejudice towards refugees, as it may match closely the cultural stereotype; versus non-violent crimes, like theft, possibly less strongly related to prejudice towards this group – and how they might differentially relate to group perceptions.

Two-wave longitudinal designs have some limitations, too. Although we are not aware of any events that might have impacted our results, our design does not allow for ruling out the influence of

such events or other third variables (Shadish et al., 2002). They also do not allow for decomposing variance into between-person and within-person components, a procedure that is currently debated (Hamaker et al., 2015; Orth et al., 2021). Future studies could complement ours with experimental designs as well as multi-wave designs to address theses limitations.

Finally, we focused on *perceptions*. We do not suggest that any particular social group *is* more prone to criminality, or that our findings support such claims.

Conclusion

We pioneered the examination of the relation of prejudice and social fear of crime comparing between a group that is stereotyped as more criminal (refugees) to a group that is perceived as less criminal (homosexual people). Our findings show that prejudice towards refugees as a group stereotyped as more criminal is more strongly associated with social fear of crime than less criminally-stereotyped groups. We could also demonstrate that country of origin and flight motives are factors that additionally qualify the link between prejudice towards refugees and social fear of crime. Most importantly, we could demonstrate that prejudice predicts social fear of crime more dominantly than the other way around. These findings provide an important empirical basis for theory development, and for policy and practice to explore prejudice reduction as a potential pathway to reduce social fear of crime.

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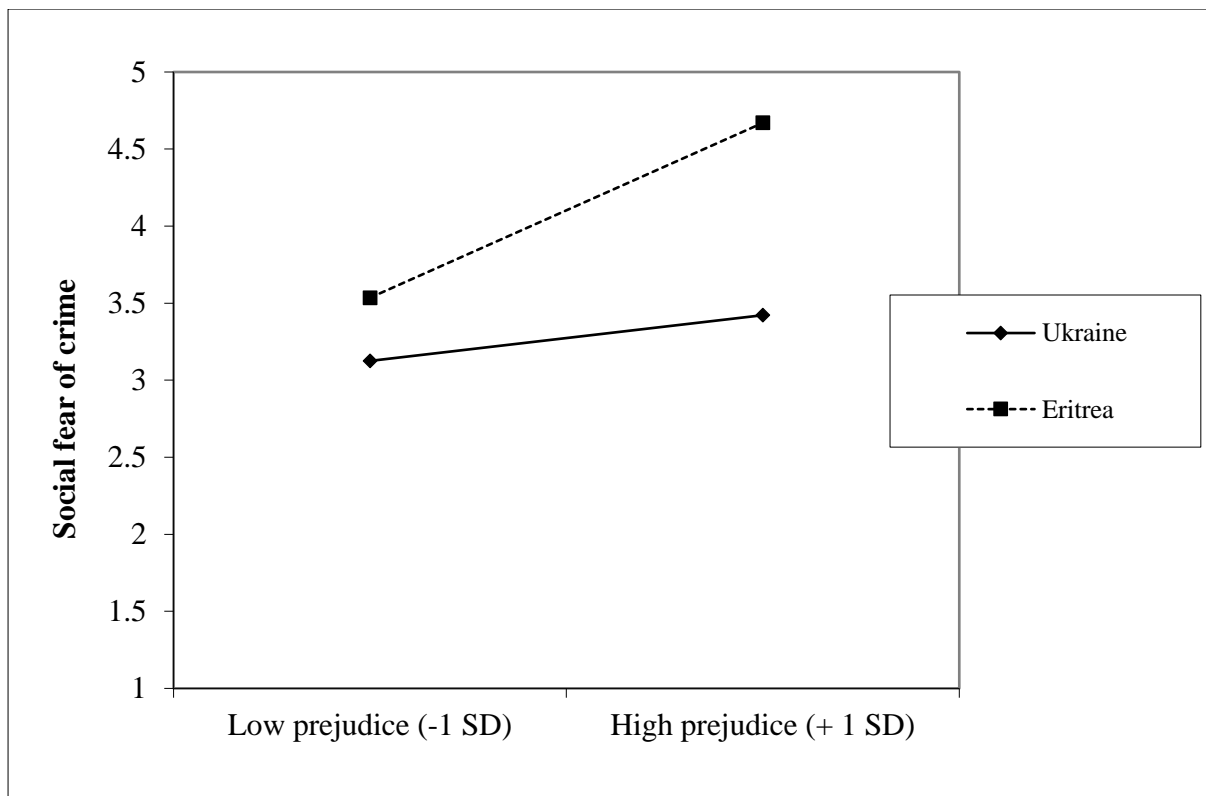*Figure 1.* Study 1a: Depiction of the significant interaction effect, according to which dummy-coded country of origin (Ukraine = 0, Eritrea = 1) moderated the association between prejudice towards refugees and social fear of crime, based on unstandardised *b*s, using Jeremy Dawson's tool, http://www.jeremydawson.co.uk/slopes.htm. Mean and Standard deviation of prejudice scores were divided by 10 for this graph.
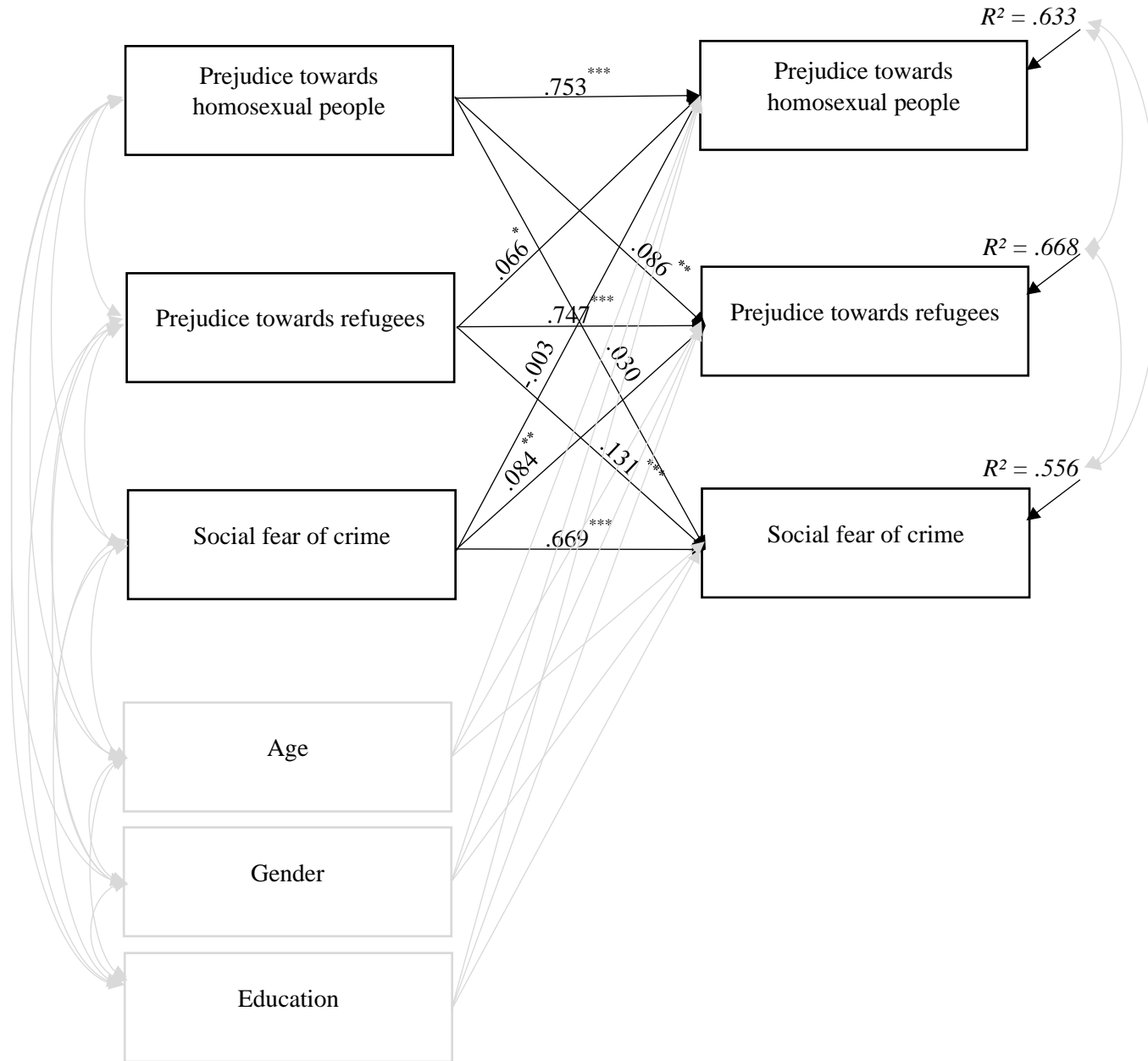
1

Figure 2. Study 2: Cross-lagged panel model of prejudice towards homosexual people as a less criminally stereotyped group, refugees as a more criminally stereotyped group, and social fear of crime. All regression weights are standardized βs. *p ≤ .05, **p ≤ .01, ***p ≤ .001

Table 1

Study 1a: Results of hierarchical multiple linear regression predicting social fear of crime

Predictor	Model 1				Model 2				Model 3			
	b (SE)	95% CI (*b*)	β	*p*	*b* (SE)	95% CI (*b*)	β	*p*	*b* (SE)	95% CI (*b*)	β	*p*
Constant	3.219*** (0.114)	[2.996, 3.443]		<.001	2.887*** (0.124)	[2.644, 3.131]		<.001	2.972*** (0.142)	[2.694, 3.251]		<.001
Female	0.023 (0.045)	[-0.066, 0.111]	.012	.616	0.047 (0.044)	[-0.040, 0.134]	.025	.290	0.050 (0.044)	[-0.037, 0.137]	.027	.259
Age	0.005** (0.002)	[0.002, 0.008]	.080**	.002	0.005** (0.002)	[0.001, 0.008]	.070**	.005	0.004** (0.002)	[0.001, 0.008]	.069**	.006
Education	-0.104* (0.047)	[-0.196, -0.011]	-.056*	.028	-0.062 (0.046)	[-0.153, 0.029]	-.033	.182	-0.062 (0.046)	[-0.153, 0.029]	-.034	.179
Prejudice					0.008*** (0.001)	[0.006, 0.010]	.223***	<.001	0.006** (0.002)	[0.002, 0.009]	.161**	.003
Country of origin												
Syria					-0.147* (0.071)	[-0.286, -0.008]	-.064*	.039	-0.112 (0.074)	[-0.258, 0.034]	-.049	.133
Afghanistan					-0.218** (0.071)	[-0.358, -0.078]	-.095**	.002	-0.190* (0.075)	[-0.337, -0.044]	-.083*	.011
Kosovo					-0.172* (0.071)	[-0.312, -0.032]	-.075*	.016	-0.142 (0.075)	[-0.288, 0.005]	-.062	.058
Eritrea					-0.040 (0.072)	[-0.181, 0.101]	-.017	.575	-0.023 (0.075)	[-0.171, 0.125]	-.010	.759
Prejudice x country of origin												
Prejudice x Syria									0.016 (0.070)	[-0.121, 0.153]	.008	.815

Predictor	Model 1				Model 2				Model 3			
	b (SE)	95% CI (*b*)	β	*p*	*b* (SE)	95% CI (*b*)	β	*p*	*b* (SE)	95% CI (*b*)	β	*p*
Prejudice x Afghanistan									0.074 (0.071)	[-0.064, 0.212]	.036	.295
Prejudice x Kosovo									0.051 (0.073)	[-0.092, 0.194]	.023	.484
Prejudice x Eritrea									0.161* (0.074)	[0.016, 0.307]	.071*	.029
R²	0.012				0.061				0.064			
ΔR²	0.012**				0.049**				0.003			

Note. Male is reference category for sex (female). Education is binary, 0 = below upper secondary-level, 1 = upper-secondary level and above. Ukraine reference category for country of origin variable.

Table 2

Study 1b: Results of hierarchical multiple linear regression predicting social fear of crime

Predictor	Model 1				Model 2			
	b (SE)	95% CI (b)	β	p	b (SE)	95% CI (b)	β	p
Constant	3.641*** (0.006)	[3.519, 3.264]		<.001	2.585*** (0.078)	[2.432, 2.738]		<.001
Female	0.126*** (0.026)	[0.076, 0.177]	.066***	<.001	0.180*** (0.025)	[0.132, 0.229]	.095***	<.001
Age	0.006*** (0.001)	[0.005, 0.008]	.118***	<.001	0.005*** (0.001)	[0.003, 0.006]	.088***	<.001
Education	-0.541*** (0.027)	[-0.594, -0.488]	-.283***	<.001	-0.396*** (0.027)	[-0.448, -0.344]	-.208***	<.001
Prejudice (fleeing due to war)					0.084** (0.030)	[0.026, 0.142]	.050**	.005
Prejudice (fleeing due to economic reasons)					0.169*** (0.024)	[0.122, 0.217]	.110***	<.001
Prejudice (fleeing due to political persecution)					0.300*** (0.028)	[0.246, 0.355]	.190***	<.001
R^2	0.047				0.161			
ΔR^2	0.047***				0.114***			

Note. Male reference category for sex (female). Education is binary, 0 = below upper secondary-level, 1 = upper-secondary level and above.

Online Supplementary Materials

OSM-Table 1

Overview of gender, age, migration background/history and education composition of the samples of Study 1a (quota sample), Study 1b (probability sample), and population data

Demographic facet	Sample Study 1a (quota sample)	Sample Study 1b (probability sample)	Population
Gender	49.7% female, 50.3% male	49.1% female, 50.9% male	49.2 % female, 50.8% male (September 2022)[1]
Age	45.2 years	53.35 years	44.6 years (2022)[2]
Migration background /history	25.4 % migration background	11.1% not born in Germany	26.0 % migration background, 14% not born in Germany (2019)[3]
Upper-secondary educational level or higher	55.63% (18-year-olds and beyond)	49.4% (18-year-olds and beyond)	37.6% (15-year-olds and beyond) (2023)[4]

Note. Population data was retrieved from the following sources:

[1]DeStatis Statistisches Bundesamt (16 August 2024). *Bevölkerung nach Nationalität und Geschlecht [Population according to nationality and gender],* https://www.destatis.de/DE/Themen/Gesellschaft-Umwelt/Bevoelkerung/Bevoelkerungsstand/Tabellen/liste-zensus-geschlecht-staatsangehoerigkeit-basis-2022.html#1343596

[2]Statista (19 July 2024). *Durchschnittsalter der Bevölkerung in Deutschland bis 2023 [average age of the population in Germany up to 2023],* https://de.statista.com/statistik/daten/studie/1084430/umfrage/durchschnittsalter-der-bevoelkerung-in-deutschland/

[3]Bundesamt für Migration und Flüchtlinge (n.d.) *Bevölkerung mit Migrationshintergrund in Deutschland [population with migration background in Germany],* https://www.bamf.de/DE/Themen/Forschung/Veroeffentlichungen/Migrationsbericht2019/PersonenMigrationshintergrund/personenmigrationshintergrund-node.html

[4]Statista (10 April 2024). *Bildungsstand: Bevölkerung nach Alter und Schulabschluss 2023 [education status: Population according to age and educational degree 2023],* https://de.statista.com/statistik/daten/studie/197269/umfrage/allgemeiner-bildungsstand-der-bevoelkerung-in-deutschland-nach-dem-alter/

OSM-Table 2

Study 1a: Correlations, means, and standard deviations of constructs

	Mean (SD)	1	2	3	4	5	6
1 Prejudice	52.91 (26.03)	1					
2 Social fear of crime	3.43 (0.92)	.216***	1				
3 Origin: Syria	0.20 (0.40)	.062*	.002	1			
4 Origin: Afghanistan	0.20 (0.40)	.079***	-.036	-.255***	1		
5 Origin: Kosovo	0.20 (0.40)	.062*	-.015	-.254***	-.252***	1	
6 Origin: Eritrea	0.19 (0.39)	.060*	.050*	-.248***	-.246***	-.245***	1

Note. Origin variable is dummy coded, ranging from 0 (lowest) to 1 (highest), with Ukraine as the reference category. Prejudice ranged from 1 (lowest) to 100 (highest), social fear of crime scales ranged from 1 (lowest) to 5 (highest). $^*p \leq .05$, $^{**}p \leq .01$, $^{***}p \leq .001$.

OSM-Table 3

Study 1b: Correlations, means, and standard deviations of constructs

	Mean (SD)	1	2	3	4
1 Prejudice towards refugees fleeing from war	1.60 (0.564)	1			
2 Prejudice towards refugees who are politically persecuted	1.64 (0.604)	.639***	1		
3 Prejudice towards refugees fleeing for economic reasons	2.15 (0.621)	.507***	.487***	1	
4 Social fear of crime	2.08 (0.953)	-.273***	-.333***	-.279***	1

Note. Prejudice scales ranged from 1 (lowest) to 3 (highest). Social fear of crime scale ranged from 1 (lowest) to 5 (highest). ***$p \leq .001$.

OSM-Table 4

Study 2: Power analysis based on the given sample size and reasonable estimated effect sizes

Parameter	Value	Power
Auto-regressive paths	0.7	-
Cross-lagged paths		
prejudice (refugees) and fear of crime	0.3	1.00
prejudice (homosexual individuals) and fear of crime	0.15	.89
prejudice (refugees) and prejudice (homosexual individuals)	0.2	-
Effects of demographic variables (age, sex)	0.2	-
Within-wave correlations		-
Fear of crime and prejudice (homosexual individuals)	0.2	-
Fear of crime and prejudice (refugees)	0.4	-
Prejudice (refugees) and prejudice (homosexual individuals)	0.4	-
Within-wave correlations with demographic variables (age, sex)	0.2	-
Residual variances	0.6	-

Note. Power was calculated with pwrSEM (Wang & Rhemtulla, 2022). Number of simulations was 5000 (seed = 42), $\alpha = .05$, $N = 892$. Convergence rate was 1.

OSM-Table 5

Study 2: Longitudinal measurement invariance tests of multi-item scales

Model	AIC	BIC	χ^2	df	p	RMSEA [90% CI]	CFI	SRMR	ΔCFI	Acceptable ΔCFI?
					Social fear of crime					
Configural	13663.138	13764.450	5.176	6	.521	.000 [.000, .039]	1.000	.010	-	-
Metric	13659.193	13659.193	5.232	8	.733	.000 [.000, .028]	1.000	.010	.000	Yes
Scalar	13659.991	13742.005	10.029	10	.438	.002 [.000, .036]	1.000	.011	.000	Yes
					Prejudice towards homosexuals					
Configural	6002.302	6069.69	0.000	0	.000	.000 [.000, .000]	1.000	.000	-	-
Metric	6000.316	6062.891	0.014	1	.904	.000 [.000, .038]	1.000	.002	.000	Yes
Scalar	5998.716	6056.478	0.415	2	.813	.000 [.000, .040]	1.000	.005	.000	Yes
					Prejudice towards refugees					
Configural	6633.691	6701.155	0.000	0	.000	.000 [.000, .000]	1.000	.000	-	-
Metric	6631.715	6694.361	0.024	1	.876	.000 [.000, .045]	1.000	.002	.000	Yes
Scalar	6634.445	6692.272	4.755	2	.093	.039 [.000, .085]	.999	.013	-.001	Yes

Note. AIC = Akaike information criterion; BIC = Bayesian information criterion; χ^2 = chi square value; df = degrees of freedom; p = probability value; RMSEA = root mean square error of approximation; CFI = comparative fit index; SRMR = standardized root mean square residual.

OSM-Table 6

Study 2: Means, standard deviations, and correlations of constructs within and across waves

		Wave 1			Wave 2		
	Mean (SD)	1	2	3	4	5	6
1 W1 Prejudice towards refugees	3.17 (1.04)	1					
2 W1 Prejudice towards homosexual people	2.17 (1.01)	.374[***]	1				
3 W1 Social fear of crime	3.69 (1.31)	.378[***]	.141[***]	1			
4 W2 Prejudice towards refugees	3.09 (1.00)	.810[***]	.374[***]	.377[***]	1		
5 W2 Prejudice towards homosexual people	2.12 (0.89)	.347[***]	.792[***]	.129[***]	.402[***]	1	
6 W2 Social fear of crime	3.82 (1.25)	.403[***]	.188[***]	.729[***]	.417[***]	.152[***]	1

Note. W1 = Wave 1, W2 = Wave 2. [***]$p \leq .001$.