Perceiving refugees as threats may backfire on one's health: Relations with intercultural antecedents and psychological distress among Germans

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Abstract

In the recent years, research on the conditions, under which members of the host countries such as Germany perceive refugees as threatening and respond with negative attitudes, has increased. However, little attention has been given to the implications that subjective perceptions of threat among the host community may have for their own psychological health. Using integrated threat theory, the current study examined the relationships between perceived threats, person-centered antecedents in intercultural settings, and psychological distress among Germans, who reflected on incoming refugees. Using a survey company, a sample (N = 1000) was recruited, which matched the German census regarding central demographics. Participants completed a cross-sectional online survey with validated self-report measures. Assessments covered four perceived threat types (intergroup anxiety, symbolic and realistic threat, negative stereotypes), person-related antecedents (social identity as German, quantity and quality of prior intercultural contact), and psychological distress. Applying structural equation modeling, we found that high social identification as German was related to greater perceptions of symbolic/realistic threat, stronger negative stereotypes and to more intergroup anxiety. Vice versa, high quality of prior intercultural contact experiences was associated with a decrease of all threat types. The quantity of prior intercultural contact showed almost no relations to perceived threats. In terms of indirect effects, greater quality of contact predicted less distress, and greater identity as German predicted more distress, both via symbolic/realistic threat and intergroup anxiety. Taken together, perceiving refugees as a threatening outgroup may signify a self-harming risk, while high quality of intercultural relations may indirectly enhance health.

Since 2015, the European Union has accommodated about 3.5 million refugees. Roughly a third of them have applied for asylum in Germany (Eurostat, 2019). Though refugees are in particular need of social integration, many experience a lack of receptivity by members of the host country (Blomstedt et al., 2007). Although surveys mostly identified welcoming attitudes towards refugees shortly after their arrival, research has documented that such perception has been changing, with considerable proportions of the host countries' populations expressing negative attitudes toward refugees more recently (e.g., Campbell, 2017). In light of these findings, studies have started to examine the antecedents of attitudes and their implications for emotional responses towards refugees in different European countries.

The relations between attitudes towards groups and related emotions may be studied with reference to the Integrated Threat Theory (ITT; Stephan et al., 1999; Stephan & Stephan, 2000). ITT proposes different antecedents, which should account for the severity of perceptions of threat. These threats, in turn, should predict negative attitudes, negative emotional reactions and rejecting behavior of the ingroup towards members of an outgroup. With realistic threat, symbolic threat, intergroup anxiety, and negative stereotyping, ITT differentiates four types of threat perceptions that can be experienced when being confronted with members of an outgroup. *Realistic threat* refers to the perception

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that physical and economic well-being of the ingroup is endangered through the outgroup, while *symbolic threat* emerges through perceived differences in values, beliefs, and norms. *Intergroup anxiety* describes the fear people experience when interacting with outgroup members. *Negative stereotyping* is defined as negative expectations concerning the behavior of outgroup members.

Multiple studies provided evidence that these threats predict attitudes towards the respective outgroups (e.g., Stephan et al., 2000, 2009). However, existing research focused mainly on realistic and symbolic threat, and to a lesser extent on intergroup anxiety and negative stereotyping (e.g., Velasco González et al., 2008; Wike et al., 2016). So far, studies rarely analyzed all four threat types simultaneously (e.g., Stephan et al., 1999, 2000a). In terms of outcomes, most of the available studies focused on attitudes (e.g. Velasco González et al., 2008; Yitmen & Verkuyten, 2018; Stephan & Stephan, 2000). Yet, little attention has been given to the implications that subjective perceptions of threat may have for the mental health of the attitude holders. Psychological distress constitutes a common affective manifestation of impaired mental health, which may arise if members of the ingroup are confronted with an outgroup that is perceived as threatening (e.g., Goodwin et al., 2016; Ketturat et al., 2016). Building on these findings, it thus seems promising to examine, whether members of the host nation suffer from heightening stress responses, if they perceive refugees that had arrived in their country as threatening. Considering their potential for subsequent interventions, it is also worth exploring, which antecedents may reduce or enhance threat perceptions and may thus indirectly modulate the stress response towards refugees.

ITT acknowledges six different antecedents of heightened threat perceptions: intensified ingroup identification, little and/or negative contact experiences, emerging intergroup conflict, high status inequalities, high relevance, and little knowledge about the other group (Stephan et al., 2000a, b; Stephan & Stephan, 2000). *Ingroup identification* describes the intensity with which members of a group feel a sense of belonging to that certain group, incorporating its morals, values and characteristics. *Contact experiences* refer to the quantity as well as the quality of interactions between the ingroup and the outgroup. If both groups compete for resources and/or have opposite goals, group interaction may become hostile and take on the form of *intergroup conflict*. *Status inequality* characterizes perceived power differences between the outgroup and the ingroup. *Relevance* signifies whether positive social policies for the outgroup involve personal costs for the members of the ingroup. Finally, an ingroup may have little and/or inaccurate *knowledge* about characteristics and goals of an outgroup, which increases uncertainty about the outgroup and intensifies perceptions of threat.

Multiple evidence suggests that little knowledge about the other group, scarce and/or negative intergroup contact as well as prior intergroup conflicts reinforce threat perceptions and negative attitudes towards an outgroup (e.g., Kahn et al., 2017; Velasco González et al., 2008). Many of these studies, however, were predominantly conducted in the work context, education, or sports. In intercultural settings, contact experiences and group identity are proposed to be the primary antecedents, which should predict whether an ingroup perceives a culturally different outgroup as threatening (Velasco González et al., 2008; Louis et al., 2013; Yitmen & Verkuyten, 2018). Known as the contact hypothesis, it is suggested that less contact enhances threat, while more and/or better contact can decrease uncertainty about characteristics of the outgroup and therefore reduce threat and prejudice (Allport, 1954; for a meta-analysis see Pettigrew & Tropp, 2006). Despite empirical evidence for their relevance as antecedents, however, only few studies examined the role of contact and group identity in intercultural settings at once, thereby seldom differentiating the quality and the quantity of contact (Velasco González et al., 2008).

In response, the current study drew on the assumptions of ITT to examine the relations between the four types of perceived threats, selected antecedents (here: quality and quantity of intercultural contact and social identity as German), and psychological distress among Germans reflecting on the incoming refugees. Understanding these relations can be important for theoretical as well as for practical reasons. Identifying the antecedents of threat perceptions and distress experienced by Germans when thinking of refugees helps to specify ITT's assumptions on threat development for selected intercultural settings (e.g., Velasco González et al., 2008). If one can identify which antecedent is related to which type of threat, and how these variables are related to psychological distress, informational interventions (such as governmental campaigns which shape social identity; Mols et al., 2014) or educational programs (such as group-based awareness trainings in education or the workplace which shape contact experiences; Paluck, 2006) can be designed more target-oriented to lower refugee-related threat perceptions and distress. Addressing these selected antecedents inherits additional potential to reduce other threat antecedents such as intergroup conflicts, and prevent discrimination, which may indirectly foster refugees' mental health as well (Ringeisen et al., 2020).

Threat Perceptions, Attitudes, and Emotions in Intercultural Settings

A number of studies identified the four types of perceived threat to predict more negative attitudes towards migrants and their societal integration (for an overview see Stephan

& Stephan, 2000). In their study about prejudice against immigrants in the Netherlands Velasco González et al. (2008) found that Dutch participants held negative stereotypes about Muslims and perceived them as a symbolic threat to their values and their social identity as Dutch. Both threat types predicted greater prejudice regarding Muslim immigrants. Other studies suggest that the perception of realistic threats through possible terrorist attacks and criminal offenses precede negative attitudes towards immigrants (Wike et al., 2016; Eid, 2014; Shadid & van Koningsveld, 2001). There is limited research that examined all four types of threat perception in intercultural settings: Stephan et al. (1999) found perceived realistic threat, symbolic threat, intergroup anxiety, and negative stereotypes to be predictors of negative attitudes towards Mexican immigrants in the USA. It was also Stephan et al. (1998), who found the four threat types to be important predictors of attitudes towards immigrant groups - specifically Moroccans, Russians, and Ethiopians- in Spain and Israel.

Only few studies addressed threat perceptions regarding refugees, their antecedents, and/or outcomes such as attitudes or negative emotions (for an overview see e.g., Ringeisen et al., 2020). For instance, Yitmen and Verkuyten (2018) examined the attitudes of the Turkish host community towards Syrian refugees. They found realistic and symbolic threat perceptions to amplify negative attitudes towards refugees. Regarding the relations between threat perceptions and emotional reactions, the few existing studies could show that, if refugees are perceived as a realistic threat, for instance as competitors for scarce resources (Ceobanu & Escandell, 2010), a burden to services of the social welfare system, or as potential perpetrators to the physical well-being (IPSOS, 2016), hostility of the host society towards refugees intensified, which went along with greater anxiety and more psychological distress (Trines, 2017).

According to Stephan et al. (2000a), negative emotional reactions such as stress, anger, or anxiety towards members of an outgroup emerge in defense when individuals perceive an outgroup as a threat to the values, beliefs, and morals of their ingroup. Intergroup anxiety, in particular, should occur when ingroup members are worried to be embarrassed or rejected in an interaction with the outgroup (Stephan & Stephan, 1985). In support of these assumptions, Stephan et al. (2000a) found that US-Americans reported stronger prejudice about Mexicans when they were anxious about interacting with Mexicans or when they attributed negative traits to them. In turn, adverse emotions resulting from intergroup anxiety in intercultural settings can also lead to hostility towards the outgroup, and may further increase anxiety and psychological distress (Trines, 2017).

Antecedents of Perceived Threats Among the Host Community in Intercultural Settings

Drawing on the assumptions of ITT, previous studies differentiated the role of the six antecedents for threat perceptions in selected contexts such as context, education, or sports (e.g., Louis et al., 2013; Stephan et al., 2000b). Across these studies, intergroup conflict and knowledge emerged as important predictors of all four types of threat perceptions towards an outgroup, especially if both groups share a history of disputes and interpersonal clashes. These may be linked to power differences or status inequality (e.g., Prot, 2015; Stephan & Stephan, 2000).

These antecedents, however, seem to be irrelevant when analyzing attitudes towards refugees because most members of the host communities neither experienced interpersonal violence from refugees nor group-based verbal disputes. Instead, group identification and the quality of contact experiences seem to be of greater importance because the respective intercultural settings involve limited points of contact between refugees and members of the host country. According to a research overview from van Assche (2019), positive contact with an outgroup in intercultural settings reduces prejudice and anti-immigration attitudes significantly (Pettigrew & Tropp, 2006; Dhont et al., 2014) and buffers from threat perceptions and related negative emotions (Trines, 2017). Vice versa, a strong cultural group identity is linked to negative attitudes against outgroups (Bemak & Chung, 2018).

So far, only few studies focused on the social identification as German among members of the host community, or investigated the role of both the quality and quantity of intercultural contact experiences for threat perceptions regarding immigrants (Louis et al., 2013) or incoming refugees in particular (Yitmen & Verkuyten, 2018). Existing research mostly concentrated on either the quantity or the quality of contact. Based on these desiderata, we included both types of contact experiences in our study, which examined group identification based on nationality, as well as the quality and the quantity of intercultural contact, as possible antecedents of threat perception towards refugees.

Social Identity Based on Nationality

Strong identification with one's nationality increases the risk to perceive immigrants as threatening and to express negative attitudes towards them (Cohrs & Stelzl, 2010). Yitmen and Verkuyten (2018) found that negative behavioral intentions among the Turkish host community towards Syrian refugees were linked to higher social identification

as Turkish, and a higher perception of threat. Louis et al. (2013) identified the national identification of Australians and Canadians as an antecedent of symbolic threat perceptions, negative attitudes and dehumanizing emotions towards immigrants.

The negative affective responses towards migrants may be particularly strong if the group identity as members of the host nation becomes salient (Bemak & Chung, 2018). Thus, if group identity based on nationality is salient, perceived threat will more likely result in aggressive and retaliatory responses towards non-nationals or migrants (Fischer et al., 2010). This means that behavior is guided by factors of group identity (i.e., beliefs and values derived from group membership) rather than interpersonal factors (Wright, 2015). In their study about ingroup identification among White and African-American college students, Stephan et al. (2002) found ingroup identification based on ethnicity to be related to racial attitudes, with symbolic and realistic threat serving as mediators. Similar results have been found in other studies (e.g., Riek et al., 2006).

Quality and Quantity of Contact Experiences

Velasco González et al. (2008) found that more intergroup contact is associated with less negative stereotyping. While the authors only assessed the quantity of contact, they proposed that quality of contact could be more clearly related to symbolic and realistic threat perceptions. The amount of time, the host community has been in contact with foreigners, for instance refugees, only depicts the mere extent of exposure, namely quantity of contact, while the quality mirrors whether the contact was perceived as positive or negative (see Velasco González et al., 2008). In general, increasing contact may reduce negative stereotyping against cultural outgroups and thus prejudice. Positive contact between host communities and migrants in the sense of endorsing multiculturalism, however, reduces both stereotyping and symbolic threat and may therefore indirectly buffer from prejudice against migrants (Velasco González et al., 2008).

In the context of migration, research found that realistic and symbolic threat perceptions of ethnic minorities as an outgroup mediate the relationship between the *quality of contact* and attitudes (Stephan et al., 2002). More negative contact experiences led to stronger perceptions of symbolic and realistic threat, as well as intergroup anxiety. The latter also served as mediating factors between quality of contact and attitudes towards immigrants (Velasco González et al., 2008). More positive contact between members of the host community and immigrants decreased intergroup anxiety and therefore indirectly prejudices.

Current Study

Studies so far rarely analyzed implications of subjective threat for psychological health in intergroup settings that considered all four threat types at once. Moreover, with regard to intercultural intergroup settings, research seldom investigated whether contact experiences and social identification with one's nationality serve as antecedents of threat perception if members of the receiving society get in touch with an outgroup, in our case refugees. Building on these desiderata, the present study examined the relationships between all four types of perceived threats, selected antecedents, and psychological distress among Germans as members of the host community, who reflected on refugees that had been living in Germany for a few years. In terms of a proposed chain, we examined whether three antecedents (social identification with being German, quality and quantity of prior intercultural contact experiences) served as direct predictors of four threat types (realistic and symbolic threat, intergroup anxiety and negative stereotyping), which, in turn, should have a direct enhancing effect on psychological distress. Therefore, the antecedents were expected to have indirect effects via threat perceptions on distress. Based on the assumptions of ITT (Stephan & Stephan, 2000) and the presented summary of the literature, we visualized the conceptual relations between the study variables in fig. 1 and formulated the following hypotheses.

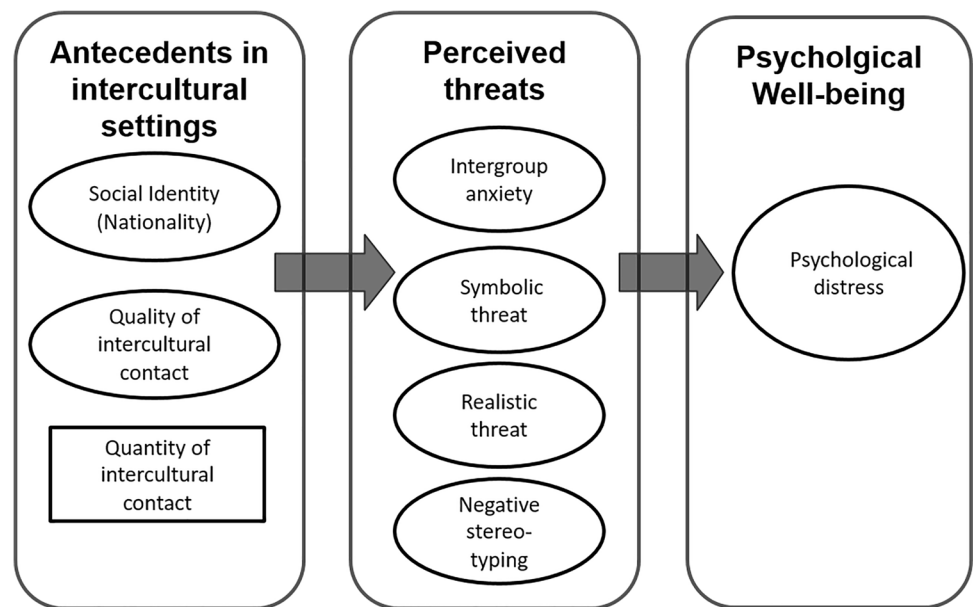**Hypothesis 1:** Antecedents, Threat Perceptions, and Distress

Aligned with existing research on social identity (Louis et al., 2013; Yitmen & Verkuyten, 2018; Cohrs & Stelzl, 2010; Fischer et al., 2010; Riek et al., 2006) and positive contact experiences (Stephan et al., 2002; Velasco González et al., 2008) as antecedents of threat perceptions, we hypothesized that high identification as German would relate to higher scores on all four threat types, while quantity and quality of intercultural contact should show inverse relations. Addressing a lack of research, we tested whether the path coefficients of quality/quantity of contact on each threat type would differ in strength. Following-up on prior studies on threat perceptions and emotional outcomes in intercultural settings (Ceobanu & Escandell, 2010; Trines, 2017; Stephan et al., 2000a), we further hypothesized that higher level of threat across all four threat types should be related to greater psychological distress among Germans, when thinking about refugees.

Hypothesis 2: Indirect Effects

Aside from the above-specified unidirectional pathways and in accordance with research that examined threat

Fig. 1 Conceptual relations between antecedents, threat types and psychological distress based on ITT

perceptions as mediators between antecedents and emotions (Stephan et al., 2000a Stephan et al., 2002; Velasco González et al., 2008), we tested for indirect effects. We hypothesized that the indirect pathways from the three antecedents via the four threat types on distress are significant.

Method

Sample

The sample consisted of 1000 Germans ($M_{age} = 47.47$, $SD = 15.10$) of which 50,8% identified as female and 49,2% as male. All participants were aged 18 or older, ranging from 19 to 77 years. 64.2% reported being employed. With regard to education, six participants did not complete schooling; 158 completed secondary school qualification (8th grade), 399 completed the secondary school certificate (10th grade), and 218 completed A-levels with a higher education entrance qualification, which is the highest school degree in Germany, allowing graduates to apply for universities or colleges. 219 participants completed a degree at university or college. All participants reported to have German citizenship. In terms of cultural background, 957 indicated that German is their mother tongue. The vast majority were born and raised in Germany (n = 971); the remaining 29 participants reported to have been born in Austria, Bulgaria, the Czech Republic, Denmark, Indonesia, India, Israel, Kazakhstan, Lebanon, the Netherlands, Poland, Russia, Syria, the USA, Turkey, and Vietnam.

Procedures

After receiving permission from the Institutional Review Board of the author's universities and all relevant administrative units, an online survey was realized with the help of an internet survey company. In order to generate an approximation of a representative adult sample with regard to age, gender distribution, education, and location of residence in accordance with the German Bureau of Statistics, the survey company drew a random sample of 2086 from a panel of more than half a million Germans. This sample was invited to take part in the survey (response rate = 48%). Before the start of the survey, the participants were provided with detailed written instructions how to complete the questionnaires. They were specifically informed that participation in the study was voluntary and that all their answers would be confidential, and that they were not obliged to answer a question if they felt uncomfortable doing so. When entering the survey, the participants provided written informed consent. It took 20 min on average to complete the survey.

Measures

We assessed antecedents, subjective perceptions of threat, and psychological distress with well-established instruments, which had been validated with German-speaking samples. Except for the quality and quantity of intercultural contact, the wording of the items and/or the instructions were adapted to assess the constructs of interest with reference to the refugees who had arrived in Germany in previous years. Regarding the two facets of contact, we decided to assess previous intercultural experiences with migrants in general,

not with refugees in particular. Two reasons accounted for this decision. First, refugees are a very heterogeneous group with respect to ethnicity, cultural background and country of origin, which members of the host community can hardly distinguish from other migrants in daily interactions (e.g., Brücker et al., 2017). Second, previous studies found that the vast majority of members in the receiving societies have none or at maximum little contact with refugees. Under such conditions, quality of contact with refugees cannot validly be assessed (Kessler & Fritsche, 2018).

Antecedents of Threat Perceptions

Aligned with Velasco González et al. (2008), *the quantity of intercultural contact* was assessed by one item, which captures the frequency of personal contact experiences with foreigners. Participants were asked: *"How often are you involved with foreigners living in Germany on a daily basis?".* Answers could be given on a four-point scale from *"Almost never"* [1] to *"Very often"* [4].

To assess the *quality of intercultural contact,* we used the subscale "Enjoyment of intercultural interactions" from the German version (Fritz et al., 2005) of the *Intercultural Sensitivity Scale* (ISS; Chen & Starosta, 2000). The subscale comprises four statements ($\alpha = .87$) that cover attitudes and affective responses towards intercultural situations, as well as behavioral strategies, in particular adaptive communication. All items were provided with a Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). An item example is *"I gladly socialize with people from different cultures.".* Factor loadings in the original study by Chen and Starosta (2000) ranged between .52 and .67. The factor loadings for our study ranged between .85 and .89. Crohnbach's Alpha was .92 in the current study.

Social identity as German was assessed with the respective six-item scale by Maehler (2012). The scale comprises five statements ($\alpha > .85$) about attitudes towards the social identification as being German. The items were provided with a Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). An item example is *"I am proud to identify with Germany."* The factor loadings in our study ranged from .82 to .90, while the loadings in the original study were .59 to .80 (Maehler, 2012). Cronbach's Alpha in our study was .93.

Threat Perceptions

Aligned with the assumptions of ITT (Stephan & Stephan, 2000), we assessed all four types of subjective threat perceptions, namely intergroup anxiety, symbolic threat, realistic threat, and negative stereotyping. *Symbolic and realistic threat* were assessed with a total of 6 items, which are commonly used to assess facets of xenophobia in regular

large-scale surveys on group-related attitudes towards migration in Germany: Two items from the MITTE studies (e.g., Decker et al., 2014), three items from the ALLBUS studies (General Population Survey of the Social Sciences; Diekmann et al., 2015), and one item from the group-related misanthropy survey (Kühnel et al., 2012). All six items were slightly rephrased to assess xenophobia with regard to refugees who had come to Germany, and provided with a Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). Two items captured symbolic threats (e.g., *"Germany is infiltrated with too many foreign influences due to the numerous refugees.");* four items assessed perceptions of realistic threat (e.g., *"In addition to the foreigners living in Germany, the recently arrived refugees take away jobs from Germans.").* In the current study, the two subscales of symbolic and realistic threat did not reflect adequate discriminant validity, and were thus merged for subsequent analyses (see section statistical analyses). The factorial loadings ranged from .68 to .91. Cronbach's alpha was .91.

Intergroup anxiety was assessed by means of an adjective-based scale (Bermeitinger et al., 2017), which comprised three emotion terms (anxious, fearful, worried; $\alpha = .82$). Participants were asked: *"Please indicate to which extent you feel each of the following emotions when you think about the refugees coming to Germany."* Answers could be given on a five-point scale from *"Not at all"* [1] to *"Extremely"* [5]. The factor loadings ranged from .73 to .82.

We assessed *negative stereotyping* with the four items from the German version (Werner & von Collani, 2004) of the *Ambivalence toward Men Inventory* (Glick & Fiske, 2001), which capture negative attitudes about men assuming they feel superior towards women. The wording was slightly adapted to address male refugees in particular. We decided to use the respective measure for two reasons. First, the majority of refugees who applied for asylum in Germany are young men (Eurostat, 2019). Second, young male migrants perceive greater discrimination than females (Güngör & Bornstein, 2009). Cronbach's alpha for this study was 0.92, compared to values around .85 in the original studies. Participants rated four statements such as *"When refugees "help" women, they only do it to proof their superiority."* on a Likert scale, ranging from 1 ("strongly disagree") to 4 ("strongly agree"). Factor loadings of the original study were .67 to .53 while factor loadings for this study ranged from .89 to .79.

Psychological Distress

Psychological distress was measured with the *K6 Scale* (Kessler et al., 2002), which is widely used to assess the effects of major life events with traumatic potential (e.g., Goodwin et al., 2016). Keyed to the influx of refugees in recent years, participants were asked to rate how often they

Table 1 Fit indices of confirmatory factor analyses and structural equation models

Models	df	χ^2	p	CFI/ TLI	RMSEA (90% CI)	SRMR
Model 1	522	1862.59	.001	.933/ .920	.051 (.048-.053)	.047
Model 2	467	1579.16	.001	.942/ .931	.049 (.046-.051)	.036
Model 3	414	1397.61	.001	.946/.936	.049 (.046-.052)	.037
Model 4	414	1397.61	.001	.946/.936	.049 (.046-.052)	.037

CFI comparative fit index, *TLI* Tucker-Lewis Index, *RMSEA* root mean square error of approximation (90% CI is presented in brackets), *SRMR* standardized root mean square residual; Model 1 = baseline CFA; Model 2 = modified CFA; Model 3: original SEM; Model 4: transformed SEM;

felt six different emotional states during the last 30 days. Examples include nervous, hopeless, restless or fidgety. The six items were rated on a five-point Likert scale ranging from 1 ("none of the time") to 5 ("all of the time"). In this study, factor loadings were ranging from .75 to .88; Cronbach's Alpha was .93.

Statistical Analyses

We used Mplus version 8.00 (Muthén & Muthén, 1998-2012) to examine the hypothesized latent associations between the study variables by means of structural equation modeling (SEM). In the first step, multi-factor confirmatory factor analysis (CFA) was run to evaluate the measurement model and determine the latent correlations among the study variables (models 1 and 2) (Brown, 2015). Based on the CFA results, the latent associations between antecedents, subjective perceptions of threat and distress were investigated by means of SEM (model 3). For all models, age, gender (1 = male, 2 = female), level of education, economical status (average household income in Euros) and country of origin (1 = German-born, 2 = German with migration background) were included as covariates. There were no missing values on the study variables.

For the CFA and the SEM, the Satorra-Bentler estimation method was employed, which calculates a mean-adjusted, corrected chi-square and provides maximum likelihood parameter (MLR) estimates that are robust to violations of normality of item distributions (Muthén & Muthén, 1998-2012). In order to test the indirect effects of the antecedents via the threats on distress, we used the model indirect command in MPlus, which calculates bias-corrected bootstrapped confidence intervals (boot = 2000). As the MLR estimation is not available for the bootstrapping command, we calculated the confidence intervals from an analogous model with the standard maximum likelihood estimation (ML) to test the indirect effects. Model fit was estimated using primary fit indices as recommended by Hu and Bentler (1999): The Chi-Square Test of Model Fit (χ^2), the Root Mean Square Error of Approximation (RMSEA) including the 90% confidence intervals, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Standardized

Roo Mean Square Residuals (SRMR). For the CFI and the TLI, a value close to 1 exemplifies an excellent model fit, a value >.95/.90 a good/acceptable model fit. For the SRMR and RMSEA, a value close to 0 denotes a perfect model fit, whereas values ≤ .06/.08 are good/acceptable (Hu & Bentler, 1999).

To test the strength of relations of quantity and quality of intercultural contact with each threat type separately, we applied the two-stage method as proposed by Kwan and Chan (2011). In SEM, standardized path coefficients are meaningfully comparable but cannot be tested against each other if the variables of interest are assessed with different metrics, as it was the case in the current study. To overcome this obstacle, at stage 1 we transformed the original SEM with standardized paths (model 3) by reparametrization into an SEM with non-standardized paths (model 4), which allows to test the differences in path strength meaningfully. Because the transformed model is covariance-equivalent to the original model the fit indices for both models are identical (see Table 1). At stage 2, equality constraints were imposed on the non-standardized paths of both contact predictors on one threat type to statistically test their difference via Wald tests. Separately for each threat type, we therefore compared the transformed model with freely estimated paths (model 4) with transformed models in which the paths of quantity and quality of intercultural contact on intergroup anxiety (model 5: $\beta_1 = \beta_2$), symbolic-realistic threat (model 6: $\beta_3 = \beta_4$), or negative stereotyping (model 7: $\beta_5 = \beta_6$; see Table 3 and Fig. 2) were constrained to equal.[1] If a Wald test revealed significant test statistics, the equality constraint would substantially worsen the model fit and, thus, the compared path coefficients of both contact predictors would differ substantially (see Table 3).

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[1] To reduce complexity in Figure 2 and in the result section, only those regression coefficients are numbered whose strength were compared by means of Wald tests.

Fig. 2 Standardized path coefficients between antecedents, perceived threats, and psychological distress in model 3. Note. Only those regression paths are numbered whose strength were compared by means of Wald tests. *p < .05. **p < .01. ***p < .001
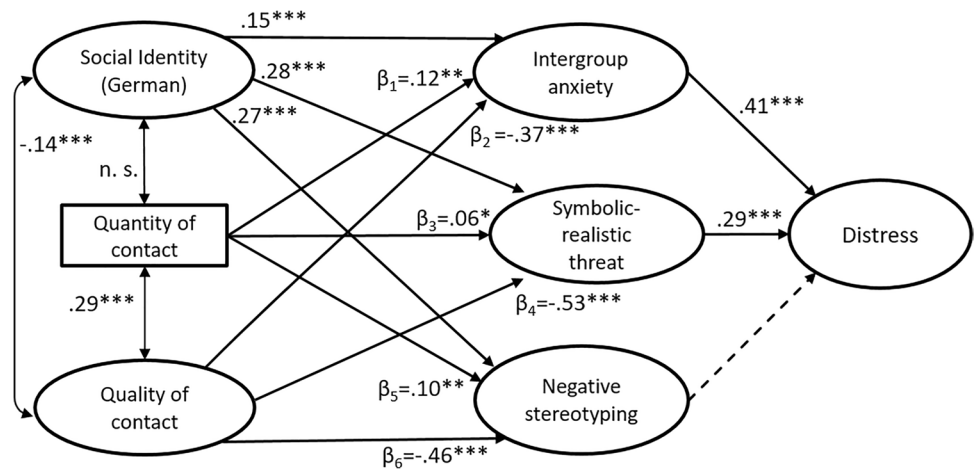
Table 2 Latent correlations of antecedents, perceived threats, and psychological distress in model 2

Constructs	M	SD	2	3	4	5	6	7
1. Social Identity as German	3.11	.896	−.030	−.139***	.356***	.351**	.191***	.108**
2. Quantity of intercultural contact	2.59	.947		.288***	−.110**	−.057	−.005	−.023
3. Quality of intercultural contact	2.95	.893			−.571***	−.480***	−.361***	−.391***
4. Symbolic & realistic threat	2.07	1.05				.818***	.655***	.584***
5. Negative Stereotyping	2.41	1.02					.596***	.489***
6. Intergroup anxiety	2.29	.985						.617***
7. Psychological distress	2.05	1.12						

N = 1000. *p < .05. **p < .01. ***p < .001

Table 3 Results of the Wald tests for comparing the regression coefficients of quantity/quality of contact separately on each threat type based on the transformed model

Regression coefficients on	Wald χ^2	df	p
Intergroup anxiety ($\beta_1 = \beta_2$)	64.96	1	< .001
Symbolic-realistic threat ($\beta_3 = \beta_4$)	166.19	1	< .001
Negative stereotyping ($\beta_5 = \beta_6$)	113.90	1	< .001

Wald $\chi 2$ = chi-square statistics of the Wald tests; df = degrees of freedom of the Wald tests

Results

Preliminary Analysis

To evaluate the measurement model and determine the latent correlations among the study variables, multi-factor CFA was conducted. The indices for the initial CFA (model 1) revealed a satisfactory fit (see Table 1). The standardized model solutions yielded a correlation of .94 between the two latent factors of symbolic and realistic threat. This suggests that the participants could not discriminate between the two threat types, which were

therefore merged into one subscale. The repeated CFA (model 2) yielded a good model fit (see Table 1).

The factor loadings ranged from .82 to .90 for social identity. For quality of intercultural contact, they were between .85 and .90, for symbolic and realistic threat from .68 to .90, from .82 to .89 for negative stereotyping, from .73 to .82 for intergroup anxiety and from .76 to .87 for psychological distress. Screening the latent correlations, the hypothesized patterns could largely be confirmed (see Table 2).

Relations among Antecedents, Threat Perception and Psychological Distress

To control for variance overlap between the measures, SEM was applied to determine the unilateral latent relations between antecedents, threat perceptions, and psychological distress. The baseline SEM (model 3) is depicted in Fig. 2. Its fit indices reflected a good fit (see Table 1). In the SEM, we allowed the three antecedents, as well as the three threat variables to covary. While social identification as German and quality of contact were negatively related to each other (r = −.14; SE = .04; p < .01), quantity of contact was only related to quality of contact (r = .29; SE = .03; p < .01). All

threat types exhibited substantial positive relations to each other *(r ranging from .58 to .72; all SE = .03; all ps < .01).*

Concerning our first hypothesis, the hypothesized relations were mostly congruent with the observed patterns. High social identification as German was associated with stronger intergroup anxiety *(β = .15; SE = .04, p < .01)*, a higher perception of symbolic and realistic threat *(β = .28; SE = .03, p < .01)*, and stronger negative stereotyping *(β = .27; SE = .03, p < .01)*. As hypothesized, the quality of contact showed reversed relations with threat perceptions: More experiences of previous positive intercultural contact predicted lower levels of intergroup anxiety *(β_2 = −.37; SE = .04, p < .01)*, symbolic-realistic threat *(β_4 = −.53; SE = .03, p < .01)*, and negative stereotyping *(β_6 = −.46; SE = .03, p < .01)*. Against our expectations, a greater quantity of contact was slightly yet positively related to intergroup anxiety *(β_1 = .12; SE = .04, p < .01)*, symbolic-realistic threat *(β_3 = .06; SE = .03, p = .02)*, and negative *stereotyping ((β_5 = .10; SE = .03, p < .01)*. Greater psychological distress with regard to refugees was predicted by higher levels of intergroup anxiety *(β = .41; SE = .05, p < .01)*, as well as symbolic and realistic threat *(β = .29; SE = .06, p < .01)*, while negative stereotyping had no significant effect *(β = −.01; SE = .06, p = .88)*.

Regarding the covariates, we found age *(β = −.15; SE = .03, p = < .01)* and the level of education *(β = −.06; SE = .03, p = .04)* to be negatively associated with psychological stress, meaning that older participants and those with higher educational level reported lower levels of psychological distress. Symbolic-realistic threat *(β = .07; SE = .03, p < .01)* as well as intergroup anxiety *(β = .18; SE = .03, p < .01)* were linked positively to gender, showing that women perceived these threat types more intensely than men. Negative stereotyping was associated negatively with the level of education *(β = −.07; SE = .03, p = .02)*, reflecting that those participants with higher education engaged in less negative stereotypes when thinking of refugees. Age and the level of education were linked to all antecedents, yielding slightly different patterns for social identity as German (for age: *β = .02; SE = .03, p < .01*; for education: *β = −.08; SE = .03, p = .01*) as well as the quality (for age: *β = .12; SE = .03, p < .01*; for education: *β = .23; SE = .03, p < .01*) and quantity of intercultural contact (for age: *β = −.15; SE = .03, p < .01*; for education: *β = .12; SE = .03, p < .01*). Additionally, gender was negatively linked to quantity of contact *(β = −.08; SE = .03, p < .01)*, meaning that male participants reported more contact than women.

The original SEM (model 3) was successfully reparametrized into an SEM with non-standardized paths (model 4), as indicated by the identical fit indices (see Table 1). Applying the Wald test, we found the regression coefficient of quantity of contact on intergroup anxiety to be significantly weaker than the regression coefficient of quality of contact *(β_1 = .12 vs. β_2 = −.36, p < .001)*. The same pattern emerged comparing the paths of quantity/quality of contact on symbolic-realistic threat *(β_3 = .06 vs. β_4 = −.55, p < .001)*, and comparing the paths of quantity/quality of contact on negative stereotyping *(β_5 = .10 vs. β_6 = −.47, p < .001*; see Table 3). For each threat type, the associations with quality of contact were therefore stronger than with quantity of contact.

Indirect Effects

Testing for indirect effects via bias-corrected bootstrapping based on the SEM with standardized paths (model 3), revealed the following significant paths: Social identity as German had an indirect amplifying effect on psychological distress via intergroup anxiety *(b = .061, p < .001, CI_{lower} = .026, CI_{upper} = .108, SE = .018, CR = 3.508)*, as well as via symbolic and realistic threat *(b = .088, p < .001, CI_{lower} = .043, CI_{upper} = .144, SE = .021, CR = 4.144)*. Vice versa, the quality of contact had an indirect attenuation effect on psychological distress via symbolic and realistic threat *(b = −.166, p < .001, CI_{lower} = −.257, CI_{upper} = −.084, SE = .035, CR = −4.784)* and via intergroup anxiety *(b = −.153, p < .001, CI_{lower} = −.230, CI_{upper} = −.099, SE = .026, CR = −5998)*. Lastly, intergroup anxiety also served as a mediator between quantity of contact and distress *(b = .049, p = .003, CI_{lower} = .015, CI_{upper} = .101, SE = .017, CR = 2.938)*.

Discussion

The aim of this study was to examine, whether social identity as German and quality/quantity of prior intercultural contact enhance or reduce different types of threat perceptions that Germans may experience when they think about the refugees, who had arrived in Germany previously. Further, we explored the impact that these subjective threat perceptions can have on the psychological distress of Germans. Aligned with the assumptions of the ITT, we found greater identification as German to be associated with greater intensity levels across all four threat types. The more the sample identified as German, the more they perceived incoming refugees as a threat to their physical and economic integrity as well as to their morals and values (realistic and symbolic threat), and pictured refugees in more negative stereotypes as hostile towards women. Further, in terms of an attenuation affect, the better the prior experienced intercultural contact, the less the participants experienced intergroup anxieties, the less they described refugees in terms of negative stereotypes, and the less they perceived refugees as threats to their physical and economical status quo and their values. Against our

hypothesis, the quantity of contact also exhibited slight positive associations with all threat types although the quality of contact consistently showed stronger relations.

Our findings on the quantity of contact partly contradict the studies from Pettigrew and Tropp (2006) and Velasco González et al. (2008), which found the frequency of contact to decrease prejudice and negative stereotyping and therefore improve the relation between members of the host community and ethnic minorities. The unexpected positive effect of quantity of contact on threat perceptions may be explained by the low frequency of contact experiences because all participants reported having "almost never" or at maximum "seldom" contact with foreigners. One could argue that such a lower frequency of contact may increase interaction fears because of the lack of experiences with intercultural situations. Having seldom instead of no contact may increase uncertainty, which may explain its reinforcing effect on negative stereotyping and threat perceptions regarding refugees, which can be attenuated if members of the host society get to know more about the group. Such interpretation is in line with findings showing that at least moderate frequency of regular contact is necessary for the ingroup to change their views on the outgroup (Pettigrew & Tropp, 2006).

By means of simultaneously assessing social identification with being German, and quality and quantity of intercultural contact experiences, we were able to differentiate their relations with all four threat types, and thus to specify their individual contribution as threat predictors. Comparing the role of both contact variables for threat experiences, the quality of intercultural contact seems to be of primary importance whose beneficial effects may transfer to the perception of refugees. Different interpretations may account for these effects. Simply having intercultural contact with foreigners does not help Germans to perceive other migrant groups – in our case refugees – as less threatening. On the contrary, having almost none or little contact may even increase threat perceptions because members of the host community may overestimate cultural differences and experience intensifying feeling of anxiety about how to interact in a suitable manner (Pettigrew & Tropp, 2006). Vice versa, Germans who collected positive contact experiences with people with other cultural backgrounds might feel less afraid of uncertainty in interaction with refugees because they might have improved their ambiguity tolerance in similar situations. Positive intercultural contact experiences may help Germans to perceive the heterogeneity of refugees regarding morals, values, personal backgrounds and goals more precisely, enabling them to take a more differentiated and individualized look at refugees as a group. Positive contact experiences may serve as a filter, which helps Germans to adopt a more empathetic outlook on refugees, better perceive their individualized needs, and thus

develop an understanding for similarities instead of differences (Pagotto et al., 2010).

Taken together, our findings corroborate the results of previous studies, which found that high social identification with one's nationality increases negative attitudes and negative behavioral intentions towards immigrants via threat perceptions (Yitmen & Verkuyten, 2018; Louis et al., 2013). Positive intercultural contact experiences, on the other hand, that members of the host community collected with culturally dissimilar groups decreased their risk to adopt a right-wing ideology, and reduce perceived threats and prejudices towards refugees and immigrants (van Assche, 2019). As other studies suggested, positive contact experiences are motivating people of one group to engage further in intercultural interaction situations with members of the other group while negative contact experiences might compromise this interest and feed intergroup anxiety as well as negative expectations regarding the interaction (Paolini et al., 2018; Prati et al., 2021).That said, the results of our study highlight the importance of fostering opportunities for Germans to experience positive intercultural contact in order to motivate them to continue engaging in intercultural contact situations, which thus seems to be crucial to buffer from threat perceptions and lower anxiety when interacting with members of cultural outgroups, especially regarding refugees.

With regard to the predictors of psychological distress as the outcome variable, we found that intergroup anxiety as well as symbolic and realistic threat displayed strong direct and positive associations with psychological distress, while the relation with negative stereotyping was not significant. In terms of indirect effects, the quality of intercultural contact decreased psychological distress via symbolic/realistic threat and intergroup anxiety, while the social identification with being German – and in part the quantity of contact - showed contrary patterns. Defining oneself by nationality may increase the risk to perceive refugees as outsiders, which may maximize the perception of cultural differences (symbolic threat) and unfairly distributed resources between nationals and non-nationals (realistic threat), and increase anxiety and even hostility when interacting with refugees in daily life, which negatively affects mental health in terms of greater distress (Ringeisen et al., 2020; Yitmen & Verkuyten, 2018). On the contrary, previous positive contact experiences with foreigners may enable Germans to perceive refugees and their needs in a more differentiated and individualized way, and possibly consider them as part of a culturally diverse German population, which reduces the perception of cultural differences (symbolic threat), buffers from anxiety when interacting with refugees in daily life, and may even foster curiousness to learn more about their needs by engaging in further interaction situations with refugees, rather than avoiding them (Paolini et al., 2018; Prati et al., 2021). Activating a category of social identity,

which defines refugees as a part of the German population, may enable Germans to adopt a more empathetic and individualized outlook on refugees, which may be conducive to social inclusion and integration, and therefore enhance mental health of Germans.

Aligned with the assumptions of ITT, our results on social identification with being German and the quality of contact extend the findings and implications of prior studies (Stephan et al., 2002; Velasco González et al., 2008) by showing strong indirect effects on mental health. Moreover, previous research concentrated on prejudice and attitudes towards ethnic minorities as the outcome variable. We could show that threat perceptions not only play a role for the cognitive facet of attitudes among members of the host community, but also seem to go along with affective reactions, which are related to these attitudes (Ketturat et al., 2016). So far, studies that examined the outcomes of threat perceptions concentrated mostly on the cognitive facet of prejudice against an outgroup. In this study, we focused on the mental health consequences of perceived threats in terms of psychological distress. Our results imply that the three threat types, which depict affective correlates of psychological distress are more relevant mediators between antecedents and distress, compared to negative stereotyping, which is cognitive in nature.

Strengths and Limitations

The present study has a number of strengths. To our knowledge, it is the first study to examine the relations between all four threat perceptions as proposed by ITT, their antecedents, and health outcomes in terms of distress by means of SEM at a latent level and with focus Germans as the members of the host community when thinking of incoming refugees. In our model, we differentiated the effects of frequency and the quality of intercultural contact experiences while specifying group identity with reference to national identification. Lastly, we tested the model with regard to the recent context of Germans and arriving refugees, which, to our knowledge, no other study has focused on yet.

Some methodological limitations need to be taken into account as well. First, due to the response rate of 48% in the randomly selected sample, generalizations to the German population cannot be made. Nevertheless, the study is based on a big sample of 1000 participants, which is an approximation of a representative German sample. Second, the cross-sectional design of the study does not allow determining causality in the relations among the study variables. Third, one might argue that the study is limited in its reliance on self-report measures. Instead of revealing actual differences, participants may have differed in their capability and willingness to report intensity levels across the study variables (Bryant et al., 1996). However, we were particularly interested in the self-perception of the participants as affective

manifestations of attitudes and its health-related correlates are essentially subjective in nature. We thus decided to focus on self-report for the current study but used only validated, well-established instruments for the questionnaire.

Fourth, the items of realistic and symbolic threat showed strong intercorrelations, which did not allow us to distinguish the effects of these two threat types. Therefore, we had to model these threats simultaneously in the SEM. Fifth, because previous research pointed out that members of the host community only seldom have contact with refugees and cannot distinguish them from other migrant groups, we assessed the quantity and quality of contact experiences regarding migrants in general. For future research, we encourage researchers to assess both measures with regard to refugees directly.

Future Directions and Conclusion

With our focus on the members of the host community and their perception of refugees, we were able to expand the empirical evidence for the ITT to include a recent context of rising levels of negative attitudes from Germans towards arriving refugees. With our study, we could show that perceiving refugees as threats poses a self-harming health risk for Germans, especially for the ones identifying highly with being German as they have a higher risk of feeling culturally threatened by the previously arrived refugees. This can lead to increased psychological distress while positive contact experiences have a reverse effect. Germans that experienced positive intercultural interactions are less prone to perceiving refugees as threatening. Instead, they benefit from these interactions with less psychological distress and therefore an increased mental health.

The present results suggest that the frequency of contact with foreigners in itself cannot lower the psychological distress Germans experience when thinking of refugees; neither can interactions with people in intercultural settings. However, the latter can cause a positive change of the way Germans perceive refugees which in turn can reduce psychological distress. The quality of intercultural contact experiences is crucial to benefit from a multi-ethnic and intercultural German society and to obtain or enhance mental health of both, refugees and Germans. This observation is important, especially for practical approaches to lower threat perceptions of Germans and support solidarity between them and refugees. The German government could for example fund buddy programs for people of culturally different background who work in similar jobs/ branches, in order to promote intercultural contact experience, as it poses as crucial antecedent of low threat perceptions. Additionally, the government could embed the program in an information campaign that is targeted towards the merits of approaching intercultural contact, as an engaging

counterpart against dividing tendencies in politics, society and media (see also Paolini et al., 2018). Educational programs, awareness trainings in the workplace and informational campaigns can help fostering intercultural contact and evolve social identities towards a less exclusive group identity if they are based on seeing people as social beings who are being drawn towards group they perceive as similar to themselves, in one way or another (Mols et al., 2014). Following the example, social identity with being German could evolve towards a more open understanding of who is German, in order to reduce the amplifying effect on Germans' threat perceptions towards refugees.

Further research should focus more on the effect of attitudes towards refugees and their predictive strength regarding the psychological distress of Germans. There should be more studies on antecedents of threat perceptions in the context of refugees, especially to figure out under which conditions contact frequency has negative or positive effects on threat perceptions, and which determinants are relevant for qualitative intergroup contact. We encourage future research, which examines whether our results also apply to other countries and to members of other host communities. A high social identity on the national level in the respective countries should be taken into account as a factor that can influence attitudes towards refugees as well as psychological distress of the host societies. An increased knowledge about these processes on an international level can help finding practical solutions to enhance a shared social identity and the united growth of societies where cultural diversity is seen as a chance and enrichment, not as a burden or a threat.

Declarations

The authors have no relevant financial or non-financial interests to disclose.

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