The negative secondary transfer effect: underlying processes and facilitating conditions

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Abstract

Background

The Secondary Transfer Effect (hereafter: STE) describes how contact with members of a (primary) outgroup alters also evaluations of uninvolved, secondary outgroups. Positive contact leads to better evaluations (positive STE), negative contact to worse evaluations (negative STE). Literature proposes three different kinds of underlying mechanisms (in methodological terms mediators). For mediators involving the outgroup (like 'threat' and 'attitude generalization'), contact affects secondary outgroup evaluations by shifting primary outgroup evaluations. For mediators involving the ingroup (like 'ingroup pride'), contact affects secondary outgroup evaluations by shifting ingroup evaluations. For mediators involving the self (like 'multiculturalism'), contact affects secondary outgroup evaluations by shifting the ideological worldview. Literature also suggests facilitating conditions for STE processes. Similarity in stereotype content associated with involved outgroups would facilitate threat or attitude generalization, and salience of recalled cultural elements STE via multiculturalism.

Objective

This dissertation tackles several gaps in STE research. Research gap 1 concerns the lack of research on negative STE. Research gap 2 concerns the recurring practice to study STE mediators cross-sectionally (which cannot disentangle implied causal sequences), focus on few theorized processes beyond attitude generalization, and study them one-at-a-time (which makes it difficult to disentangle or compare them). Research gap 3 concerns the fact that above mentioned facilitating conditions for STE processes were rarely empirically investigated in comparative study designs. Lastly, emergent results may help tackle the open question of whether positive and negative STE occur oppositely via the same processes.

Methods

Using secondary survey data, three studies are conducted. They draw upon a sample of native Germans who took part in the German ALLBUS survey and subsequently three waves of the GESIS panel. This enabled a multi-context investigation by three different primary outgroups: Foreigners living in Germany (Study 1; *N*= 1553 & Study 2; *N*= 390), Muslims living in Germany (Study 3, scenario A; *N*= 385) or Sinti & Roma living in Germany (Study 3, scenario B; *N*= 396). Data collection happened between 2015 and 2017 during the so-called 'Refugee crisis'. Refugees are thus always the secondary outgroup. Study 1 investigates positive and negative STE cross-sectionally via attitude generalization, multiculturalism, and ingroup pride within a parallel mediation path model using manifest indicators. Open answers to a question on conception of the group lable ‘Foreigners’ aided identifying respondents that perceived primary and secondary outgroup as overlapping. Study 2 longitudinally investigates STE via attitude generalization, multiculturalism, and threat within a parallel mediation CLPM with manifest indicators, accompanied by power analyses. Study 3, replicates study 2 within two further intergroup contexts, varying by primary outgroup. External classification frameworks are employed to assess similarity in stereotype content and salience of recalled cultural elements, and then hypothesize about the emergence of STE mediators. All studies include a control measure of secondary outgroup contact.

Results

Study 1 finds cross-sectional evidence for positive and negative STE, directly or indirectly via attitude generalization and multiculturalism (but not via ingroup pride). Study 2 longitudinally replicates finding the STE mechanisms from study 1, but finds no evidence for STE via primary outgroup threat. Scenario A of study 3 (primary outgroup 'Muslims') finds

longitudinal evidence for positive and negative STE via multiculturalism (but not via attitude generalization or threat) and direct positive (but not direct negative) STE. Scenario B of study 3 (primary outgroup 'Sinti & Roma') finds longitudinal evidence for direct positive and negative STE, but no evidence for STE via attitude generalization, threat or multiculturalism. Findings from study 3 did not always reflect the hypothesized similarity-based emergence of mediators. Statistically significant longitudinal STE paths had satisfactory statistical power.

Discussion & conclusion

In summary this dissertation helps tackle the identified research gaps within the conducted studies: more research on negative STE is conducted (c.f. Research Gap 1), whereby longitudinal study designs are utilized (c.f. Research Gap 2) and a multi-context investigation that uses similarity classification systems to empirically investigate theorized facilitating conditions (c.f. Research Gap 3). All studies found empirical evidence for negative STE within the context of the 'Refugee Crisis' in Germany, where individuals likely generalized from past contact experiences with other migrant outgroups to form an opinion on the newly arrived refugees. Negative STE thus seems to be a phenomenon that may co-occur with positive STE and (as the results indicate) via the same processes but in the opposite direction. These processes may include direct STE, attitude generalization or multiculturalism (which could newly be established as a mediator of negative STE). No indication for STE via threat or ingroup pride emerged in the investigated scenarios. However, the results indicate a contextually instable nature of STE. It remains yet unclear whether this contextuality can indeed be systematically linked to similarity in stereotype content as theory proposed. Methodologically refined further comparative experimental research seems necessary.

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The negative secondary transfer effect: underlying processes and facilitating conditions

In an every-day encounter, a person might have an altercation with another person who they do not personally know. Still they might get social cues of who this person is by recognizing to which group of people they belong (e.g. an ethnic, religious or political group). Based on the negative encounter one may think less of that specific person, but to give that meaning and learn from it for the future, one might think less of the whole group of which they are a member. For maximum 'efficiency' and 'just to be safe', one might also devaluate other social groups that one perceives as similar.

The reader might have noticed that two prejudicial generalizations are at play here. Firstly, there is a transfer of judgement from a single person to a social group as a whole, even though the negative encounter did not involve other members of the group. Secondly, there is a transfer of judgement from that social group to another, uninvolved social group. Literature terms the first-mentioned generalization "primary transfer effect" (Pettigrew, 2009, p. 55) of intergroup contact. It lies at the core of what the contact hypothesis (Allport, 1954) posits and has been widely scientifically documented (see e.g. Pettigrew, 2021). The second-mentioned generalization is termed "secondary transfer effect" (c.f. Pettigrew, 2009, p. 55; hereafter termed STE) and has been much less researched (Vezzali et al., 2021). Especially with regards to the secondary transfer effect of negative contact (herafter termed 'negative STE') there is little research. Negative STE is what this dissertation is about. Specifically, it is of interest to understand better, how and why it occurs (its underlying processes), and when it does occur in which manner (their facilitating conditions).

In the following introduction section, it shall be discussed what is known about the phenomenon 'Secondary transfer effect'. It shall become apparent that several research gaps

exist in the literature. Firstly, little is known about STE from negative contact. Secondly, while the STE describes a process, empirical evidence comes mostly from cross-sectional research, focussing on a handful of the proposed mediators often studied one-at-a-time. Lastly, it is unclear to what extent different mechanisms occur in different intergroup contexts.

Before the concept of STE can be introduced and those research gaps can be clarified, the reader needs to be familiarized with the basic issues and theories at hand. This shall be provided by the following first chapter. It aims to answer several questions that any reader unfamiliar with STE- or intergroup contact literature might have at this point. Why do we generalize from individuals to the in- and outgroup? Why does this have consequences for prejudice? How can intergroup contact be a vehicle for prejudice reduction?

Chapter I: Basic issues and theories

Why do we generalize from individuals to the in- and outgroup?

In our everyday lives we frequently encounter others who we do not know personally but who we want to make a judgement about. One way in which we do this is by categorizing them based on (perceived) group memberships and making a judgement based on how we generally feel about members of this other group. This cognitive-behavioral tendency – a "division of people into 'us' and 'them', into ingroups and outgroups" (Tajfel et al., 1971, p. 151) – has long been documented by psychological research. It seems to be an important aspect of how humans interact with the social world and we appear (to some extend) developmentally predisposed to it (Rhodes & Baron, 2019). As Liberman et al. (2017) summarize, thinking in social categories has the advantage of complexity reduction: "Forming conceptually-rich social categories helps people to navigate the complex social world by allowing them to reason about the likely thoughts, beliefs, actions, and interactions of others" (p. 556).

Why does this have consequences for prejudice?

We have established that people tend to categorize others into social groups but what exactly are the consequences and why can this be problematic? The short answer to this is 'ingroup favouritism' which can lead to discrimination. As laid out by realistic group conflict theory (RCT; see e.g. Campbell, 1965; Sherif et al., 1961; Sherif, 1966) this tendency to value the ingroup over outgroups appears under (perceived) conflict on resources and/or goals. Yet, later Tajfel & Turner's (Tajfel & Turner, 1979; Turner et al., 1987) social identity approach (SIA) elaborated that it might even appear absent of any conflict. It may be a more general evaluative tendency, aimed at maintaining self-worth ('self esteem'; see e.g. Hornsey, 2008 for a concise overview), that appears whenever social groups can be distinguished. This is even the case if those groups are 'minimal', meaning grouping characteristics are seemingly random and membership is void of any real consequences (Tajfel, 1970; Tajfel et al., 1971). In the following both afore mentioned theories are briefly laid out, starting with RCT and continuing with SIA.

Realistic group conflict theory

Realistic group conflict theory set out to elaborate under which conditions social categorization into an ingroup and outgroup(s) might lead to discrimination. Pre-existing psychological research on outgroup discrimination and prejudice had predominantly focussed on individual characteristics of discriminating individuals (c.f. Hornsey, 2008, p.1). RCT (see e.g. Campbell, 1965; see also Sherif & Sherif, 1953; Sherif et al., 1961; Sherif, 1966 as cited in Jackson, 1993) however, demonstrates that outgroup discrimination can easily occur absent such characteristics. As summarized by Worley (2021), RCT assumes that intergroup conflict stems from conflicting real interests of the groups. To create such conflict and the ensuing outgroup derogation, one might simply take some psychologically normal individuals with similar

characteristics, divide them randomly into two groups and create a situation where both groups have conflicting goals and compete over scarce resources. This is exactly what Sherif et al. (1961) did in the famous 'Robbers Cave' experiment. Within a summer camp, two groups of psychologically normal twelve-year-old boys from similar backgrounds were randomly put into two groups. First, group attachement and ties were fostered by keeping both groups separate but stimulating friendly cooperative activities to attain common goals within the group. Then both groups were put into conflict (resulting in insults, theft and property destruction) by competing over scarce resources (e.g. in a tug-of-war where only the winning group got a prize). Later research could reproduce this in other social scenarios (see e.g. Diab, 1970 as cited in Jackson, 1993) and elaborate on the theoretical underpinning (see e.g. Jackson, 1993 for an overview).

The Social Identity Approach

The Social identity approach offers an explanation as to why social categorization can lead to outgroup discrimination even in absence of any conflicting goals or resources: due to its functionality of maintaining positive self-esteem (see e.g. Hornsey, 2008 for an overview). This theoretical approach is rooted in combining two of the most well-known theories of intergroup relations: social identity theory (Tajfel & Turner, 1979) and self categorization theory (Turner et al., 1987). Social identity theory posits that individuals strive for a positive self-image, meaning the desire to stand out in a positive manner. The psychological term for this is 'self-esteem' (c.f. Tajfel & Turner, 1979, point 2). Positive self-esteem can of course be realised by individual achievement and talent (so-called personal self-esteem; c.f. Rahimi & Strube, 2007, p.59) but a more fail-proof way is via membership of a group that is held in positive regard (so-called specific collective self-esteem; c.f. Martiny & Rubin, 2016, p.4). The latter may be achieved by devalueing outgroups, making the ingroup appear better in comparison (Martiny & Rubin, 2016).

Self-categorization theory – the second part of the social identity approach – elaborates how exactly we form social categories. As Hornsey (2008) reiterates, it was brought about to "elaborate and refine the cognitive element of the [social identity] theory" (p. 207). The theory posits that social categorizations can be done at various levels of inclusiveness and abstraction, ranging from 'I as an individual' (personal identity; c.f. Hornsey, 2008, p. 208) to 'this group of individuals' (social identity; c.f. Hornsey, 2008, p. 208), to 'all individuals' (human identity; c.f. Hornsey, 2008, p. 208). Notably, humans do not persistently choose a single one of these ways of self-categorization, but might vary contextually based on the instrumentality in the specific situation (for further details see e.g. Hornsey, 2008, p. 208). Intertwined with this self-categorization are cognitive and behavioral consequences referring to one's own actions and cognition but also the actions and cognitions that one elicits in others based on said self-categorization. Notably there occurs so-called depersonalization, in the sense that

> "people cognitively represent their social groups in terms of prototypes… [meaning] …people come to see themselves and other category members as less individuals and more as interchangeable exemplars of the group prototype… [which] …prescribes what kinds of attitudes, emotions and behaviour are appropriate" (Hornsey, 2008, pp. 208-209).

It goes without saying that there is a potential for stereotyping when thinking of oneself and (appropriate behaviour towards) others in such prototypical fashion.

How can intergroup contact be a vehicle for prejudice reduction?

Having established that people tend to categorize others and themselves into social groups, as well as the potential for outgroup discrimination and prejudice that follows, we might

ask ourselves what we can do about this. Following the horrors of World War 2 and in light of then contemporary racial tensions and segregation, early social psychologists (e.g. Allport, 1954) wondered the same thing and deviced strategies to diminish discrimination. A very prominent approach steeped in empirical support is intergroup contact (Pettigrew, 2021). The basic idea is as follows: bring individuals into contact with outgroup members, so that positive experiences increase their opinion of the encountered outgroup member and by extension of the outgroup as a whole (for a more detailed schematic representation see Pettigrew, 2021, Fig. 1). Allport (1954) had also theorized that such an effect would be most pronounced when the intergroup contact situation fulfils certain requirements. The individuals involved should have common goals. They should perceive their groups to be of equal status, and try to reach their common goals via cooperation. Thereby they should also perceive institutional support for the interaction between members of both social groups (Allport, 1954).

Since this contact hypothesis was initially proposed, it has been studied widely by social scientists and a large number of studies found empirical evidence supporting it (see e.g. Pettigrew & Tropp, 2006 for a meta-analysis; see Pettigrew, 2021 for a contemporary review). In a first meta-analysis Pettigrew & Tropp (2006) found a prejudice-reducing effect of intergroup contact (around r= -.21; c.f. Pettigrew & Tropp, 2006, Table 1) over a total of 717 samples stemming from 515 independent studies conducted in 38 nations. Pettigrew & Tropp (2006) also found that this effect was most pronounced under the four optimal contact conditions that Allport (1954) had described (common goals, equal status, cooperation, institutional support). However, the prejudice reducing effect of contact also emerged in the absence of these conditions, such as in every-day superficial contact.

The prejudice reducing effect of various modes of contact

Since then, the prejudice-reducing effect of many specific types of intergroup contact could be documented. As Pettigrew (2021) mentions, a follow-up study conducted by Davies et al. (2011), asserted that intergroup friendship may work particularly well for prejudice-reduction, given that Allports (1954) conditions are satisfied. Later studies on the prejudice-reducing effect of intergroup friendships likewise found overwhelming empirical support for this notion (see Pettigrew, 2021). However, in the same way, many subsequent studies could assert the prejudice-reducing effect of superficial day-to-day intergroup contact (see e.g. Thomson & Rafiqi, 2017; Bohrer et al., 2019). This notion is essentially important, since instances of superficial contact in the form of day-to-day interactions likely happen with much higher frequency, than any scenarios of contact where the conditions specified by Allport (1954) are met (Thomson & Rafiqi, 2017). Another line of research could furthermore establish the prejudice-reducing effect of vicarious intergroup contact (being aware that other members of your ingroup interacted with members of an outgroup; see Vezzali et al., 2021, p. 28 for a list of studies) as well as imagined intergroup contact (mentally simulating an intergroup encounter; see e.g. Crisp & Turner, 2012). The latter might serve particularly well as a vehicle for prejudice reduction within intergroup contexts where personal interactions with outgroup members are predominantly hostile (see Crisp & Turner, 2012, p. 5) or "are difficult, rare or non-existent" (Crisp & Turner, 2012, p. 62).

The prejudice-fostering effect of negative contact

As the previous sentence highlights, intergroup contact is not always positive in nature. We might ask ourselves, what happens when members of two different social groups interact in a bad way. Logically, the involved individuals may think less of each other, but the question is, will there also be primary transfer, meaning a devaluation of the whole social group to which the

other belongs? Fewer studies have investigated the consequences of negative intergroup contact (c.f. Schäfer, 2020, pp.4-6), but their results highlight that such contact might increase prejudice (see e.g. Barlow et al., 2012). This notion could be empirically supported in several correlational studies (see e.g. Arnadottir et al., 2018; Barlow et al., 2012; Barlow et al., 2019; Dhont & van Hiel, 2009; Graf et al., 2014; Meleady & Forder, 2018, study 1; Paolini et al., 2014; Stark et al., 2013), longitudinal studies (see e.g. Reimer et al., 2017; Barlow et al., 2019; as cited in Schäfer, 2020) and a few experimental studies (see e.g. Paolini et al., 2010, 2014; Meleady & Forder, 2018, studies 2A & 2B), that spanned a variety of intergroup scenarios.

Researchers have wondered about the joint effect of both positive and negative contact on prejudice. Firstly, studies have indicated an interaction effect (Arnadottir et al., 2018). Thereby negative contact is especially prone to foster prejudice, when no positive contact has occurred, whereas, positive contact is especially prone to reduce prejudice, when no negative contact has occurred. Lastly, researchers have wondered, whether the prejudice-fostering effect of negative contact is systematically stronger than the prejudice-reducing effect of positive contact (see e.g. Graf et al., 2014). There is some empirical indication for this so-called valence asymmetry, but the results are ambiguous (see Schäfer, 2020, p.1 for a list of studies).

Mechanisms by which contact affects prejudice

Concerning the question how exactly contact reduces prejudice, research could identify several mechanisms (in methodological terms mediating effects) that play a role (see Pettigrew & Tropp, 2008 for an early review). Notably, it appears that the prejudice-reducing effect of positive contact seems to happen via the same mechanisms, as the prejudice-fostering effect of negative intergroup contact (c.f. Vezzali et al., 2021). Firstly, intergroup contact might affect prejudice via a shift in emotions, be it concerning empathy for the other group (see e.g. Aberson

& Haag, 2007; Harwood et al., 2005; Pagotto et al., 2010; Pagotto & Voci, 2013; Tam et al., 2007; Turner et al., 2007; Swart et al., 2010, 2011, as cited in Nell, 2017), concerning anxiety about interacting with them, (see e.g. Islam & Hewstone, 1993; Pagotto & Voci, 2013) or concerning the perceived threat from that group (see e.g. Stephan et al., 2000; 2002; Tausch et al., 2007; Tausch et al., 2009, as cited in Aberson, 2015). Secondly, cognitive processes may be at play, such as change in the perception of the norms that in- and outgroup hold against one-another (Turner et al., 2008), a shift in self-categorization (Turner et al., 2008; termed 'inclusion of the outgroup in the self'), or a re-categorization of intergroup boundaries (Eller & Abrahms, 2004). Lastly, there is indication that contact might affect prejudice because the individual challenges their general view on intergroup relations and the (dis)advantages associated with the presence of outgroups (see e.g. Wallrich et al., 2022).

Chapter II: The Secondary Transfer Effect

As the last sentence implies, the effects of intergroup contact have the potential to extend to other, uninvolved, outgroups. Indeed, early studies on intergroup contact had already indicated such a generalizing effect (e.g. Oliner & Oliner, 1988, as cited in Pettigrew, 2009). Later this phenomenon was officially labelled under the term secondary transfer effect (Pettigrew, 2009). As Pettigrew (2009) summarizes, prejudice-reduction from primary outgroup contact generalizes and extends to an uninvolved secondary outgroup. The contacted outgroup is thereby called the 'primary outgroup' and the uninvolved group to which one generalizes is termed 'secondary outgroup' (c.f. Pettigrew, 1997)

Although Pettigrew's (1997) initial work sparked interest in the phenomenon STE (see e.g. Eller & Abrahms, 2004), it remained rather under-researched for some time. In their meta-analytical study from 2006 Pettigrew & Tropp had noted that only a handful of the covered

studies had concerned themselves with this subfield of intergroup contact research. However, a lot of research has happened since then and nowadays the basic idea of the secondary transfer effect of intergroup contact could be empirically supported by many independent studies (see e.g. Vezzali et al., 2021 or Ünver et al., 2022 for a review). Just like the primary transfer effect of intergroup contact, the STE also emerges from imagined intergroup contact and from vicarious intergroup contact. The review study by Vezzali et al. (2021) lists experimental studies that found evidence for STE from imagined contact (De Carvalho-Freitas & Stathi, 2017, studies 1 & 2; Harwood et al., 2011; Visintin et al., 2017) or vicarious contact (Andrews et al., 2018; Joyce & Harwood, 2014). Regarding one type of vicarious contact, multicultural experiences, Sparkman (2020) further provides a meta-analysis which determines an effect size of r= .10* (for similar secondary outgroups).

STE from negative contact

Just as contact literature in general has had an over-focus on the effects of positive intergroup contact, the literature on STE has had the same 'positivity bias'. As the review studies by Vezzali et al. (2021) and Ünver et al. (2022) highlight, few studies incorporate even a measure of negative intergroup contact, let alone focus on it. Thus, it does not come as a surprise when Jasinskaja-Lahti et al. (2020) state that "research on whether STE also occurs for negative contact is only just emerging, although extant evidence seems to point to this direction" (p. 1221). In their review, Vezzali et al. (2021) list a total of only nine studies that investigated negative STE (experimental: Andrews et al., 2018; Harwood et al., 2011; Jasinskaja-Lahti et al., 2020; Joyce & Harwood, 2014; longitudinal: Mähönen & Jasinskaja-Lahti, 2016; correlational: Brylka et al., 2016; Lissitsa & Kushnirovich, 2018; Meleady & Forder, 2018; Zingora & Graf, 2019), advising research on negative STE as one of the necessary future directions of STE

research. During the time in which this dissertation was conducted, to my knowledge only a handful of further empirical studies on negative STE were published. This includes a cross-sectional study by Ünver et al. (2021), published in parallel to the first study of this dissertation and a longitudinal study of Kauff et al., (2023), that was published in parallel to the second study of this dissertation. I identify the lack of negative STE research as the first research gap (**RG1**).

Chapter III: Mechanisms behind the STE

Next to the issue whether STE can emerge, researchers have also been interested in how exactly it occurs. I present an overview on the current state of research in this chapter. It shall lead me to conclude the second research gap: knowledge on STE mediators comes mostly from cross-sectional research, focussing on a handful of the proposed mediators often studied one-at-a-time (**RG2**).

An early attempt to investigate the mechanisms behind STE can be found in a study of Pettigrew from 2009. In this study, Pettigrew (2009) describes the theorized underlying process in more detail: "attitudes toward a noncontacted outgroup improve over and above any effect of contact with that outgroup following the attitude change that occurs with the contacted outgroup" (Pettigrew, 2009, p.55). This mechanism has since been termed 'attitude generalization', given that the attitude specific to the primary outgroup is generalized to other secondary outgroups. Most research on (negative) STE focusses on this theorized underlying process. In a meta-analytical study Vezzali et al. (2021) provide a picture on empirical STE research, showing that most studies find confirmation of the attitude generalization principle. Empirical evidence is found in correlational studies (Brylka et al., 2016; Jasinskaja-Lahti et al., 2020; Lissitsa & Kushnirovich, 2018; Pettigrew, 2009, sample A & B; Pettigrew & Tropp, 2008; Schmid et al., 2012; Schmid et al., 2013 study 1 & 2; Schulz & Taylor, 2018; Sparkman, 2020; Tausch et al.,

2010, study 1 to 3; Ünver et al., 2021; Vezzali et al., 2020; Vezzali, Di Bernardo et al., 2018), longitudinal studies (Bowman & Griffin, 2012; Tausch et al., 2010, study 4) and experimental studies (Harwood et al., 2011; Joyce & Harwood, 2014; Hane & Nordström, 2021).

Next to attitude generalization, further theories concerning mechanisms behind (negative) STE have been formulated and empirically tested. The following sections provide a clear overview what STE research theorizes with regards to mechanisms underlying STE in general as well as negative STE specifically. An early attempt at such an overview had been provided by Lolliot et al. (2013), although research has advanced since then. A more recent structured overview on the various theorized mechanisms is given by Vezzali et al. 2021 (see Figure 1 there). Vezzali et al. (2021) group these mechanisms (or in methodological terms mediators) into three categories: 'Mediators involving the ingroup', 'Mediators involving the outgroup' and 'Mediators involving the self'. The first mentioned group includes theorized processes whereby contact with the primary outgroup changes how one views the ingroup, which in turn affects one's attitude towards (primary and secondary) outgroups. The second mentioned group contains theorized mechanisms whereby contact with the primary outgroup changes the view on that particular outgroup and consequently the attitude towards the secondary outgroup. The last mentioned group of theorized mediational processes differs in the sense that contact with the primary outgroup leads to change in personal views or ideology, which in turn affects how one views outgroups in general and accordingly also the primary and secondary outgroup. I shall describe each group in more detail in the following sections. I shall denote the specific mediational processes which it contains and for each of those, I give a concise definition, reiterate their theoretical grounding and the current state of empirical research.

Mediators involving the outgroup

The first mediator category that Vezzali et al. (2021) introduced are 'Mediators involving the outgroup'. This category included theorized mediational processes whereby contact with the primary outgroup affects an evaluation concerning that specific group and subsequently concerning the secondary outgroup. Vezzali et al. (2021) named the following mediators: Intergroup emotions, Outgroup morality, Intergroup threat, Group representations.

Intergroup emotions

The idea that intergroup emotions should act as a mediating mechanism within STE is rooted in the fact that they have proven to be mediators in the effect of contact on primary outgroup attitudes (see e.g. Nell, 2017, p. 34 who provides a list of sources). As Vezzali & Giovanini (2012) note, Pettigrew (2009) had early on pointed out that "the secondary transfer effect may largely depend on affective factors" (Vezzali & Giovanini, 2012, p. 127). A number of such factors shall be discussed in the following subsections. This list has been extracted from the review study by Vezzali et al. (2021) as well as earlier literature.

Affective ties. One affective mediator of STE is a concept, that literature terms affective ties or Inclusion of the Other in the Self (c.f. Vezzali & Giovanini, 2012, p. 127; Vezzali et al., 2021, tables 1-3). Eller & Abrahms (2004), who first introduced this mediator base it conceptually on the theorizations of Pettigrew, who had stated that "close affective ties generated by intergroup friendship may achieve cross-group identification" (Pettigrew, 1997, p. 174). As mentioned the concept is frequently measured via the Inclusion of Other in the Self Scale (Aron et al., 1991), as a rating of interpersonal or intergroup closeness, which Eller & Abrahms suspect to be a less-than-optimal operationalization (c.f. Eller & Abrahms, 2004, p. 237). Indeed, results from a longitudinal study which found support for the mediational role of affective ties (Eller & Abrahms, 2004; study 1) could not be replicated in subsequent research (Eller & Abrahms, 2004;

study 2). Methodological differences in temporal delay and involved groups could explain this inconsistency. It is noteworthy that the mediational role of affective ties was solely investigated regarding STE from positive contact and more research involving negative STE is needed.

Empathy. As Nell (2017) describes, empathy can be subdivided into the emotional component, affective empathy (see e.g. Batson et al., 1997 as cited in Nell, 2017) and the more cognitive aspect perspective taking (Galinski & Moskowitz, 2000 as cited in Nell, 2017). Both components were shown to mediate the primary transfer effects of contact (see e.g. Harwood et al., 2005; Swart et al., 2010, 2011, as cited in Nell, 2017). Thus, they were also investigated as mediators of STE within correlational studies (see e.g. Giovannini & Vezzali, 2011; Nell, 2017; Schulz & Taylor, 2018; Vezzali & Giovannini, 2011, 2012). Longitudinal research has not yet been conducted and studies focussed solely on positive STE. More research involving negative STE is needed.

Anxiety. Anxiety has been shown to be another affective mediator underlying secondary transfer effects (see e.g. Vezzali & Giovannini, 2012). Vezzali & Giovanini (2012) describe how the general idea of this mediational process is rooted in the fact that anxiety mediates contacts primary transfer effect. These authors also provide a comprehensible definition of anxiety, which draws upon early research by Stephan & Stephan (1985), referring to it as "feelings of uneasiness in anticipation of interacting with out group members" (Vezzali & Giovanini, 2012, p.128). Longitudinal evidence regarding its mediational role within the secondary transfer effect comes from a study by Turner & Feddes (2011), next to aforementioned study by Vezzali & Giovanini (2012). Both studies solely focus on positive STE, so research involving negative STE is needed.

Trust. The idea that outgroup trust might be a mediator of STE rests on the fact that it has been established as a mediator of contacts effect on primary outgroup attitudes (see e.g.

Hewstone et al., 2006, as cited in Zezelj et al., 2020). Zezelj et al. (2020) define trust as an expectation of "goodwill and positive intention from others" (p. 2). Zezelj et al., (2020) also show empirical evidence for this STE mediator: trust mediated the effect from positive primary outgroup contact (with ethnic groups, Roma, the poor, or people with disabilities) to secondary outgroup (gay people) evaluation in a sample of adolescents from Balkan countries. Studies involving negative contact, experimental or longitudinal designs, are yet absent.

Outgroup morality

As with the previously covered mediator, the idea that outgroup morality might act as a mediator of STE lies within the fact that it emerged as a mediator of primary contact effects (see Brambilla et al., 2013, as cited in Vezzali et al., 2021). According to Brambilla et al. (2013) morality "pertains to the perceived correctness of social targets (e.g., trustworthiness, honesty)" (p. 650). Empirical evidence for this STE mediator comes from a single correlational study (Vezzali et al., 2021) involving a sample of adolescents of Italian origin and adolescents who had a migration background. The scrutiny of morality as a mediator of STE remains to be tested, since there are no longitudinal or experimental studies, no studies involving negative STE, and no studies involving non-adolescent samples.

Intergroup threat

Similar to the above mentioned mediators, the idea that intergroup threat could mediate the association between primary outgroup contact and secondary outgroup attitude stems from findings that threat mediated the primary contact effect (see e.g. Aberson, 2015, as cited in Zingora & Graf, 2019). Zingora & Graf (2019) further elaborate how intergroup threat theory (Stephan et al., 2009) speaks of a topological network in which similar threats are more closely connected. This would hint at a similarity-based generalizing potential of threat - akin to the

idea of an attitude generalization gradient, previously introduced by Pettigrew (2009). Empirical investigations for threat as a mediator of STE include a correlational study (Zingora & Graf, 2019) and a longitudinal study (Mähönen & Jasinskaja-Lahti, 2016). Interestingly, both studies come to different conclusions, whereby Zingora & Graf (2019) find empirical support for the mediating role of threat but Mähönen & Jasinskaja-Lahti (2016) do not. Alas there are many methodological differences between both studies, which are also set apart in terms of time, and the investigated combination of primary and secondary outgroup. Adjacent to the idea of topological networks introduced by Zingora & Graf (2019) the seemingly conflicting account of both studies might rest on the fact that both contexts differ regarding the similarity of investigated groups – an idea which unfortunately, cannot be proven as it was not measured in either studies. No experimental research seems to exist as of now but interestingly enough both aforementioned studies cover positive as well as negative STE, reaching the same conclusion for both within each study but with conflicting accounts across studies.

Group representations

As Vezzali et al. (2021) show, another 'Mediator involving the outgroup' relates to the way in which it is structurally represented in relation to the ingroup (c.f. Table 2 there). The idea that so-called group representations could mediate STE was first introduced by Eller & Abrahms (2004). Conceptually, it is based in Gaertner et al.'s (1993) Common Ingroup Identity Model as well as theorizing of Pettigrew (1997). The model describes how contact might reduce prejudice via a stepwise recategorization of ingroup and outgroup boundaries, ranging from two distinct entities to a common entity under a superordinate category. This would divert part of the effects from ingroup favouritism to the (former) outgroup. Similar ideas (though with different temporal sequence) had been proposed by Pettigrew in his 1997 extension of the contact hypothesis. In a

first study by Eller & Abrahms (2004), there was a longitudinal mediation from quality of contact to primary outgroup representation at the superordinate identity level, to the evaluation of the secondary outgroup (see Eller & Abrahms, 2004, p. 239). However, a conceptually similar second study found no longitudinal mediation. For several reasons it might be questionable whether outgroup representations as a mediator of STE would re-emerge in contemporary research. The first reason relates to the rather small sample size of the original studies. Secondly, the conducted analytical techniques do not stand up to contemporary standards for longitudinal intergroup contact research. Thirdly, the failure to replicate results from study 1 in study 2 may be indicative of a mismatch in underlying theory. Lastly, neither studies incorporated negative contact, which could potentially distort the picture.

Summarizing, there is overall a lot of empirical support for mediators involving the outgroup. In some cases, this is rather thinly spread across the various investigated concepts. Many times the investigated mediators are constructs that were already established as mediators of contacts effect on primary outgroups. It is noteworthy that studies involving negative STE are particularly scare and for certain mediators (especially threat) give conflicting accounts.

Mediators involving the ingroup

The second mediator category that Vezzali et al. (2021) introduced are 'Mediators involving the ingroup'. Included are theorized mediational processes whereby contact with the primary outgroup affects an evaluation concerning the ingroup, which subsequently affects how outgroups are perceived: not only the primary outgroup but also other secondary outgroups. According to Vezzali et al. (2021) covered mediators include deprovincialization (including ingroup identification & -attitudes) & social identity complexity.

Deprovincialization

The deprocvincialization hypothesis was originally coined by Pettigrew (1997), who described how positive intergroup contact:

> "may often involve a reappraisal of the in-group, a process of deprovincialization. That is, close contact can provide insights about in-groups as well as out-groups. In-group norms, customs, and lifestyles turn out not to be the only ways to manage the social world. This new perspective not only individualizes and 'humanizes' out-group members but serves to distance you from your in-group" (Pettigrew, 1997, p. 174).

The reader will have noticed that multiple processes are described in the above definition. Firstly, a distancing from the in-group. Secondly, a humanization of outgroup members. Later authors such as Lolliot (2013) or Ebbeler (2020) mentioned how broad the above definition is, and how it can be understood in multiple ways with regards to the hypothesized mediational processes. Indeed, literature focussed on various facettes that Pettigrew (1997) mentions in the definition (see Ebbeler, 2020). Some studies focussed on the distancing from the ingroup, which was operationalized in terms of ingroup attitude or ingroup identification (c.f. Lolliot et al., 2013, p.89), whereas others focussed on the humanizing of outgroups. The latter group of studies does not fall under the label 'Mediators involving the ingroup' and should thus be discussed later on.

Operationalizations. Focussing on the first group of studies, several operationalizations can be distinguished. The first two operationalizations, ingroup attitude, and ingroup identification are relatively self-evident. The others shall be discussed here. Closely related to ingroup identification, Tausch et al. (2010) use a measure of private collective self-esteem to capture ingroup reappraisal. This was measured with two items reflecting whether participants felt happy to be part of the ingroup and were proud of their ingroup membership. A study by

Brylka et al. (2016) utilize the related but clearly distinct concept of public collective self-esteem, which was defined as "one's perception of how other people, that is members of various outgroups, evaluate his or her ingroup" (p. 11). Vezzali & Giovannini (2012) utilize a measure of social distance. Lolliot et al. (2013) discuss the concept of social identity complexity as people's "cognitive representation of the interrelationships between their multiple ingroup identities… …[which might make them] realize that they may share ingroup membership with another person on one category… …but may perceive that person as an outgroup member on another category" (p. 91). This description in turn overlaps with the concept of common ingroup identity, first coined by Gaertner et al. (1993) and introduced to STE literature by Eller & Abrahms (2004).

Empirical evidence. Lolliot et al. (2013) suggest that the variety of instrumentalization could explain why empirical evidence regarding deprovincialization is mixed. Empirical evidence is found in correlational studies (Ingroup identification: Pettigrew, 2009, sample A & B; Social identity complexity: Schmid et al., 2013, study 2) and experimental studies (Social distance: Vezzali & Giovannini, 2012; Zezelj et al., 2020; Private collective self-esteem: Tausch et al., 2010, study 1; Public collective self-esteem: Brylka et al., 2016). However, other correlational (Ingroup identification: Schmid et al., 2013, study 1 & 2; Ingroup attitude: Schmid et al., 2013, study 1 & 2; Tausch et al., 2010, study 2 & 3; Social identity complexity: Schmid et al., 2013, study 1), longitudinal (Ingroup identification: Eller & Abrahms, 2004, study 1 & 2; Ingroup attitudes: Tausch et al., 2010, study 4; Private collective self-esteem: Tausch et al., 2010, study 4) and experimental (Ingroup attitudes: Shook et al., 2016) studies find no such evidence.

Summarizing one can say that empirical evidence for mediators involving the ingroup is rather mixed. As noted in the early literature review of Lolliot et al. (2013), this might very well

stem from the vastly different operationalizations employed across the different studies. While some of said studies go beyond a cross-sectional design and are experimental in nature, it is noteworthy that negative STE is rarely investigated – a research gap that needs to be filled.

Mediators involving the self

The third mediator category that Vezzali et al. (2021) introduced are 'Mediators involving the self'. This category stands out in the sense that the included mediational processes are rooted in the idea that intergroup contact changes ideological core beliefs which then affect how (primary and secondary) outgroups are viewed. On first glance this might sound similar to the description of 'mediators involving the ingroup'. The distinction is that theories from aforementioned category stress how contact changes ingroup-specific views and evaluations. Contrastingly 'mediators involving the self' stress how contact changes one's general worldview and ideology. According to Vezzali et al. (2021) this category includes the following: change in personality, change in ideological variables. As Vezzali et al. (2021) state and as will become apparent in the next passages, rather little research has covered this type of STE mediators. I start out by examining the scarce evidence surrounding these mediators mentioned in Vezzali et al. (2021). I shall then elaborate how an additional STE mediator, incorporated into the earlier review of Lolliot et al. (2013), also fits this category and is an excellent candidate for further study given the theoretical and empirical grounding: Multiculturalism.

Change in personality

As mentioned within the review study of Vezzali et al. (2021) this category of mediators involving the self includes constructs such as social dominance orientation (Shook et al., 2016; Vezzali et al., 2018), and dispositional perspective taking (c.f. Schulz & Taylor, 2018). We first

cover these two constructs, before recounting later work involving some of the aforementioned review's co-authors, which explores the association in more detail (Vezzali et al., 2022).

Social dominance orientation. Social dominance orientation (short SDO) "can be conceptualized as a social-ideological, individual difference variable reflecting support for social hierarchies… …[that] largely qualifies as a personality factor" (Vezzali et al., 2021, p. 26). Since it has been shown that contact can shape SDO, "making individuals more oriented toward tackling intergroup inequalities" (Vezzali et al., 2021, p. 26) it has been deemed a potential mediator of STE. Initial empirical support came from an experimental study by Shook et al. (2016). Among first-year college students randomly assigned to live with a same- or different-race-roommate, those living with a different-race-rommate "displayed less SDO, and in turn reduced prejudice toward a series of racial secondary outgroups 2-3 months after room assignments" (Vezzali et al., 2021, p. 26). A later conducted correlational study by Vezzali et al. (2018) could reproduce this among another target population, and in another intergroup context. Both studies share certain characteristics that may limit the generalizability of their findings to other intergroup scenarios. Firstly, both involve rather deep, non-superifical contact. Secondly, both involve positive intergroup contact. To further cement the notion of SDO as a mediator of STE further research seems warranted.

Dispositional perspective taking. This potential STE mediator was investigated in a cross-sectional study by Schulz & Taylor (2018). These authors provide several arguments as to why dispositional perspective taking might mediate STE, including the finding that it "may develop from previous negative life events, including intergroup conflict" (p. 7). Schulz & Taylor (2018) defined perspective taking "as the ability to understand how a situation appears to another person and how that person is reacting cognitively and emotionally to the situation" (p.

7) and assessed it's dispositional or personality-related component via the Prosocial Personality Battery. Among university students from Northern Ireland, contact with the other confession (catholics for protestant participants and vice versa) exerted a significant indirect effect on the attitude towards secondary outgroups (assessed as support toward Syrian resettlement) via dispositional perspective taking. Three things become apparent, which limit the generalizability of aforementioned study. Firstly, it takes place in a very specific ethno-religious conflict and among university students. Secondly, the contact measure consisted of a single item concerning a general evaluation of the overall (un)pleasantness of contact with the primary outgroup, which does not enable to disentangle the effects of positive and negative intergroup contact, their frequency or their interplay. Thirdly, it seems questionable to what extent an average study participant would be able to distinguish between this trait-measure of perspective taking and the outgroup specific perspective taking measures that Vezzali et al., (2021) count as mediators involving the ingroup. In short, more research seems warranted.

Further personality factors. As mentioned beforehand, later work involving some of the co-authors involved in Vezzali et al's. (2021) review study further explored the possibility that personality traits mediate STE (Vezzali et al., 2022). Thereby the authors explicitly focussed on (some of) the Big Five personality traits. Said work involves two longitudinal studies conducted within samples of Italian school children. Two personality-related STE mediators were investigated: dispositional empathy in study 1 and agreeableness in study 2. The primary outgroup were immigrants and the secondary outgroup were gay people. While there was an indirect effect from contact to agreeableness to secondary outgroup attitude, no such indirect effect emerged with regards to dispositional empathy. The generalizability of the results may be questioned on two accounts. Firstly, the study involved elementary school children in a

monitored classroom setting with more-or-less structured interactions, which raises the question whether the studied processes would replicate in the same manner within unstructured, more anonymous, superficial intergroup contact among adults. Secondly, the study utilized a single overall contact measure similar to the one employed by Schulz & Taylor (2018) so that the effects of positive and negative intergroup contact, their frequency or their interplay cannot be disentangled. In conclusion, the study offers another avenue that researchers interested in personality-related STE mediators should explore further: big-five related mediators.

Change in ideological variables: Multiculturalism

Although they schematically name this group of 'Mediators involving the self', Vezzali et al. (2021) do not further elaborate on it or tie it to any conducted empirical study. However, mediators that were not covered by Vezzali et al., (2021) could be counted in to this category given their ideological underscore. One candidate is the concept of Multiculturalism, that Lolliot (2013) identified as the second kind of process involved in Pettigrew's (1997) deprovincialization hypothesis (c.f. Ebbeler, 2020). Specifically, this concerns the first part of what Pettigrew (1997) describes: "This new perspective not only individualizes and 'humanizes' out-group members…" (Pettigrew, 1997, p. 174). Similar to many other mediators mentioned previously, the idea that Multiculturalism could be a mediator of STE was further based upon empirical observations that it was associated with primary outgroup contact (c.f. Verkuyten et al., 2010, as cited in Lolliot, 2013) and also with improved (primary) outgroup attitudes (Levin et al., 2012; Verkuyten, 2005, as cited in Lolliot, 2013). Thereby Lolliot (2013) defines the term Multiculturalism as "the acceptance and appreciation of others' culture and cultural practices" (Lolliot, 2013, p. 49), which they say "closely mirrors the processes whereby intergroup contact helps individuals realise that their groups' norms, values, and customs are not the only compass

one can use to navigate the social seas." (Lolliot, 2013, p. 49). As Lolliot (2013) stresses, such a worldview "not only acknowledge the multiplicity of group differences and memberships, but celebrates them" (Lolliot, 2013, p. 50). First empirical evidence for Multiculturalism as a mediator of STE came from a number of studies that Lolliot, (2013) conducted as part of his dissertation. We shall later cover them in more detail within chapter IV where a schematic overview can be found in Table 1. For now, I concisely recount the empirical evidence that emerged from those studies. STE via multiculturalism reliably emerged among a sample of Northern Irish 8th grade pupils, among all kinds of studied combinations of primary and secondary outgroups. The same initially proved to be the case within a set of studies involving Oxford university students, but only for certain combinations of primary and secondary outgroups and not for others. In light of those incongruences, Lolliot et al. (2013) suggested boundary conditions for the emergence of STE via Multiculturalism and noted that this mediator might be "of primary relevance to inter-ethnic groups, or groups with an established culture… [or in other words with] … salient or recognised cultural practices." (Lolliot et al., 2013, p. 91). Even in light of these boundary conditions, the suggestions made by Lolliot et al. (2013) appear very promising when seen through the lens of feasibly applicable prejudice reduction strategies. The fact that the mediator is not outgroup-specific but in its very nature is inclusive of all kinds of outgroups (at least those for which salient cultural elements are perceived) also speaks for its value as a potential strategy for prejudice reduction. Interestingly, this mediator seems to have been overlooked in STE research so far, as it – for example – does not find mention in contemporary review papers by Vezzali et al. (2021) or Ünver et al. (2022). It also remains elusive so far, whether reduction of a multicultural worldview might serve as a mediator of negative STE. The latter would carry important consequences for the destructive consequences

of negative intergroup contact, but would also imply that such disruptive consequences could in theory be reversed by fostering positive interactions with (either the same or other) primary outgroups. This makes Multiculturalism a prime candidate for further inclusion in studies investigating potential mediators of (negative) STE.

The verdict

From the overview on the above mentioned mediational processes, provided by Vezzali et al. (2021), several things become clear. Firstly, it becomes clear that although many potential mechanisms have been specified in the literature, one ('attitude generalization') is by far most commonly researched. Secondly, it becomes clear that few studies compare multiple potential mechanisms, especially when it comes to studies investigating negative STE. Lastly, it becomes clear that many mechanisms have yet to be investigated regarding negative STE, although the current state of knowledge points to the idea that the same mechanisms underlie STE from positive contact and STE from negative contact. I summarized these points in the second research gap: knowledge on STE mediators comes mostly from cross-sectional research, focussing on a handful of the proposed mediators often studied one-at-a-time (**RG2**).

Chapter IV: Contextuality of the STE and it's underlying mechanisms

In the previous two chapters I have already identified two research gaps in STE literature. Firstly, a general lack of negative STE research (**RG1**). Secondly, that knowledge on STE mediators comes mostly from cross-sectional research focussing on a handful of the proposed mediators often studied one-at-a-time (**RG2**). The present and fourth chapter shall explicate another, third research gap: it is unclear to what extent different mechanisms occur in different intergroup contexts **(RG3).**

As discussed above, most studies on negative STE focus on the mechanism attitude generalization via cross-sectional research designs. However, this overfocus on cross-sectional studies and on attitude generalization are not the only problems. Another problem is that there are many individual case studies, set within different intergroup contexts, different points in time and applying various different methodology to receive sometimes incongruent results (see Chapter III). The open question is: why are the results incongruent? Is it due to the differences articulated above, or is it due to a general contextuality of how (by which specific mechanisms) the phenomenon occurs? I shall discuss this issue, which I identify as the third research gap, in the present chapter. I start by reiterating how STE literature has dealt with the question of contextuality, highlighting several mediator-related theories that emphasize contextual circumstances. Thereby I attempt to tie these theoretical ideas to empirical incongruences in the literature. I end the chapter with a focus on how to practically assess contextuality whereby I give special attention to two theory-grounded stereotype classification models employed by previous STE research. As theoretically proposed, said models should capture the different similarity dimensions, which the presented mediator-related theories make reference to.

How STE literature has dealt with the question of contextuality

The issue of contextuality has been approached from two sides in STE literature. Firstly, by studying moderating variables in the traditional sense (meaning individually varying characteristics of the contacting person that are believed to have an impact on the association of contact with either outgroup prejudice or any mediating construct). Secondly, by investigating characteristics of the studied intergroup context (meaning, the combination of the relevant primary outgroup, second outgroup and the group membership of the contacting individual).

Vezzali et al. (2021) provide an elaborate overview of this strand of research (see tables 1-3 there). A concise structural representation is furthermore given in Figure 1 of said article. To give an example, research has indicated that the extent to which the contacting individual endorses views of Social Dominance Orientation affected the strength of association between intergroup contact and prejudice (c.f. Schmid et al., 2012; as cited in Vezzali et al., 2021). Vezzali et al. (2021) list as moderating constructs: Social Dominance Orientation, Initial Prejudice, Moral Credentials, Group status, Similarity between primary and secondary outgroup.

From this overview several things become clear. Firstly, there is not so much empirical research focus on contextuality in STE literature, given that out of the 44 studies presented in said review paper, only 14 involved such an investigation. Secondly, when taking a closer look at the selection it becomes clear that one set of constructs describes primarily individual-level characteristics of the contacting person (Social Dominance Orientation, Initial Prejudice, Moral Credentials), whereas the other set of constructs describe characteristics primarily pertaining to the situational intergroup context (Group Status, Similarity between primary and secondary outgroup). The latter aspect is what I shall focus on, when investigating contextuality of STE and its mediators in the current dissertation. We shall see within the next section, that several mediator-related theories make reference to such contextual factors, which can be summarized as similarity between primary and secondary outgroup, albeit on different similarity dimensions.

Mediator-related theories that emphasize contextual circumstances: Attitude generalization

Theory. As Lolliot (2013) recounts the idea of a generalization gradient goes back to ground research on object similarity and cognitive representation by similarity characteristics (see e.g. Monahan et al., 2000; Zajonc, 2001, as cited in Lolliot, 2013), which does not only seem to apply to attitudes (Brown & Hewstone, 2005; Hewstone & Brown, 1986; Ranganath &

Nosek, 2008; as cited in Lolliot, 2013) but also to emotions (see e.g. Walter, 2002; as cited in Lolliot, 2013). Lolliot (2013) further elaborates that the idea of a generalization gradient was first applied to the occurrence and strength of STE effects in general, whereby it remained somewhat unclear whether a direct effect from primary outgroup contact to secondary outgroup evaluation was theoretically specified, or an indirect effect via primary outgroup evaluation as a mediator. To my knowledge, Lolliot (2013) first explicated that the latter can also be regarded as a specific assessment of a similarity gradient concerning attitude generalization. This refined theory can be summarized as follows: "Attitudes should generalize more readily between two outgroups who are perceived as more similar according to a similarity classification scheme, be it global or individual, than between those outgroups who are seen as less similar." (Lolliot, 2013, p. 19).

Empirical incongruences. Looking at the overview of STE studies presented by Vezzali et al. (2021) it appears as if only two studies (Zingora & Graf, 2019; Harwood et al., 2011) (sometimes) fail to find evidence for attitude generalization. This stands in stark contrast to the many cross-sectional (Jasinskaja-Lahti et al., 2020; Brylka et al., 2016; Lissitsa & Kushnirovich, 2018; Pettigrew, 2009, samples A & B; Schmid et al., 2012; Schmid et al., 2013, studies 1 and 2; Schulz & Taylor, 2018; Tausch et al., 2010, studies 1 to 3; Vezzali et al., 2018; 2020; see also Pettigrew, 2009, as cited in Lolliot, 2013 and Flores, 2015, as cited in Ünver et al., 2022), longitudinal (Bowman & Griffin, 2012; Tausch et al., 2010 Study 4) and experimental (Harwood et al., 2011; Joyce & Harwood, 2014) studies that find empirical support for it. However, looking into an ealier literature recount by Lolliot (2013) as well as a later literature review by Ünver et al. (2022) and a recent study by Kauff et al. (2023), we shall see that there are further instances. Lolliot (2013) recounts two such studies (Swart, 2008; Al Ramiah, 2009) and conducted several himself (Lolliot, 2013, studies 1 to 5). Ünver et al. (2022) recount an additional study (Van Laar

et al., 2005). Kauff et al. (2023) present four case studies. Some of these studies are grey literature, meaning (unpublished) doctoral dissertations, which could account for their absence in later literature reviews. I concisely summarize each study below, in order to give a clearer overview on the state of empirical evidence concerning the contextuality of attitude generalization.

Firstly, Lolliot (2013) recounts a study of Swart (2008), who had conducted a cross-sectional survey among two samples of South African participants. In a sample of White South Africans, indication for attitude generalization emerged in the form of an indirect association between primary outgroup (Black South Africans) contact and secondary outgroup (Coloured South Africans) attitude via primary outgroup attitude. However, in a second sample of Coloured South Africans, contact with the primary outgroup (White South Africans) was only associated with primary outgroup attitudes whereas no association between primary- and secondary outgroup (Black South Africans) attitudes emerged. As Lolliot (2013) recounts, afore mentioned pattern persisted, when Swart (2008) investigated a similar setup among Coloured students but swapped primary and secondary outgroups. An explanation for these patterns was then theorized, namely a higher similarity between Black and Coloured South Africans as compared to Black and White South Africans.

Lolliot (2013) consequently demonstrates how a study by Al Ramiah (2009) bears similar findings. It is a rare instance of quasi-experimental STE research, with structured but randomly assigned contact sessions, whereby participants from multiple ethnic groups (Malay, Indian and Chinese) interacted which one another within mixed camps, thereby creating multiple intergroup contexts that could be investigated. An important control measure, namely pre-experimental attitudes towards the involved groups was also included. For Malay as well as Chinese

participants, indication of attitude generalization emerged, since contact with the primary outgroup (Malays for Chinese and Chinese for Malays) improved attitudes towards the secondary outgroup (Indians) via improved primary outgroup attitudes. Yet, among Indian participants no indication for STE, be it via attitude generalization or otherwise, emerged. On account of this "Al Ramiah noted that Indians hold Chinese in admiration but express contempt towards Malays" (Lolliot, 2013, p. 28). This explanation attempt only makes an indirect reference to outgroup similarity, in the sense of divergent stereotype content. In my view, the underlying general idea might still be summarized as 'outgroup-specific stereotype content matters and defines why attitude generalization occurs in some intergroup contexts but not in others'. Notably, this is ad-hoc theorization as to my knowledge no empirical measure of stereotype content or similarity was included in the study.

Inspired by the above findings, Lolliot (2013) conducted a series of studies as part of his dissertation, with an empirical focus on the impact of outgroup similarity on the emergence of STE via attitude generalization. Given the complexity and length of the six conducted studies (that in total cover around 40 different investigated intergroup contexts), a concise summary of study setups, investigated constructs and results is given below in Table 1. This complexity and the fact that a summarized representation can only be found in the dissertation itself (as available in the Oxford University dissertation database) but not in any published journal article, might account for the fact that later STE-related review studies did (atleast to my knowledge) not engage with these findings (but see Lolliot et al., 2013). It should be noted that none of these studies included any specific measure of negative contact or a distinction between positive and negative STE. That in itself does not come as a surprise, since many of those studies were likely conceptualized and conducted before Barlow et al.'s (2012) influential paper on the positivity

bias in intergroup contact literature and the ensuing paradigm shift to include measures of both positive and negative intergroup contact. Still, it is my opinion, that Lolliot's (2013) findings are extremely important for STE literature, and the mediators attitude generalization and multiculturalism specifically, given the breadth, depth and methodology of the conducted studies. Note how several studies find direct empirical evidence for a similarity gradient behind STE via attitude generalization (although attitude generalization itself seemed to occur within the vast majority of the covered intergroup contexts). Note further, how the same appears to apply for the mediator multiculturalism.

Table 1

Schematic overview of the empirical findings of Lolliot (2013) regarding attitude generalization and outgroup similarity.

Study	**Participants**	**Contact measures**	**Primary outgroup**	**Secondary outgroup(s)**	**Mediators**	**Moderators**	**Stigma POG**	**Stigma SOG**
1a CS	*N*= 116 undergrad Oxford University students	Quantitiy Quality	Asian	Gay men	**AG*** (*b* = 0.17)	/	Category	Character
1b CS			Gay men	Asian	**AG*** (*b* = 0.13)	/	Character	Category
2a CS	*N*= 157 Oxford University students	Outgroup friendships (excluding for the homeless) Quantity (for all groups) Quality (only regarding the homeless)	Asians	Gay men The homeless Lesbians	**AG*** (*b* = 1.56) MC (n.s.) **AG*** (*b* = 0.59) MC (n.s.) **AG*** (*b* = 1.33) **MC*** (*b* = 0.27)	**Similarity***	Category	Character
2b CS			The homeless	Asians Gay men Lesbians	**AG*** (*b* = 2.21) MC (n.s.) AG (n.s.) MC (n.s.) **AG*** (*b* = 1.62) **MC*** (*b* =0.27)	/	Character	Category Character Character
2c CS			Gay men	Asians The homeless Lesbians	**AG*** (*b* = 2.46) MC (n.s.) AG (n.s.) MC (n.s.) **AG*** (*b* = 2.68) MC (n.s.)	/		Category Character Character
2d CS			Lesbians	Asians Gay men The homeless	AG (n.s.) MC (n.s.) AG (n.s.) MC (n.s.) AG (n.s.) MC (n.s.)	/		Category Character Character

3a CS	*N*= 132 University of Ulster students (*N*= 56 Catholic & *N*= 76 Protestant)	Friendships (with the ethno-religious outgroup) Quantity (with the other outgroups)	Ethno-religious OG	Travellers Gay men Racial minorities	**AG*** (*b* = 0.70) **AG*** (*b* = 1.88) **AG*** (*b* = 2.13)	/	Category	Character Character Category
3b CS			Gay men	Ethno-religious OG Travellers Racial minorities	**AG*** (*b* = 4.99) **AG*** (*b* = 2.64) **AG*** (*b* = 6.33)	/	Character	Category Character Category
3c CS			Racial minorities	Travellers Gay men Ethno-religious OG	**AG*** (*b* = 2.98) **AG*** (*b* = 6.91) **AG*** (*b* = 5.99)	/	Category	Character Character Category
4a CS	*N*= 3565 Northern Irish school students (*N*= 2422 Catholic & *N*= 1143 Protestant) between the age of 11 and 15	Friendships (with the ethno-religious outgroup) Quantity (with the other outgroups)	Ethno-religious OG	Travellers The disabled Racial minorities	**AG*** (*b* = 0.17) **MC*** (*b* = 0.02) **AG*** (*b* = 0.12) **MC*** (*b* = 0.02) **AG*** (*b* = 0.18) **MC*** (*b* = 0.03)	**Similarity*** **Similarity***	Category	Character Physical Category
4b CS			The disabled	Ethno-religious OG Travellers Racial minorities	**AG*** (*b* = 0.05) **MC*** (*b* = 0.04) **AG*** (*b* = 0.07) **MC*** (*b* = 0.03) **AG*** (*b* = 0.09) **MC*** (*b* = 0.03)	/	Physical	Category Character Category
4c CS			Racial minorities	Ethno-religious OG Travellers The disabled	**AG*** (*b* = 0.11) **MC*** (*b* = 0.06) **AG*** (*b* = 0.17) **MC*** (*b* = 0.04) **AG*** (*b* = 0.15) **MC*** (*b* = 0.02)	/	Category	Category Character Physical
5a L	*N*= 296 White South African University students as matchable at T1-T3 (*N*= 480 at T1; *N*= 516 at T2; *N*= 494 at T3)	Friendships (with Black & Colored S.A.) Quantity (with all groups)	Colored S.A. Black S.A.	Black S.A. Colored S.A.	**AG*** (*b* = 0.37) **AG*** (*b* = 0.37)	/	Category	Category
5b L			Colored S.A African imm.	African imm. Colored S.A	**AG*** (*b* = 0.37) **AG*** (*b* = 0.37)			
5c L			Colored S.A S.A. Indians	S.A. Indians Colored S.A	AG (n.s.) AG (n.s.)			
5d L			Black S.A. African imm.	African imm. Black S.A.	**AG*** (*b* = 0.30) **AG*** (*b* = 0.30)			
5e L			Black S.A. S.A. Indians	S.A. Indians Black S.A.	AG (n.s.) AG (n.s.)			
5f L			African imm. S.A. Indians	S.A. Indians African imm.	**AG*** (*b* = 0.35) **AG*** (*b* = 0.35)			
6 E	*N*= 29 female friendship pairs from first year Psychology students taking part in an introductory course. N_{total} = 58)	3 (contact mode: vicarious vs. direct vs. control) X 3 (measure time: pre- vs. post- vs. delayed inter-vention)	Contact with a Black S.A. confederate Either direct (*N*= 16) or vicarious (*N*= 16) or none (*N*= 18 in the control condition)	Colored S.A.	No mediators or moderators investigated. Significant improvement of SOG attitudes only between T1 and T2 and within the vicarious contact condition.		Category	Category

		experimt design. Control measures: friendships with POG and SOG & contact quantity					

Notes. CS = cross-sectional study; L = longitudinal study with three survey waves each six months apart; E = experimental study; OG = outgroup; POG = primary outgroup; SOG = secondary outgroup; Stigma = classification according to Goffman's (1963) typology of social stigma, as seen by the author of this current dissertation. S.A. = South Africans; imm. = immigrants; AG = attitude generalization; MC = Multiculturalism; * = statistically significant effect; Similarity = self-rated measures of the participants perceived similarity between the outgroups in question; Asians = here defined as UK residents of Indian, Pakistani or Bangladeshi origin; Racial minorities = here defined as Chinese, Asian or Black people.

Lastly, Ünver et al., (2022) recount an early study of Van Laar et al. (2005) that likewise indicated a contextual occurrence of attitude generalization. Notably, Van Laar et al. (2005)

> "found that having Black roommates predicted positive attitudes to Latinos, and vice versa, while having Asian American roommates negatively affected attitudes towards secondary outgroups, i.e. Blacks and Latinos among UCLA undergraduate students" (Ünver et al., 2022, p. 8).

It was theorized that the outgroup of Asian Americans stood out, compared to the other outgroups due to their supposedly higher statues in within the perceived social hierarchy among minority groups within the United States.

Further instances, where STE did not occur via attitude generalization come from a set of longitudinal studies of Kauff et al. (2023) who cover four intergroup scenarios that differ by combination of primary and secondary outgroups as well as on characteristics of the sampled participant groups. Their work was published shortly after this dissertation's second study and at a time where its third study was finalized. Since this dissertation's third supervisor is a co-author in Kauff et al. (2023), the respective author groups were aware of one-another and were in

exchange during the later stages of their respective studies. On top of their very valuable substantive insights, Kauff et al. (2023) also enhanced STE literature by engaging with the very same research gaps identified so far. Their study includes negative STE **(RG1)**. They investigate multiple mediators (attitude generalization, multiculturalism, and ingroup reappraisal) simultaneously within longitudinal study designs **(RG2)**. They investigate multiple intergroup contexts, with data sampled during comparative time periods of 2015-2017, and mostly among the same target population **(RG3**). On account of **RG3**, an assessment of outgroup similarity is unfortunately missing, presumably due to data availability, matters of investigative scope or given the already very substantive complexity and length of the work. In their third study Kauff et al. (2023) further included a control measure for prior secondary outgroup contact, which Ünver et al. (2022) identify as another pressing issue in STE research and which is likewise supplied in all studies from this dissertation. The results of Kauff et al., (2023) differ per investigated intergroup context. This instability might be interpreted as indicative of a contextual occurrence of STE by outgroup similarity, but in the absence of similarity classifications that remains speculative. Interestingly, no indication for STE via attitude generalization or any other covered mediators emerged – a finding that we shall revisit later in the discussion section.

From the previous sections we have seen that there is considerable literature which hints at a contextuality of the occurrence of STE via attitude generalization. Some of these studies theorize that similarity between primary and secondary outgroups, in terms of associated stereotype content, should play a role in determining when attitude generalization occurs. A problem with most of the aforementioned studies is that they speculate the impact of similiarity on the emergence of STE via attitude generalization, but rarely investigate it empirically. I am only aware of a handful of studies which do provide an empirical investigation or theoretically

grounded stereotype classification frameworks (Asbrock et al., 2011; Harwoord et al., 2011; Lolliot, 2013, studies 2-5; see also Ebbeler, 2020 who introduces the more elaborate, but difficult to empirically implement IPC model). An exact definition of outgroup similarity remains unfortunately still elusive although the idea of assessing stereotype content has been brought up. In short: further research is needed.

Mediator-related theories that emphasize contextual circumstances: Threat generalization

Theory. As briefly covered in the previous chapter, Zingora & Graf (2019) base the idea that outgroup threat acts as a mediator of STE, upon the idea of topological networks of threat representations, where similar outgroups are more strongly connected. The attentive reader will realize, however, that earlier work by Lolliot (2013) – as dicussed in the previous sections – had also referenced studies which showed how the cognitive representation of similarity characteristics, that forms the theoretical grounding for the similarity gradient of attitude generalization, had also been deemed applicable for emotions (see e.g. Walter, 2002; as cited in Lolliot, 2013). In the following subsection we shall revisit studies by Zingora & Graf (2019) and Mähönen & Jasinskaja-Lahti (2016) that generated opposing conclusions regarding the STE mediator threat. However, more research and a solid theoretical grounding of potential similarity differences in the covered combinations of primary- and secondary outgroups would be needed to actually assert whether a similarity based occurence of the mediator accounts for these results.

Empirical incongruences. Concerning the mediator perceived primary outgroup threat, the empirical incongruences have already been teasered before: a study by Zingora & Graf (2019) found evidence for said process, whereas a study by Mähönen & Jasinskaja-Lahti (2016) did not. The two studies investigating this process diverge in several ways concerning operationalizations. Zingora & Graf (2019) assess threat regarding primary and secondary

outgroup on several dimensions relating to the outgroups ideological differences from the national majority, perceived individual- & group-level realistic threat and also group-level symbolic threat. Mähönen & Jasinskaja-Lahti (2016) utilize a four-item measure of individual- and group-level symbolic and realistic primary outgroup threat while simultaneously assessing the opposite construct of intergroup gains. The studies also diverge regarding proposed theoretical processes in the sense that Zingora & Graf (2019) assess a spread from contact to primary- to secondary outgroup threat, whereas Mähönen & Jasinskaja-Lahti (2016) assess an effect from contact to primary outgroup threat, to secondary outgroup attitude. Lastly, the studies diverge regarding study setup, given that the first study is cross sectional, whereas the second one covers two time points. It is known that findings initially supported by cross-sectional research may fail to replicate in a longitudinal study design, which might account for the incongruent findings. We thus see that there is very little empirical indication for the contextual emergence of threat as an STE mediator. However, it should further be noted that there is very little research on this STE mediator in general (to my knowledge there are only two studies). Still, there are theoretically grounded reasons to assume a contextual emergence as the theoretical foundation behind the contextual occurrence of attitude generalization seems to extend to the representation of emotions as well (Walter, 2002). These are compelling reasons to further investigate the STE mediator threat.

Mediator-related theories that emphasize contextual circumstances: Multiculturalism

Empirical incongruences. Lolliot (2013) first studied the STE mediator Multiculturalism, a concept that on first glance appears universally applicable as an STE mediator across all kinds of intergroup contexts. After all, if contact affects a change in the general view on diversity, this newly gained perspective should likely affect the views on all

kinds of outgroups. However, in conducting several studies, Lolliot (2013) noticed that this was not the case. As Lolliot (2013) did, in trying to understand the reason for this, we too shall take a closer look at those studies in which multiculturalism did not emerge as an STE mediator. Specifically, we are going to focus on the intergroup scenarios that were covered. We shall see that the setup of these studies is rather similar, making it easier to identify factors that differ and might likely account for the absence of mediaton via Multiculturalism. In fact, all those studies draw from the same pool of participants, namely *N*= 157 Oxford University students (c.f. Table 1). These participants were administered questionnaires concerning their contact with various outgroups but what differed between the various contextual investigations is the specific combinations of investigated primary- and secondary outgroups. In that sense, STE via multiculturalism did emerge when the primary outgroup were Asians and the secondary outgroup were Lesbians (c.f. Study 2a in Table 1). Similarly, STE via multiculturalism also emerged when the primary outgroup were the homeless and the secondary outgroup were Lesbians (c.f. Study 2c in Table 1). However, Multiculturalism did not emerge as a mediator of STE in intergroup context 2a (Primary outgroup: Asians) when considering Gay men or the homeless as secondary outgroups. Likewise, it did not emerge in intergroup context 2b (primary outgroup: the homeless), when considering Asians or Gay men as secondary outgroups. In a similar vein, it also did not emerge in intergroup context 2c (primary outgroup: Gay men), when considering Asians or the homeless as secondary outgroups. Finally, it also did not emerge in intergroup context 2d (primary outgroup: Lesbians), when considering Asians or Gay men or the homeless as secondary outgroups.

Theory. Given the contextual occurrence of STE via multiculturalism, Lolliot (2013) had theorized that characteristics of the secondary outgroups would play a role in the emergence of

STE via Multiculturalism. More precisely, Lolliot (2013) tied the emergence of the mediator to the perceived tangilibilty of cultural values and practices of the secondary outgroup. The reasoning is as follows. A new outlook on cultural diversity, as brought about through intergroup contact with the primary outgroup, challenges the belief that ingroup-specific, beliefs, values, customs, and practices are the only valid way in which the social world might be perceived. A newfound appreciation for beliefs, values, customs and practices of outgroups should follow (or at least the acceptance that those may be perceived as valid from outgroup members' perspectives). However, if the contacting individual cannot recount any beliefs, values, customs, and practices of an outgroup, or if he or she perceives that outgroup members act the way that they act, out of lack of morality rather than cultural values, the new appreciation of cultural diversity should not generalize to affect the evaluation of the secondary outgroup. This was a likely explanation for the absence of any STE via multiculturalism in Lolliot's (2013) study 2b, where the participants might have had a hard time recalling culture-specific beliefs, values or practices of the secondary outgroup of homeless people. Lolliot (2013) did try to employ existing frameworks aiming at classifying stereotype content of outgroups to solidify this point. Specifically, he employed Goffman's (1963) typology of social stigma that assigns reasons to outgroup derogation. I shall elaborate on this classification theme further on in the next section, where I explicate two frameworks that may aid in practically assessing the applicable of STE mediators in a given intergroup context.

Practically assessing contextuality: Goffman's Topology of social stigma.

Lolliot (2013) provides a concise summary of Goffman's (1963) typology of social stigma (hereafter abbreviated as GTS), a classification system that aims to clarify the reason why

prejudicial views are held towards a given outgroup. In the following I shall utilize the more contemporary category names that Lolliot (2013) introduced (c.f. p. 38 there).

The GTS firstly distinguishes outgroups that are derogated due to belonging to a certain ethno-religious category. Examples would be immigrant- or national groups (e.g. the Dutch, the Polish, the Turkish) or religious (minority) groups (e.g. Muslim-Americans or Jewish-Americans or Mormons). Stigmatization against such groups often seems to rest on the opinion that their (perceived) cultural values, beliefs, and practices are seen as lesser or incongruent with those of the observing individual's ingroup. The GTS summarized prejudicial views held against such groups as category stigma.

Secondly, the GTS distinguishes groups that are derogated due to physical characteristics which are perceived to lie outside the norm. Lolliot (2013) gives the example of physically handicapped people. Though not explicitly mentioned in GTS literature, a number of rather well known examples come to mind where prejudice is likewise based on physical characteristics. One might think of prejudice against red haired people (see e.g. Heckert & Best, 1997), and people with eyeglasses (see e.g. Leder et al., 2011). One might also think of colorism – meaning "prejudicial preferential treatment of same-race people based solely on their color" (Walker, 1983, p. 290, as cited in Bajwa et al., 2023, p. 3) – against people with darker skin tone (see e.g. Bajwa et al., 2023), or people with albinism (see e.g. Franklin et al., 2018). These kinds of stigmatizations stand out due to being primarily rooted in physical appearance (which is then sometimes ad hoc connected to negative traits). The GTS summarizes these prejudicial views as physical stigma.

Lastly, the GTS speaks of groups which are discriminated against due to *perceived* lack of morality or other traits that are perceived to reflect negative personality and character. Lolliot

(2013) gives the example of stereotypes held against outgroups who are at the lower socio-economic strata, such as the homeless or welfare recipients. Though not explicitly mentioned in relation to the GTS, further such examples do come to mind. This includes prejudicial conceptions about the welfare deservingness of working-class people in the United Kingdom (see e.g. De Vries et al., 2022), character-blemishing stereotypes held against people from the southern United States (see e.g. Clark et al., 2011) or character-blemishing derogation of non-sedentary groups like Travellers or Sinti & Roma (see e.g. Kende et al., 2021, pp. 393-395). What prejudicial views against such groups have in common is that the outgroup's lower social position is seemingly seen as self-inflicted and tied to negative character-traits that are thought to be inherent to the group members. The GTS summarized prejudicial views held against such groups as character stigma.

Application to the mediators at hand

Lolliot (2013), who first introduced Goffman's (1963) typology of social stigma as a classification system for similarity between primary and secondary outgroups, also provides a concrete prediction for its application in STE research. Specifically, said author states:

> "contact with the focal outgroup will have a stronger effect on attitudes towards the target outgroup if both outgroups can be classified under the same group than when the two outgroups come from different groups according to Goffman's (1963) typology." (Lolliot, 2013, pp. 38-39)

For the reasons outlined in the previous mediator-related sections above, I shall assume that this should be applicable to STE via attitude generalization and threat. Keeping in mind Lolliot's (2013) remark that multiculturalism should primarily emerge as an STE mediator, when outgroups can be associated with specific cultural practices beliefs and values, I shall assume

that STE via multiculturalism should become more likely when primary and secondary outgroups can be classified as category stigma, than if only one outgroup can be classified as such, compared to cases where no outgroup can be classified as such. Having a primary outgroup classified as category stigma, should thereby increase the likelihood that contact with said group should impact diversity beliefs. Further, having a secondary outgroup that is associated with category stigma, should increase the likelihood, that a shifted view on diversity should impact the evaluation of the secondary outgroup.

Practically assessing contextuality: The Stereotype Content Model

The central idea of the SCM is that any outgroup-related stereotypes can be essentially summarized as a combination of two very basic evaluative dimensions, namely, warmth and competence. Fiske et al. (2002) explain this as follows:

> "When people meet others as individuals or group members, they want to know what the other's goals will be vis à vis the self or in-group and how effectively the other will pursue these goals… … these characteristics correspond to perceptions of warmth and competence, respectively." (p. 879)

To heuristically anticipate the others' warmth and competence people may use social cues or social structural correlates as Fiske et al. (2002) term them. Competence seems to be estimated by gauging the outgroups status in societal hierarchy (r= .80** in Kerwyn et al., 2015; see also Durante et al., 2013). Warmth may be assessed by perceptions of symbolic and realistic threat (r= -.77** in Kerwyn et al., 2015). According to the combination of perceived warmth and competence, the SCM proposes different kinds of prejudicial thoughts and behavior.

Application to the mediators at hand

The SCM offers a standardized way of assessing the stereotype similarity between primary and secondary outgroups, which according to theory might determine the processes by which STE should occur. As Lolliot (2013) recounts, Asbrock et al. (2011) had previously employed the model to assess the emergence of direct STE effects. In their study, that involved German participants, contact with the primary outgroup (foreigners in Germany) had a significant association with the investigated secondary outgroups (excluding the outgroup Jews). However, said association proved to be "stronger for those groups rated more (Muslims, homeless people, homosexuals) than those rated less (non-traditional women, Jews) similar in terms of the warmth and competence dimensions of the stereotype content model (Fiske et al., 2002) to the primary outgroup" (Lolliot et al., 2013, p. 96). I shall cover in detail, how an application of the SCM would specify under which conditions (meaning the placement of the secondary outgroup relative to the primary outgroup in terms of warmth and competence), our three previously recounted STE mediators should likely emerge. Mapped on a two-dimensional space with competence on the x- and warmth on the y-axis, attitude generalization as a mediator of STE should be more likely, when the diagonal distance between the placement of primary- and secondary outgroup minimizes. Threat as a mediator of STE should become more likely, when their distance on the y-axis (dimension warmth) minimizes. Multiculturalism as a mediator of STE should become more likely, when both are saliently associated with certain cultural practices that can be (de)valued following primary outgroup contact.

Closing remarks on the assessment of outgroup similarity

As Lolliot (2013) recounts, the SCM and GTS are both "global measures of similarity… …[that] represent external systems denoting similarity between various outgroups… …[and] are not rated by the participants themselves" (p. 39). I am aware of two studies conducted by Lolliot

(2013; Studies 2 & 4) which did use a similarity measures indicated by the participants themselves. Similarly, Ebbeler's (2020) IPC model focusses on such inter-individual variability in stereotype similarity ratings. I acknowledge that individual ratings of similarity are superior measures compared to global measures of similarity. However, the methods section shall detail that such measures were not readily available in the secondary data that was analyzed within this dissertation. In the trade-off between sufficient statistical power for the conducted empirical analyses - which Lolliot (2013) identified as one issue in STE literature (see p. 34 there) – and measurement criteria, the decision was made to analyze secondary survey data suitable to the endeavour. Unfortunately, this material did not include individual-level similarity ratings. This issue shall be revisited later on in the discussion section and discussed against future directions which STE research needs to take.

Chapter V: Research objectives of the dissertation

As the previous chapters pointed out, there exist several research gaps in STE literature. This fifth chapter recounts them, and connects them to specific research objectives that should be accomplished within this dissertation.

Research gaps in STE literature

The first research gap had been identified within chapter II: STE research is plagued by the positivity bias prevalent in intergroup contact literature and there is a clear lack of engagement with STE from negative contact (**RG1**). The second research gap had been explicated within chapter III: knowledge on STE mediators comes mostly from cross-sectional research, focussing on a handful of the proposed mediators often studied one-at-a-time (**RG2**). Chapter IV had sketched out a third, final research gap: it is unclear to what extent different

mechanisms occur in different intergroup contexts, which is alluded to in theory but has not yet been subject to systematic empirical investigation **(RG3).**

Research objectives to tackle each research gap

Having explicated these three research gaps, the next question is how to tackle them. This shall be summarized in the current section.

The research objective to tackle **RG1** is fairly straightforward: conduct more research that involves STE from negative contact. Yet, several things need to be considered. Firstly, such studies would benefit from studying positive and negative STE jointly, since both types of contact may occur independently (see e.g. Barlow et al., 2012). Secondly and relatedly, such studies should also include a control measure of secondary outgroup contact, as this might present a potentially confounding variable (Ünver et al., 2022). Thirdly, such studies should include a large enough sample on account of statistical power, an issue that previous research had raised (Lolliot, 2013, p. 34). Fourthly, such studies would gain additional external validity if the involved sample would closely resemble the general population, instead of drawing upon (psychology) university students, as previous studies frequently did (see e.g. Lolliot, 2013, studies 1,2,3,5 & 6; Meleady & Forder, 2018; Harwood et al., 2011; Joyce & Harwood, 2014; Andrews et al., 2018). Relatedly, the conclusions made from such a study would likewise gain practical implications if the investigated intergroup scenario (meaning combination of primary and secondary outgroups) would hold real-life significance and present an ongoing intergroup conflict or issue. I thus summarize the first research objective as follows. **Research objective 1)*:*** *Conducting a study that investigates positive and negative STE within a large-enough sample resembling the general population within a context of ongoing intergroup conflicts or issues, while accounting for the confounding influence of secondary outgroup contact*.

The research objective to tackle **RG2** extends the first research objective by some elements. To amend the fact that most knowledge on STE mediators comes from cross-sectional research one would firstly need to conduct more longitudinal or experimental studies. Given the ethical dilemma of manipulating negative intergroup encounters (and reversing potential generalization that is expected to result), the choice here falls on conducting further longitudinal research. As both Lolliot (2013) and Ünver et al. (2022) note, a longitudinal study with at least three measurement occasions would be needed to longitudinally investigate mediation. In extension, amending the fact that previous studies have focussed on only a handful of mediators, often studied one-at-a-time, further implies that such a longitudinal study would need to cover multiple proposed STE mediator simultaneously. To cover the full breadth of mediator types, researchers might want to include at least one mediator from each category that Vezzali et al. (2021) specified. It might also be advisable to study those mediators alongside the frequently investigated attitude generalization, and thus establish them as separate ways in which STE might occur. Within the current dissertation, the choice thus falls on four mediators: attitude generalization, multiculturalism, ingroup reappraisal and primary outgroup threat. I shall begin by elaborating the choice for multiculturalism. It is a mediator involving the self, and thus part of an under-researched mediator category (Vezzali et al., 2021). Despite receiving attention and delivering promising results in studies of Lolliot (2013), later STE research has rarely engaged with it. At the time of starting this dissertation, negative STE research involving multiculturalism was, to my knowledge, non-existent. I shall continue by elaborating the choice for ingroup reappraisal. Next to multiculturalism, ingroup reappraisal (a mediator involving the ingroup) represents the second part of Pettigrew's (2009) deprovincialization hypothesis. Researchers investigating multiculturalism would do well in disentangling these two processes. Although

positive STE research on ingroup reappraisal has garnered little empirical evidence (Ebbeler, 2020), it should be noted that ingroup reappraisal has thus far rarely been studied with regards to STE from negative contact. Conducting such an investigation would thus lead to further insights on how negative contact affects views on the ingroup and the generalizing potential that might ensue. Lastly I shall elaborate the choice for primary outgroup threat. This mediator involving the outgroup has thus far received little attention in negative STE research and the two previously conducted studies (Mähönen & Jasinskaja-Lahti, 2016; Zingora & Graf, 2019) come to divergent results. Additionally, research has stuggested "an important role for feelings of threat in explaining contact – prejudice relationships" (Aberson, 2015, p. 743), begging the question to which extent such a consequence might generalize to uninvolved outgroups and represent an additional process by which negative STE in particular might operate. Keeping this in mind, the following second research objective is formulated in order to tackle research gap two. ***Research objective 2):*** *Conduct longitudinal STE research, spanning at least three time points, while investigating mediators involving the self, the ingroup and the outgroup simultaneously alongside attitude generalization (e.g. multiculturalism, ingroup reappraisal and primary outgroup threat).*

In tackling **RG3**, the previous statement needs to be extended a bit further. Relating to **RG3** we had seen that it remains unclear to what extent the emergence of STE via various mediators depends on characteristics of the intergroup context at hand (meaning the combination of primary and secondary outgroups). Although the theory behind various mediators (notably attitude generalization, multiculturalism, and primary outgroup threat) alludes to the dependence on similarity characteristics of the involved primary and secondary outgroups, comparative empirical investigations involving each of those mediators as well as negative STE are absent.

As work of Lolliot (2013) demonstrates, one approach could be a comparative study design that keeps aspects of the involved sample, methodology and temporal setting as similar as possible while varying the combinations of investigated primary- and secondary outgroups. Thereby, bar direct similarity judgements from the participants, global similarity classification frameworks like the SCM or GTS might be employed to gain insight into the role of outgroup similarity. I thus summarize research objective three, which aims to tackle research gap three. ***Research objective 3):*** *Conduct multiple longitudinal studies, as specified within research objective two, within a comparative framework that minimizes study differences bar the various combinations of primary and secondary outgroups under investigation, while classifying outgroup similarity.*

Besides, the three above research objectives, the overall pattern of results might shine light on another overarching question that Vezzali et al. (2021) count as presently unanswered. To this end I specify ***Research Objective 4):*** *Investigating whether positive and negative STE occur via the same processes but in opposite direction.*

Chapter VI: Methods

Within this dissertation, three studies are conducted in order to tackle the identified research gaps. They shall achieve the related research objects described above, and thus gain insights into STEs, their underlying processes, and contextual emergence. In a first section I shall look at the conceptual characteristics of each study. Then I shall detail contextual characteristics of the participant ingroup that is involved in all three studies. A last section then covers the practical setup of each study, with regards to data source, operationalizations, and methodology.

Conceptual characteristics of each study

Study 1 will firstly tackle the problem that little is known about mechanisms underlying negative STE, beyond attitude generalization. This will be done by studying two further proposed mediators alongside attitude generalization: multiculturalism and ingroup pride. In doing so, Study 1 further contributes to addressing two other mentioned research gaps. On the one hand, it will further aid to disentangle the two processes that Pettigrew (1997) mentioned in his deprovincialization hypotheses, namely that intergroup contact "not only individualizes and "humanizes" out-group members "(p. 174; called multiculturalism by Lolliot, 2013), "but serves to distance you from your ingroup" (p. 174; called ingroup reappraisal in the literature). On the other hand, it will do so against the backdrop of attitude generalization – the most frequently studied and reported mechanism behind STE – and the simultaneous study of positive and negative intergroup contact. The latter shall further aid in answering the suspicion mentioned by Vezzali et al. (2021), that positive and negative STE would operate by the same processes. Concluding Study 1 will further tackle the issues of statistical power and representativity by utilizing large scale survey data from the German national survey ALLBUS.

Study 2 will extend the contributions made in Study 1, by further addressing the lack of longitudinal STE mediator research described in RG2, and thus a problem that Pettigrew & Tropp (2006) had termed the "causal sequence problem" (p. 757). Contrary to Study 1, Study 2 is thus longitudinal, encompassing three survey waves with 6 months in between each. Again multiple proposed mediators of (positive and negative) STE will be investigated alongside each other. Firstly, the two mediators that turned out significant in Study 1 (attitude generalization & multiculturalism) but also the mediator threat (which had been requested to be further studied in the context of negative STE but was not included in Study 1 due to reasons of data availability). This will allow to further disentangle the role played by negative affective components (more

precisely threat) in the previously investigated mechanisms of attitude generalization and multiculturalism, but also to test the causal sequence that could only be assumed but not empirically tested in study 1. Comparability of both studies is further facilitated by the facts that participants of Study 2 stem from refreshment cohort C of the GESIS panel and thus form a subset of those investigated in Study 1. In addition, the same intergroup context (meaning combination of primary and secondary outgroup) is studied. Again the results will also aid in testing whether the same mediators would underlie positive and negative STE.

Lastly study 3 will aim to extend the knowledge on the contextual applicability of STE and it's mediators by outgroup similarity (**RG3**). Specifically, the aim is to replicate the findings of Study 2 but with regards to two additional different combinations of primary- and secondary outgroup. Comparability of these intergroup scenarios is facilitated by the fact that participants of Study 3 consist of two other subsets of the original participants from Study 1 that participated in three survey waves at the same time as the participants from Study 2, the only difference being that contact with different primary outgroups was assessed. In comparing the results from these two additional intergroup scenarios with those obtained in Study 2, the aim is to gain additional insights into the contextual robustness of (positive and negative) STE as well as the presumed underlying mechanisms. Two theoretical frameworks (firstly, the SCM, meaning the Stereotype Content Model and secondly GTS, meaning Goffmans Typology of Social Stigma) pertaining to the similarity between the investigated primary and secondary outgroups are thereby employed to assess whether the concept of outgroup similarity could provide any explanation for potentially emergent contextual variability.

The overall contextual setting

For the study of contextual variability mentioned above it is essential to eliminate as much further contextual differences as possible, beyond what one aims to study (here the contextual variablitiy in investigated primary and secondary outgroups). In the present work this is aided by holding constant the national backdrop (Germany) and the investigated secondary outgroup (Refugees) across the three different studies, which are set similarly in time (comparing Study 1 to the rest) or even parallel in time (comparing studies 2 and 3). But why Germany and why the secondary outgroup Refugees? Certainly there was an argument of data availability but a case can be made for the theoretical as well as the practical relevance of studying the generalizing effects of (negative) intergroup contact to that particular outgroup in that particular national setting. Let us start with the theoretical relevance of that endeavour, before continuing with the practical relevance. The latter relates to the intergroup relations between Germans (our participant ingroup) and Refugees (our secondary outgroup).

Theoretical relevance

Theoretical relevance comes firstly from the fact that an ongoing intergroup conflict or issue is studied – a characteristic that I had specified with regards to research objective 1. Secondly, further theoretical relevance comes from the fact that the events of the so-called 'refugee crisis' provide the opportunity to study an intergroup scenario, wherein members of an ingroup are presented with the relatively sudden arrival of a new outgroup, which was relatively scarcely encountered before, and then suddenly heavily prevalent in public discourse before any large-scale contact could occur. Contrastingly, the ingroup – as described in that scenario – had had many contact opportunities with- and holds certain attitudes about many other (ethno-religious) outgroups that may be more or less similar to the newly arriving outgroup on various characteristics. It is tempting to assume that some sort of generalization as described in the STE

might take place in such a scenario. Yet, at the start of the dissertation, this was only scarcely empirically investigated (but see Ünver et al., 2021). Population displacements on such a large scale were – luckily – relatively scarce in the immediate European past (but see e.g. Degler & Liebig, 2017, p.18 for numbers on asylum applications in Germany after the fall of the Iron curtain). At the very least, the coverage of such events in STE research was scarce. As tragic as these events are, they do present STE researchers with the chance to study the emergence of stereotypes to a suddenly emerging new outgroup and the potential role of the generalizing effect of intergroup contact therein. The scientific value of studying these events should not only lie in advancing the understanding of the detrimental effects of negative intergroup contact but also in the hope that any gained insights might in the future be applied to aid preventing such negative generalizations. To give an example: in the case that positive and negative STE work oppositely but via the same processes, fostering positive contact with the same or a similar primary outgroup would present an avenue to tackle the aversive consequences of negative STE.

Relations between the participant ingroup and the secondary outgroup

Practical relevance comes from the fact that many people are currently affected by these intergroup relations – be it the around 80 million pre-existing inhabitants of Germany, or the more than 1 million forced migrants that came to Germany during the so-called 'refugee crisis' from 2015 onwards (see e.g. Degler & Liebig, 2017, Fig. 1.1). Following events such as the civil war in the Syrian Arab Republic as well as the consequential poverty and unrest, forced migration increased (Cowling et al., 2019) in the sense that many people took on a long difficult journey to Europe, either on foot, by boat or via any means available (c.f. Gehrsitz & Ungerer, 2018, p. 3) to seek asylum. Germany especially was the destination for many forced migrants (c.f. BAMF, 2021). The reactions from the residents of Germany were ambivalent, as media

portrayals from that time show (see e.g. Steinmetz, 2017) and reports from representative survey research (see e.g. Zick & Krott. 2021) as well as research on media portrayals (see e.g. Maurer et al., 2021) document. News articles from that time (see e.g. Weiland, 2016) show an ambivalence among populace and politicians alike, in the sense that many initially welcomed the asylum seekers under the term 'Willkommenskultur' (engl. 'culture of welcoming'), but there was also a sizable discontent and protest against the decision to let them enter the country. The latter culminated into the formation of outright protest groups, such as PEGIDA (see e.g Dernbach et al., 2014; Beckmann & Jahn, 2015) and was paralleled by a sizeable gain in votes for parties on the right-wing political spectrum (see e.g. Steinmayr, 2021). In short, the 'Refugee-crisis' – as the media soon called it (see e.g. Maurer et al., 2021, p. 5) – quickly became a politicized hot topic for both Europe and Germany (see e.g. Koikkalainen et al., 2021, pp. 1-2) and also a polarizing topic, as polls showed (see e.g. Kinkartz, 2016). On the local level it soon became evident that agencies were struggling with the logistic tasks of supplying and housing the newly arrived forced migrants (see e.g. "Kommunen warnen vor Überforderung", 2015; "Länder warnen vor Überforderung in der Flüchtlingskrise", 2015). To achieve the latter, camps were set up in communities, sometimes as tents, sometimes as container homes (see e.g. Bollmann, 2016; Niemann, 2016). This, however, often evoked fears and resistance from the local populace (see e.g. Schubert, 2015; Krone & Wanninger, 2016; Maxwill, 2016; Nowak, 2016). Fears elicited by the sudden arrival of the forced migrants thereby included the perceived incompatibility with German societal core values as well as safety related threats (Landmann et al., 2019), which was also thematised in media coverage (see Maurer et al., 2021, p. 6). Those fears only became stronger as several further events unfolded. As Maurer et al. (2021) summarize, one noteworthy turn of public opinion, arose after the so-called 'Sylvesternacht in Köln' (engl. 'New-Years-eve

night in Cologne'), when groups of young men with a migration background from middle-eastern or north-african countries harassed female party-goers en-masse around Cologne central station, largely unstopped by police (Bosen, 2020). With reference to a study by Arlt & Wolling, (2018), Maurer et al. (2021) summarize how the public perception turned into distrust against the accuracy of media portrayals of the refugee crisis and how many held the idea that public media pushed a liberal agenda instead of remaining impartial. As Maurer et al. (2021) summarize, this claim does not hold up to media content analysis (see pages 5 to 6 there), but a turn towards more negative media portrayals of forced migrants could be documented when comparing reports before and after September 2015. A second event that turned public opinion, was the terroristic attack of Anis Amri, a supposed Islamic terrorist who had previously posed as a refugee to gain access to social services in Italy and later Germany (see e.g. "Was wir über Anis Amri wissen", 2017 for a concise summary; see also chronology "Behördenhandeln um die Person der Attentäters vom Breitscheidpaltz", 2017 for an official timeline of events). On December 19th 2016 Amri first murdered Polish truck driver Lukasz U. and then drove the stolen truck into crowds of people who attended the christmas market at the Breitscheidplatz in Berlin, killing eleven further people in the process and insuring 56 ("Was wir über Anis Amri wissen", 2017). A frantic search began for the fugitive Amri (Der Generalbundesanwalt beim Bundesgerichtshof, 2016) who was later identified in Milan and shot during an altercation with police ("Was wir über Anis Amri wissen", 2017). This terroristic attack sparked outrage in Germany and Europe at large but was also instrumentalized by individuals in the right-wing political spectrum ("Blumen, Mitgefühl, Maschinenpistolen", 2016). Nowadays the 'Flüchtlingsfrage' (engl. 'question on what to do with the refugees') remains an unanswered question and a hot topic in Germany (for a timeline of results from public opinion polls see e.g.

Zick & Krott, 2021). Nowadays forced migrants still live within semi-temporary camps (see e.g. Schmelter, 2023; Zapf-Schramm & Kasseckert, 2023), sometimes with very limited prospects for gainful employment and very limited prospects for integration. In short: intergroup relations between German residents and forced migrants presented an ongoing intergroup issue at the start of this dissertation, and still do nowadays.

The covered primary outgroups: Foreigners living in Germany

The primary outgroup covered in studies 1 and 2 are 'Foreigners living in Germany' (hereafter referred to as 'Foreigners'). A study by Asbrock et al. (2014) sheds light on the understanding of the category label 'Foreigners' among the German population. The authors state: "Our results also provide arguments against the claim that foreigners are too heterogeneous to be used as a research category. The current image of foreigners is mostly shaped by the highly visible and publicly discussed group of Turkish immigrants." (Asbrock et al., 2014, pp. 5-6). Asbrock et al. (2014) further state the possibility that the understanding of the group label might shift over time. However, answer patterns to an open question on the understanding of this label supplied in study 1 paint a similar picture for the time at which the study was conducted. Foreigners have been classified as low-to-intermediate on warmth and competence within the SCM (see e.g. Asbrock, 2010, Fig. 1; Cuddy et al., 2009, p. 20). Given the aforementioned predominant association of Turkish immigrants with this label, the label makes reference to outgroups that are distinguished from the ingroup by cultural elements and can thus be classified under *category stigma* in Goffman's (1963) typology of social stigma. Further details on this primary outgroup will be provided within studies 1 and 2.

The covered primary outgroups: Muslims living in Germany

A primary outgroup covered in study 3 are ‘Muslims living in Germany’ (hereafter referred to as ‘Muslims’). Work by Sommer & Kühne (2021) describes the stereotypes associated with Muslims living in Germany. A general theme is the perception that their religious beliefs and practices are incongruent with core values of secularized, egalitarian, Western society, resulting in the perception that Muslims may lack the will and/or ability to integrate (c.f. Sommer & Kühne, 2021, p. 479). Foroutan (2013) further elaborates on the ongoing debate around the integration of said Muslims, which was sparked anew when Islamic terror became a more prevalent topic during the 2000s and 2010s (c.f. Foroutan, 2013, Section II.C). Unsurprisingly, prejudice against this outgroup appears socially acceptable among many elements within German society (c.f. Lewicki, 2018, p. 496). Within the SCM, Muslims have been classified as low-to-intermediate on warmth and competence (Asbrock, 2010, Fig. 1; Cuddy et al., 2009, Fig. 1-2), receiving slightly lower scores than Foreigners (c.f. Asbrock, 2010, Fig. 1). As Muslim-related stereotypes tend to focus on their religious practices, values and beliefs (and their perceived incongruence with secularized, egalitarian Western society), one might classify Muslims living in Germany as an outgroup that is subjected to category stigma within Goffmans (1963) typology of social stigma. Further details are provided within study 3.

The covered primary outgroups: Sinti & Roma living in Germany

Another primary outgroup covered in study 3 are ‘Sinti & Roma living in Germany’ (hereafter referred to as ‘Sinti & Roma’). The group label refers to people with a non-sedentary lifestyle. In Germany these groups have been the target of derogation and persecution throughout the centuries, also within the holocaust (c.f. End, 2014, p. 174). In the past they have been officially referred to under the term ‘Gypsies’ or rather the equivalent German term ‘Zigeuner’, a term that Sinti & Roma themselves reject as derogative (Zentralrat Deutscher Sinti & Roma,

2015). As previously mentioned, prejudice against Sinti & Roma unfortunately seems still rather socially acceptable in contemporary Germany (c.f. End, 2014, p. 36) and Europe in general (c.f. Kende et al., 2021). The specific stereotypes held against this outgroup predominantly relate to character-blemishing prejudice involving perceptions of criminality and systematic misuse of social services (see e.g. Kende et al., 2021, pp. 5-7). Representatives of Sinti & Roma have stated how specific cultural practices, beliefs, and values are rarely covered or accurately represented in media and public discourse (Kende et al., 2021). Within the SCM, Sinti & Roma have been classified as low on warmth and low on competence (Fiske, 2018; Grigoryev et al., 2019, Fig. 1; Stanciu et al., 2017, Fig. 1). Given the aforementioned character blemishing stereotypes and the very superficial engagement with cultural practices, values, and beliefs, one might classify Sinti & Roma as an outgroup that is subjected to character stigma within Goffmans (1963) typology of social stigma. Further details will be provided within study 3.

The practical setup of each study

Study 1 was conducted as a first exploration of positive and negative STE as well as their mediators within the German national context and the context of forced migration. Table 2 provides further details. Study 1 mainly tackles RG1 and Research Objective 1). Some elements of RG2 and Research Objective 2) are likewise tackled (bar the employed cross-sectional study design), since three STE mediators are investigated simultaneously.

Study 2 extends the investigations from the first study, by employing a longitudinal design. Further details can be found in Table 2. The covered mediators are attitude generalization, multiculturalism, and intergroup threat (the latter measure had not been available in study 1). The mediator ingroup pride had been dropped for a number of reason: firstly, given the lack of cross-sectional associations from study 1; secondly, given divergent

operationalizations between datasets; thirdly given the difficulty of conceptual interpretation within the German context. Study 2 mainly tackles RG2 and Research Objective 2).

Study 3 extends the prior investigations, by investigating positive- and negative STE and their mediators within two addional intergroup contexts, as table 2 highlights. Methodology and analytical strategy was deliberately kept identical to the one employed in study 2 in an attempt to minimize potential confounding factors (bar differences in intergroup context). The SCM and GTS were employed as external global similarity measures to uncover the stereotype content potentially associated with each outgroup and gauge at any evident relation of the results and outgroup similary. Study 3 mainly tackles RG3 and Research Objective 3). The pattern of results emerging from all three studies together shall aid in answering Research Objective 4).

Table 2

Schematic overview of the three studies conducted within this dissertation.

Study	**Participants**	**Contact measures**	**Primary outgroup**	**Secondary outgroup(s)**	**Mediators**	**Stigma POG**	**Stigma SOG**
1 CS	*N*= 1553 German survey participants without migration background Sampled: 2015 Data source: ALLBUS 2016	Quantity positive (1 item) Quantity negative (1 item) Control: SOG contact	Foreigners living in Germany *(filtering open answers on outgroup definition to avoid overlap with SOG)*	Refugees that newly arrived in Germany	**+AG*** (*b* = .081) **-AG*** (*b* = -.047) **+MC*** (*b* = .030) **-MC*** (*b* = -.020) +IP (*b* = .001) -IP (*b* = -.001) **+direct*** (*b* = .039) **-direct*** (*b* = -.064)	**per GTS:** Category **per SCM:** Warmth: Low-to-intermediate Competence: Low-to-intermediate	**per GTS:** Category **per SCM:** Warmth: Medium Competence: Low
2 L	*N*= 390 German panelists without migration background *(subset of study 1 sample)* 3 survey waves (6 months apart) Sampled: 2015-2016 Data source: GESIS panel	Quantity positive (2 items) Quantity negative (2 items) Control: SOG contact	Foreigners living in Germany	Refugees that newly arrived in Germany	**+AG*** (*b* = .016) **-AG*** (*b* = -.010) **+MC*** (*b* = .021) **-MC*** (*b* = -.019) +PT (*b* = .017) -PT (*b* = -.011) +AR (*b* = .020) **-AR*** (*b* = -.064) **T1-T2:** +direct (*b* = 044) **-direct*** (*b* = -.138) **T2-T3:** +direct (*b* = 025) -direct (*b* = -.066)	**per GTS:** Category **per SCM:** Warmth: Low-to-intermediate Competence: Low-to-intermediate	**per GTS:** Category **per SCM:** Warmth: Medium Competence: Low
3a L	*N*= 385 German panelists without migration background	Quantity positive (2 items)	Muslims living in Germany	Refugees that newly arrived in Germany	+AG (*b* = .018) -AG (*b* = -.016) **+MC*** (*b* = .017) **-MC*** (*b* = -.020) +PT (*b* = .001)	**per GTS:** Category **per SCM:**	**per GTS:** Category **per SCM:**

	(subset of study 1 sample) 3 survey waves (6 months apart) Sampled: 2015-2016 Data source: GESIS panel	Quantity negative (2 items) Control: SOG contact			-PT (*b* = -.001) **+AR*** (*b* = .041) -AR (*b* = -.024) **T1-T2:** **+direct*** (*b* = .104) -direct (*b* = -.060) **T2-T3:** +direct (*b* = .019) -direct (*b* = -.129)	Warmth: Low-to-intermediate Competence: Low-to-intermediate	Warmth: Medium Competence: Low
3b L	*N*= 396 German panelists without migration background *(subset of study 1 sample)* 3 survey waves (6 months apart) Sampled: 2015-2016 Data source: GESIS panel	Quantity positive (2 items) Quantity negative (2 items) Control: SOG contact	Sinti & Roma living in Germany	Refugees that newly arrived in Germany	+AG (*b* = .002) -AG (*b* = .015) +MC (*b* = .009) -MC (*b* = -.020) +PT (*b* = .009) -PT (*b* = -.014) +AR (*b* = .029) -AR (*b* = -.052) **T1-T2:** +direct (*b* = .053) -direct (*b* = -.094) **T2-T3:** **+direct*** (*b* = .157) **-direct*** (*b* = -.170)	**per GTS:** Character **per SCM:** Warmth: Low Competence: Low	**per GTS:** Category **per SCM:** Warmth: Medium Competence: Low

Notes. CS = cross-sectional study; L = longitudinal study with three survey waves each six months apart; OG = outgroup; POG = primary outgroup; SOG = secondary outgroup; Stigma = classification according to Goffman's (1963) typology of social stigma, as seen by the author of this current dissertation. AG = attitude generalization; MC = Multiculturalism; PT = primary outgroup threat; * = statistically significant effect.

The following three chapters present the conducted studies. Chapter VII contains the first, cross-sectional study, published in 2022 within Group Processes and Intergroup Relations. Chapter VIII contains the second longitudinal study, published in 2023 within the International Journal of Intercultural Relations. Chapter IX contains the third, longitudinal study.

Chapter VII: The negative secondary transfer effect: comparing proposed mediation theories

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Abstract

The secondary transfer effect proposes that contact with an outgroup impacts attitudes towards another, secondary outgroup. For positive contact, three pathways have been identified for the effect: attitude generalization, multiculturalism, and ingroup reappraisal (deprovincialization hypothesis, operationalized here as national pride). Research on negative secondary transfer effects is still scarce. Using data from a German nationally representative survey, we investigated negative secondary transfer effects from foreigners to refugees. The three pathways were compared while considering positive and refugee contact. Negative and positive secondary transfer effects both occurred (partially) mediated via attitude generalization and multiculturalism but not via national pride. We conclude there might be a danger of generalizing prejudice from unrelated negative experiences via these two mechanisms. Research on forced migration and intergroup contact should further explore them with the ultimate goal of preventing negative secondary transfer effects. Longitudinal or experimental research is needed to address causality, ideally involving various outgroups.

Keywords: Intergroup contact, negative secondary transfer effect, attitude generalization, deprovincialization

In recent years, substantial progress has been made regarding the understanding of intergroup contact. Nevertheless, prejudice, stereotypes and discrimination are still common in everyday intergroup contact, especially in the context of forced migration. Nearly seven decades have passed since Gordon Allport formulated the contact hypothesis (Allport, 1954) and claimed that positive intergroup contact can reduce prejudice, which has since been widely confirmed (Pettigrew & Tropp, 2006). A possible mechanism that has been discussed is the "secondary transfer effect" (STE; Pettigrew, 2009). This effect has been examined in terms of positive contact, but research on negative STE is scarce (Vezzali et al., 2021). The current study aims to add to this knowledge.

Conceptual description of the STE

Conceptually, the STE describes how positive contact with a first, so-called "primary" outgroup leads to a more positive attitude towards a similar, "secondary" outgroup that was not involved in the contact situation. For example, a German person had a positive interaction with an immigrant from eastern Europe, and thus develops a more favorable view of people with that same migration background, but also on people with other migration backgrounds due to perceiving those outgroups similarly. First attempts to explain this effect included cognitive approaches (i.e., cognitive dissonance, meaning congruence between primary and secondary outgroup attitude due "to the motivational principle of achieving harmony between cognitions", c.f. Ebbeler, 2020, p. 41) and affective approaches (i.e., evaluative conditioning, meaning "affective, rather than cognitive, transfer" of "lessened anxiety and heightened empathy", c.f. Pettigrew, 2009, pp. 62-63) that were derived from longitudinal German probability samples (Pettigrew, 2009). In his research on STE, Pettigrew assumed that the similarity between groups plays a significant role in the occurrence and strength of the STE.

Proposed mechanisms behind the STE

Since then, there have been several theories on the mechanisms of the STE beyond the initial theory. Three main mediational processes have been identified, commonly described as attitude generalization, multiculturalism and ingroup reappraisal (Ebbeler, 2020). Attitude generalization refers to the initially investigated mechanism that positive contact leads to a more positive attitude towards a primary outgroup which is then generalized to a secondary outgroup. The other two pathways can be summarized under the deprovincialization hypothesis, although there has been some discourse regarding adequate operationalizations (Lolliot et al., 2013; Vezzali et al., 2021). This hypothesis reflects that intergroup contact challenges an individual's original views on the in- and outgroup leading to a broader acceptance of diversity (multiculturalism) and distancing from the ingroup (ingroup reappraisal). In other words: intergroup contact broadens the individual's beliefs so that differing cultural values can be perceived, understood and appreciated.

Empirically, different operationalizations of the deprovincialization hypothesis were examined with inconclusive results (Hodson et al., 2018; Lolliot et al., 2013; Sparkman, 2020; Vezzali et al., 2021). Positive results were found for the operationalization via multiculturalism (Verkuyten et al., 2010) or via ingroup reappraisal (Pettigrew, 2009; Tausch et al., 2010, Study 1). Examples of non-findings include Studies 2, 3, and 4 of Tausch et al. (2010) who did not find any mediating effects when operationalizing deprovincialization as ingroup attitude. In more recent publications, more empirical evidence has been found for broader operationalizations of the deprovincialization hypotheses, as researchers focused on various parts of Pettigrew's initial explanation of ingroup reappraisal (Hodson et al., 2018; Lolliot et al., 2013). One of these broader definitions is openness towards new experiences, given by Hodson et al. (2018) who

understand Pettigrew's words as "contact shakes up one's perspective and encourages novel ways of thinking about how the world works" (Hodson et al., 2018, p. 530).

The importance of contact valence

One of the most crucial factors, which should be regarded in all kinds of intergroup contact research is contact valence. Yet, for a long time intergroup contact research was characterized by a positivity bias (Barlow et al., 2012) with few studies investigating negative intergroup contact. The major results from studies on positive intergroup contact suggested contact as an optimistic and feasible way to improve intergroup relations, but were often resting on the crucial key assumption that intergroup contact is at least mainly positive in nature. Only more recently, the research paradigm started to shift, allowing for the necessity to research negative intergroup contact (e.g., Barlow et al., 2012; Paolini et al., 2010; Thomsen & Rafiqi, 2017). These studies suggest that negative contact might occur independent from positive contact (Barlow et al., 2012) and can have detrimental consequences for intergroup relations by fostering negative attitudes and increasing prejudice. Thus a consensus among intergroup contact researchers emerged, that one should be accounted for when researching the other (Barlow et al., 2012). This also applies to research on STE (Vezzali et al., 2021).

A lack of research on negative STE

In light of this history, it is unsurprising that comparatively few studies investigated STEs from negative contact (Lissitsa & Kushnirovich, 2020; Vezzali et al., 2021). Although findings vary to a certain extent, these studies provide first empirical evidence for negative STE in direct or parasocial contact (such as exposure to outgroup media portrayals) beyond the scope of positive STEs (Brylka et al., 2016; Jasinskaja-Lahti et al., 2020; Meleady & Forder, 2018;

Lissitsa & Kushnirovich, 2020). A larger proportion of existing studies took place in the Finnish context with Russian or African immigrant groups, limiting the generalizability of supporting results (Brylka et al., 2016; Mähönen & Jasinskaja-Lahti, 2016; Jasinskaja-Lahti et al., 2020). Additionally, some studies have the limitation that contact with the secondary outgroup was not controlled for (Andrews et al., 2018; Harwood et al., 2011; Joyce & Harwood, 2014; Mähönen & Jasinskaja-Lahti, 2016; Lissitsa & Kushnirovich, 2018). In researching STE, contact with the secondary outgroup should be controlled for, as it might shape primary and/or secondary outgroup attitude. Specifically, it might influence an individual's attitude towards the secondary group more directly than contact with the primary outgroup (Pettigrew, 2009).

Although most studies focused on attitude generalization as a mediating mechanism, two studies have provided evidence for the generalization of outgroup avoidance behavior (Meleady & Forder, 2018) and outgroup threat (Zingora & Graf, 2019), respectively. Regardless, research on negative STE is only emerging, calling for future research in robust and extensive study designs (Jasinskaja-Lahti et al., 2020, Vezzali et al., 2021). In particular, further mechanism of the negative STE should be examined and compared. Important mechanisms that have been found in the secondary transfer of positive contact, including multiculturalism and ingroup reappraisal, could work in the same or different direction. To gain a deeper understanding of contact valence, it is critical to compare possible mediators and determine their directions and working mechanisms.

Research Context

Studying the effects and mechanisms of negative STE is of particular importance in the context of forced migration. Regular and forced migration has increased due to the ongoing globalization, poverty and armed conflicts predominantly in Middle Eastern and Northern

African countries, e.g., the Syrian Arab Republic (Cowling et al., 2019). Especially in 2015 and 2016, first asylum applications in Germany increased significantly, causing the public to refer to it as a "refugee crisis" (BAMF, 2021). In this scenario of intergroup contact, many Europeans were presented with the relatively sudden arrival of an outgroup with whom they had not been in contact before. Many promptly held a strong opinion about this new outgroup, often a negative or skeptical one (see e.g. Renner et al., 2017). As Germany admitted approx. 1.5 million forced migrants in the period between 2014 and July 2017 alone (Kotzur & Wagner, 2021), refugees make up a substantially sized minority group in German society. In this context, negative STE from unrelated contact experiences with other migrant outgroups could be especially detrimental for the public perception of forced migrants. To date, little is known about negative STE with regard to refugees and forced migration, except for a single study by Ünver et al. (2021). These researchers found correlational evidence for negative STE (secondary outgroup: Syrian refugees; primary outgroup: other immigrant outgroups) in a sample of Turkish participants as well as a sample of Kurdish participants, a minority group in Turkey (Ünver et al., 2021). More research is needed to see if such results would also emerge in different intergroup contexts. Conducting a similar study in the German context would be especially interesting, because just as in Turkey, refugees are a sizeable minority group in Germany (Kotzur & Wagner, 2021). However, results could also differ in the German context. Compared to the Turkish context, more cultural distance can be expected between host country nationals and the refugee minority group, as evident from the involved countries' placements on various culture-comparative indices such as for example the WEIRD framework (c.f. Heinrich et al., 2010), or the Hofstede dimensions (c.f. Hofstede, n.d).

The current study

Therefore, the aim of the current research was to investigate negative STE in the context of refugees and forced migration compared to positive STE, thus adding to the scarce research by looking at data from a representative sample of the German majority group. Since all refugees (in the context of the 2015/16 European refugee crisis) can be seen as immigrants from a German majority perspective, but not all immigrants/ people with a foreign background are refugees, an overlap between these two group labels is largely unavoidable and needs to be approached methodologically. Additionally, the study aimed to compare three mediation mechanisms (attitude generalization, multiculturalism operationalized as acceptance of diversity, and ingroup reappraisal operationalized as national pride) and their role in positive, as well as, negative STE. Evidence for the latter two mechanisms is so far only based in research on positive STE.

We expect that they are likewise behind negative STE, as extant research suggests that both types of STE rely on the same mechanisms (c.f. Vezzali et al., 2021, p. 29). However, we expect them to work in opposite direction, than they work for positive STE: in former research, negative contact was found to be related to more anti-foreigner sentiment (Thomsen & Rafiqi, 2017), increased group salience (Paolini et al., 2010) and finally increased prejudice (Barlow et al., 2012). Hence, negative contact is theoretically more likely to reduce acceptance of diversity and to emphasize (national) pride by making the ingroup more salient, which in turn would cause more negative attitudes towards a secondary outgroup.

We hypothesize that above mentioned mechanisms differ in strength based on previous research that included a combination of the investigated mediators (c.f. Lolliot et al., 2013; Vezzali et al., 2021 tables 1-3). One study (Pettigrew, 2009) found that deprovincialization (operationalized as ingroup identity) “was a weaker mediator of the secondary transfer effect than was attitude generalization” (c.f. Lolliot et al., 2013, p. 89). The same emerged when other

operationalizations of deprovincialization were utilized (c.f. Tausch et al., 2010, as cited in Lolliot et al., 2013, p. 90). However, all these studies investigated only positive – not negative – STE and so far, none investigated all three studied mediation mechanisms jointly. This warrants exploring differences in mediator strength. We acknowledge that more mediators of the STE have been identified (c.f. Vezzali et al., 2021, Figure 1) but only the selected three mediators were available in the utilized secondary data. Still, we argue that this selection covers all three types of mediators mentioned by Vezzali et al. (2021): one mediator concerning the outgroup (attitude generalization), one mediator concerning the ingroup (national pride), and one mediator involving the self (acceptance of diversity).

Thus, we specified the following hypotheses:

1) Positive contact experiences with the primary outgroup of foreigners are related to more positive attitudes towards the secondary outgroup of refugees (positive STE) when accounting for contact with refugees. Negative contact experiences are related to more negative attitudes towards the secondary outgroup (negative STE) when accounting for contact with refugees.

2) Both the positive and the negative STE is mediated by the attitude towards the primary outgroup as well as acceptance of diversity and national pride. More specifically, we hypothesize that

a) Positive contact is related to more positive attitudes, higher acceptance of diversity and lower national pride which are in turn related to more positive attitudes towards the secondary outgroup.

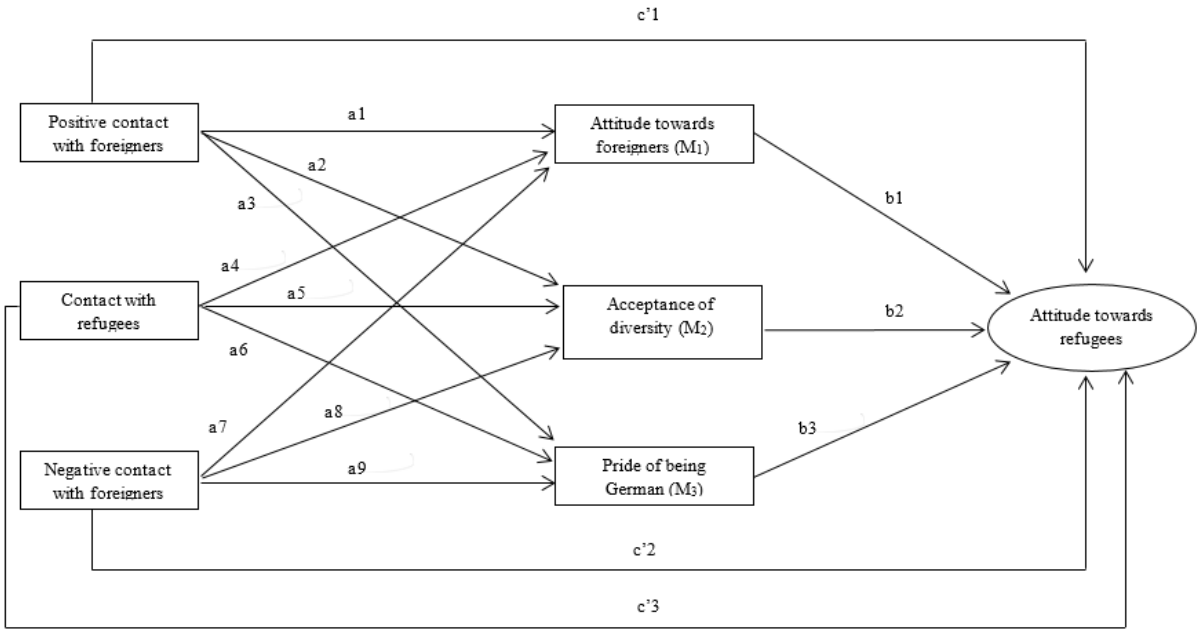
b) Negative contact is related to less positive attitudes towards the primary outgroup, a lower acceptance of diversity, and more national pride, which are in turn all related to more negative attitudes towards the secondary outgroup.

3) The STE via the mechanism of attitude generalization shows a higher effect size than via acceptance of diversity and national pride for both the positive and negative STE.

The resulting hypothesized model is depicted in Figure 1 below.

Figure 1

The proposed structural equation model (mediators are allowed to correlate).



Methods

Sample and design

To answer the research questions, data were used from the German general social survey "Allgemeine Bevölkerungs-Umfrage der Sozialwissenschaften", in short "ALLBUS" (GESIS, 2017; 2018) conducted in 2016, which is representative of the German population. The ALLBUS

is conducted every other year, and data sets consist of 3000 to 3500 independent respondents randomly drawn from private households. The current study aims to investigate negative STEs from a majority group perspective in a cross-sectional design. Due to the nature of the research questions, steps were taken to filter the target population (German majority sample). Consequently, only respondents without a reported migration background were included in the analyses. This was done by filtering out respondents who reported not to hold a German citizenship since birth or reported that one or both of their parents were not born in Germany. We acknowledge that respondents might unrelatedly differ in their perception (and others' perception of them) as members of the societal majority group, which might not be picked up by this filtering process.

Measures

Measurement of each construct shall be summarized in the following. For additional information on item wording see Appendix A.

Positive contact with Foreigners

The frequency of positive contact experiences with the primary outgroup foreigners was measured with a single item: "When you think about all your contacts with foreigners who live in Germany: How often have you had positive experiences?" (c.f. Wasmer & Baumann, 2018, p. 23). The original item was rescaled so that answer categories ranged from 1= *never* to 5= *always*. The separate answer category "I have never had contact with foreigners" was coded as 0.

Negative Contact with Foreigners

The frequency of negative contact experiences with the primary outgroup foreigners was measured with a single item: "And how often have you had negative experiences?" (c.f. Wasmer

& Baumann, 2018, p. 24). Answer categories were coded in the same fashion as for the measurement of positive contact with foreigners.

Contact with Refugees

Whether or not a participant had experienced any contact with the secondary outgroup refugees was assessed with a single item: "In recent months, many refugees have come to Germany. Have you ever had direct personal contact with refugees?" (c.f. Wasmer & Baumann, 2018, p. 98). Answer categories were recoded to 0= *no* and 1= *yes*.

Attitude towards Foreigners

Respondents' attitude towards the primary outgroup foreigners was assessed via the single item: "Do you think that the presence of foreigners is advantageous or disadvantageous for Germany?" (c.f. Wasmer & Baumann, 2018, p. 31). Answer categories ranged from 1= *clearly disadvantageous* to 5= *clearly advantageous*.

Attitude towards Refugees

Respondents' attitude towards the secondary outgroup refugees were assessed via four items (α = .82), from which a latent variable was created. These four items concerned evaluations of whether the presence of refugees poses more risks or more opportunities for German society in various domains of life (c.f. Appendix A). Item answer categories were recoded to range from 1= *considerably more risks* to 5= *considerably more opportunities*.

Acceptance of diversity

Acceptance of diversity was measured via two items (r = .44): "It is better for a country if all people belong to a common culture." and "A society with high levels of cultural diversity will be better at tackling new problems." (c.f. Wasmer & Baumann, 2018, p. 35). Item answer

categories ranged from 1= *completely disagree* to 4= *completely agree*. The second, negatively coded item was reverse-scaled and a mean score was created.

National pride

National pride was assessed via a single item: "Would you say you are very proud, fairly proud, not very proud or not at all proud to be German?" (c.f. Wasmer & Baumann, 2018, p. 25). Answer categories were recoded to range from 1= *not at all proud* to 4= *very proud*.

Analytic strategy

Before the ALLBUS data was analyzed, a number of filters were applied to retain the target sample of a German majority group (c.f. Appendix B, Table B1). First, missing cases were filtered out in a listwise fashion, which reduced the sample size from originally *N*= 3490 to *N*= 2961. Second, participants who reported a migration background were filtered out, reducing the sample size further to *N*= 2593. Respondents were coded as having a migration background if they did not satisfy the following characteristics: holding a German citizenship since birth (c.f. Wasmer & Baumann, 2018, pp. 16-17) and, the country of origin of both parents was Germany (including those born in former eastern territories; c.f. Wasmer & Baumann, 2018, p. 78). The final filtering step aimed to exclude participants that did not conceptually distinguish between the primary outgroup termed "foreigners" and the secondary outgroup termed "refugees". An open question on the subject had been administered prior to the foreigner-related items. The specific wording was "When you think of the foreigners living in Germany, which groups do you think of?" (c.f. Wasmer & Baumann, 2018, p. 22). Respondents were encouraged to name one or more groups that came to mind. In analyzing the open answers to this question, it was possible to identify respondents who also thought of refugees in combination with the group label "foreigners" and might have understood both group labels interchangeably. Using several

keywords (e.g., “refugees”, “asylum”, “persecution”), respondents actively naming refugees were excluded. These keywords are reported in Table B1. This filtering step resulted in *N*=1873 remaining cases. Additionally, those who did not answer the open question and those indicating an all-inclusive understanding of the group label “foreigners” were excluded (e.g., “I think of no particular group since everyone is a foreigner somewhere”; “Non-Europeans”; “Those that do not integrate”). Both authors reviewed the selections and differences were solved through discussion. Finally, a sample size of *N*=1553 emerged from the filtering. These respondents still were heterogeneous in their answer to the open question but did not indicate that the group label “foreigners” included refugees from their perspective. Table 3 depicts descriptive statistics and item correlations. We conducted a number of robustness analyses comparing this sample with the rest of the respondents (see Appendix B). Significant (though small) differences on items of interest emerged only for contact with refugees ($\chi^2(df=1) = 17.934$, $p<.001$) and positive contact with foreigners ($t(df=2959) = 2.192$, $p=.028$).

Table 3

Descriptive statistics and correlations for study variables.

	M	*SD*	1	2	3	4	5	6	7
1	1.97	1.11	1						
2	3.59	1.40	.22**	1					
3	3.18	0.90	-.08**	.37**	1				
4	2.91	0.73	-.08*	.29**	.48**	1			
5	1.99	0.79	.00	.06*	.12**	.14**	1		
6	2.46	0.72	-.11**	.28**	.55**	.43**	.14**	1	
7	.36	0.48	.19**	.21**	.14**	.12**	.08**	.16**	1

Note. *N*=1553 *$p<.05$. **$p<.01$. (two-tailed). 1: negative contact with foreigners; 2: positive contact with foreigners; 3: attitude towards foreigners; 4: acceptance of diversity; 5: pride of being German; 6: attitude towards refugees; 7: contact with refugees. Values given for attitude towards refugees are mean scores of the indicator variables.

To answer the research hypotheses, the multiple mediation model depicted in Figure 1 was estimated. Mediation analyses were carried out using MPlus v. 8.6 (Muthén & Muthén, 2017). Assessing model assumptions, we found the linearity assumption reasonably fulfilled (c.f.

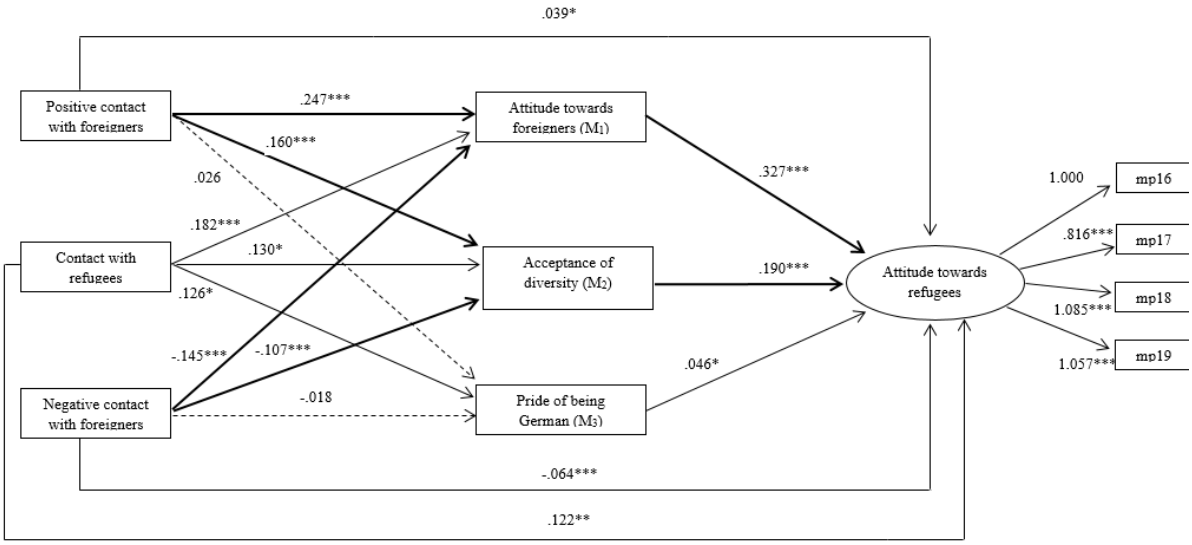
Figure B1 in Appendix B). To handle a departure from multivariate normality (z = 6.451 whereas Byrne (2016) recommends >5 as a cut-off value) we employed bias-corrected bootstrapping (10000 iterations; c.f. Nevitt & Hancock, 2001). All reported coefficients are unstandardized.

Results

The model shown in Figure 1 was tested to see the extent by which the frequency of respondents' negative contact experiences with the primary outgroup of foreigners living in Germany had an impact on their attitude towards the secondary outgroup of refugees via a) a more negative attitude towards the primary outgroup, b) decreased acceptance of diversity and c) increased national pride. Results are depicted in Figure 2. Table 4 summarizes the found indirect effects. Table 5 shows the results of contrast analyses that were conducted based on Hypothesis 3.

Figure 2

The empirically tested structural equation model. Mediators were allowed to correlate. Reported coefficients are unstandardized. Dotted lines represent non-significant relations; bold lines represent significant indirect paths.



Notes. p<.05. p<.01**. p<.001***. N= 1553.*

Table 4

Summary of indirect, direct and total secondary transfer effects (N= 1553).

Hypothesized effects	*b*	*SE*	95% CI	*p*
Negative contact → Att. foreigners → Att. refugees *(M_1-)*	-.047	.007	[-.062, -.033]	<.001
Positive contact → Att. foreigners → Att. refugees *(M_1+)*	.081	.007	[.066, .096]	<.001
Negative contact → Acc. diversity → Att. refugees *(M_2-)*	-.020	.004	[-.030, -.013]	<.001
Positive contact → Acc. diversity → Att. refugees *(M_2+)*	.030	.005	[.022, .041]	<.001
Negative contact → pride German → Att. refugees *(M_3-)*	-.001	.001	[-.004, .001]	.418
Positive contact → pride German → Att. refugees *(M_3+)*	.001	.001	[.000, .004]	.177
Negative contact → Att. refugees *(c'2)*	-.064	.014	[-.091, -.036]	<.001
Positive contact → Att. refugees *(c'1)*	.039	.012	[.015, .063]	<.001
Total effect of negative contact *(Negative STE)*	-.132	.017	[-.164, -.099]	<.001
Total effect of positive contact *(Positive STE)*	.151	.013	[.125, .177]	<.001

Note. M_1= Attitude generalization; M_2= Multiculturalism; M_3= Ingroup Identification. c'1= direct negative STE. c'2= direct positive STE. Pride German = pride of being German. Positive indirect paths are marked with a '+' and negative indirect paths with '-'.

Hypothesis 1

Positive contact was associated with a more positive secondary outgroup attitude (*b* = .151, *p*<.001*,* 95% CI [.125, .177]), indicating a positive STE. Likewise, negative contact was associated with a more negative secondary outgroup attitude (*b* = -.132, *p*<.001*,* 95% CI [-.164, -.099]), representing the negative STE.

Hypothesis 2

Regarding hypothesis 2a), the positive STE occurred via attitude generalization and acceptance of diversity (partial mediation) but not via pride of being German. More positive contact was related to a more positive attitude towards the primary outgroup which in turn was associated with a more positive secondary outgroup attitude, thus indicating a positive STE via attitude generalization (*b* = .081, *p<.001,* 95% CI [.067, .097]). Additionally, more positive

contact was associated with a higher acceptance of diversity that, in turn, was associated with a more positive attitude towards the secondary outgroup, thus indicating a positive STE via multiculturalism (b = .030, $p<.001$, 95% CI [.022, .041]). No significant indirect effect via pride of being German was found (b = .001, $p=.188$, 95% CI [.000, .004]), since no direct effect from positive contact to pride of being German emerged (b = .026, $p=.085$, 95% CI [-.004, .055]). Positive contact also had a significant positive direct effect on secondary outgroup attitude (b = .039, $p=.002$, 95% CI [.015, .063]).

Concerning hypothesis 2b), the negative STE occurred via attitude generalization and acceptance of diversity (partial mediation) but not via national pride. More negative contact was related to a more negative attitude towards the primary outgroup which, in turn, was associated with a more negative secondary outgroup attitude, thus indicating a negative STE via attitude generalization (b = -.047, $p<.001$, 95% CI [-.062, -.033]). Negative contact was also related to a lower acceptance of diversity, which in turn was associated with a more negative secondary outgroup attitude, thus indicating a negative STE via multiculturalism (b = -.020, $p<.001$, 95% CI [-.030, -.013]). No significant indirect effect via national pride was found (b = -.001, $p=.418$, 95% CI [-.004, .001]), since negative contact was not related to pride (b = -.018, $p=.348$, 95% CI [-.055, .020]). Additionally, negative contact was directly negatively related to secondary outgroup attitudes (b = -.064, $p<.001$, 95% CI [-.091, -.036]).

The general model fit was acceptable (model fit indices: χ^2= 87.296 (df = 20, p < .001), $RMSEA$ = 0.047, TLI= 0.962, CFI = 0.982 and a $SRMR$ = 0.017). Looking at R^2 values, the set of equations predicting national pride explained a low share of variance (R^2=.009) as opposed to those predicting attitude towards foreigners (R^2=.169), acceptance of diversity (R^2=.112), and attitude towards refugees (R^2=.426).

Hypothesis 3

Contrast analyses indicated that for negative as well as positive STE, the three indirect paths (attitude generalization, multiculturalism and pride) differed significantly in strength (c.f. Table 5). Comparisons with the "national pride" pathways shall not be discussed further, since the indirect effects via "national pride" were found to be non-significant in the analyses above for both negative and positive contact.

The positive "attitude generalization" pathway was significantly stronger than the positive "multiculturalism" pathway (b = .050, 95% CI [.032, .069]). This indicates that the positive STE also works to a significantly larger degree via "attitude generalized" than "multiculturalism".

Similarly, the negative "attitude generalization" pathway was significantly different in strength compared to the negative "multiculturalism" pathway (b = -.027, 95% CI [-.043, -.012]). This result indicates that the negative STE works by a significantly larger degree via "attitude generalization" than "multiculturalism".

Table 5

Pairwise contrasts of indirect effects (N=1553).

Contrast	Paths	*B*	95% CI	
			LLCI	ULCI
Attitude generalization (-) vs. Multiculturalism (-)	*a7*b1* vs. *a8*b2*	-0.027*	-0.043	-0.012
Attitude generalization (-) vs. Ingroup identification (-)	*a7*b1* vs. *a9*b3*	-0.046*	-0.061	-0.033
Multiculturalism (-) vs. Ingroup identification (-)	*a8*b2* vs. *a9*b3*	-0.019*	-0.029	-0.012
Attitude generalization (+) vs. Multiculturalism (+)	*a1*b1* vs. *a2*b2*	0.050*	0.032	0.069
Attitude generalization (+) vs. Ingroup identification (+)	*a1*b1* vs. *a3*b3*	0.080*	0.065	0.095
Multiculturalism (+) vs. Ingroup identification (+)	*a2*b2* vs. *a3*b3*	0.029*	0.020	0.040

Note. Estimates of significant contrasts (as per bias-corrected 95% Confidence Interval) are marked with an '*'.

Discussion

The aim of the current research was to investigate the negative STE in the context of refugees and forced migration while taking the positive STE into account and thus add to the scarce literature by regarding a more closely representative sample of the German majority group. Three different mechanisms were examined as mediators of the negative as well as positive STE in this yet unexplored intergroup setting and cultural context: 1) attitude generalization, 2) multiculturalism operationalized as acceptance of diversity and 3) ingroup reappraisal operationalized as national pride, the latter two stemming from the deprovincialization hypothesis. Regarding our first hypothesis, positive contact with foreigners was related to a more positive- and negative contact was related to a more negative attitude towards foreigners living in Germany (primary outgroup) and also towards refugees (secondary outgroup), beyond actual refugee contact. This provides empirical support for the core component of both the positive and negative STE. For the second hypothesis, results were less clear since we found empirical support for the mediating mechanism of attitude generalization and acceptance of diversity but not for national pride. This emerged for both positive and negative STE, thereby lending support to the idea that both work via similar mechanisms. To summarize these mechanisms: in line with our hypotheses, positive contact was associated with a more positive primary outgroup attitude and a higher acceptance of diversity, and thereby indirectly associated with a more positive secondary outgroup attitude. As hypothesized negative contact operated the same pathways, albeit in opposite direction: it was related to a more negative primary outgroup attitude and a lower acceptance of diversity and thereby indirectly associated with a more negative secondary outgroup attitude. With regard to the third hypothesis, it became clear that both negative contact and positive contact affected attitudes towards

refugees to a larger degree via attitude generalization as opposed to multiculturalism. Effect sizes were small-to-medium and thus comparable to those found in meta-analyses (e.g. Pettigrew & Tropp, 2006; Sparkman, 2020).

Our findings indicate that negative STE might occur in an intergroup context of forced migration, whereby members of the majority group generalize from unrelated contact experiences with other migrant outgroups to form an opinion on forced migrants. Especially in cases where actual contact with forced migrants is (yet) absent or unlikely, this could have detrimental effects. It could contribute to a negatively biased baseline stance regarding this newly arriving outgroup before contact might even occur. However, we also found an indication that positive STE might similarly apply. Majority group members might generalize from positive encounters with other migrant groups, to form a more positive attitude towards forced migrants. Our results only indicate these possibilities but are subjected to limitations from our cross-sectional study design.

Nevertheless, our results regarding negative (and positive) STE via attitude generalization are congruent with those of the (cross-sectional) study by Ünver et al. (2021) that was situated within a different national context (Turkey). Even though the gathered evidence is merely cross-sectional, it emerged in similar fashion within two intergroup contexts where host cultures differ between one-another and also regarding cultural similarity to the refugees' culture. Germany is a WEIRD (western, educated, industrialized, rich, democractic; c.f. Heinrich et al., 2010) country in middle Europe with historical ties to Christianity. In comparison, Turkey cannot be counted to the WEIRD countries and has historical ties to Islam, a religion still practiced today by many Turks/Kurds and also many Syrian refugees. Cultural differences among the two countries and also in relation to Syria emerge when looking at other comparative indices, like the Hofstede

values (Hofstede, n.d.). Based on religious differences as well as differences in appearance alone, refugees likely have a much higher potential to be recognized (and ostracized) as an outgroup in Germany compared to Turkey. On the other hand, Ünver et al. (2021) mention that a potential for ostracizing also exists in the Turkish context, for example via language barriers.

That negative STE occurs in both contexts speaks for the generalizability of the phenomenon across intergroup settings/ national contexts. This does not come as a surprise since the contact hypothesis (which lies at the core of STE) has been replicated across different intergroup settings including minimal groups. Nevertheless, this is so far speculation and, ultimately, more empirical research of the negative STE across intergroup settings and national contexts is needed.

On a more theoretical level, the results suggest, that positive and negative STE might operate via the same mechanisms which include the multiculturalism pathway. As Vezzali et al. (2021) state, past research indicated that both positive and negative STE operate via attitude generalization. Effects via multiculturalism had been shown for positive STE but have not yet been investigated regarding negative STE. We provide empirical results, suggesting that multiculturalism is an additional mechanism by which negative STE might occur. Negative contact experiences with a primary outgroup diminish both the attitude towards this outgroup as well as the general acceptance of diversity (i.e., multiculturalism). In turn, both lead to a less favorable evaluation of outgroups unrelated to the contact scenario. The contrast analyses conducted in light of Hypothesis 3 indicate that the attitude generalization mechanism exerts a relatively stronger indirect effect than the multiculturalism mechanism. Yet, we have to acknowledge shared method bias as a potential alternatively explanation (c.f. Lolliot et al., 2013, p. 88). Nevertheless, we identified the multiculturalism pathway as an independent additional

route, which should be investigated in future studies on negative STE. It differs from the attitude generalization mechanism, in that it can be seen as a mediator involving the self (c.f. Vezzali et al., 2021), and a process whereby internal adjustment of the worldview underlies the STE, namely „broaden[ing of] individual horizons […] [so that] the value of other cultures can be more easily perceived and accepted“ (Ebbeler, 2020, p. 36). In general, more knowledge of alternative working mechanisms beyond attitude generalization is needed, ideally involving various intergroup scenarios or cultural settings. So far it also remains unclear whether our findings would replicate for (negative) STEs from a minority group perspective.

Although we did not find support for deprovincialization via national pride, there are many different operationalizations of deprovincialization and thus further mechanisms that need to be explored. Since the original work by Pettigrew (2009), researchers have criticized the operationalization of ingroup reappraisal via pride (Ebbeler, 2020). The idea behind the proposed working mechanism is that positive contact experiences with outgroup members should broaden the perspective by making ingroup membership less important. A less important ingroup membership should reduce outgroup devaluation stemming from the simple fact that they are not part of the ingroup (Lolliot et al., 2013; Zick et al., 2011). We argued that negative contact could operate this mechanism in the opposite direction. However, national pride might not be a good indicator for ingroup reappraisal from a majority perspective. Prior criticism of Pettigrew's (2009) deprovincialization hypothesis includes that the theoretical description of said processes remained rather vague (Vezzali et al., 2021). In the current study, the measure of national pride was a single item measure, while other facets of ingroup identification were not covered. Especially in Germany, national pride can be interpreted in different ways (see e.g., Wagner et al., 2012). Wagner et al. (2012) "assume that being proud to be a German is an indicator of

generalized positive assessment of the nation" (p. 322), as opposed to "a positive evaluation of German history [which] may reflect idealization of the Holocaust" (p. 322). We can try to empirically approach this question, regressing political ideology (left to right) and shame towards the holocaust (c.f. Wasmer & Baumann, 2018, p. 40) on our measure of national pride. For the final sample (N=1553) as well as the sample of N=2961 listwise valid cases, a more left-wing political orientation is associated with higher national pride, whereas shame towards the holocaust does not exert a significant effect (see Table B6). This implies that our measure of national pride, at the very least, does not seem to reflect the second component mentioned by Wagner et al. (2012). Our lack of empirical support vis-a-vis deprovincialization through national pride could yet be rooted in the methodology of measurement of national pride rather than its content. Firstly, ingroup reappraisal describes a longitudinal process, which is obviously not something that can be depicted in the current cross-sectional research design. Secondly our operationalization via national pride covers only one aspect of this theorized phenomenon, but other aspects have to also be taken into account, e.g. it would also be conceivable to operationalize ingroup reappraisal as (change in) ingroup attitude. Future research should focus on all these aspects, preferably in a longitudinal design, and could thus very well uncover empirical support for Pettigrew's (2009) deprovincialization hypothesis.

Our findings can give several practical implications. Firstly, they suggest that interventions could reduce the consequences of negative STEs in different ways. They could target specific outgroup attitudes but they could also target diversity beliefs directly. Targeting diversity beliefs in general might be a more effective intervention strategy for avoiding spillover of prejudice via negative STE, if attitudes towards a primary outgroup are deeply ingrained and

thus potentially harder to change. In the end, a rigorously designed intervention study across various intergroup contexts would be needed to generate empirical support for these suggestions.

Additional practical implications can be drawn. If both positive and negative STEs work through similar mechanisms, it might be possible to counteract the consequences of negative STE by fostering positive intergroup contact. There is an ongoing scientific debate about, whether positive and negative contact differ in terms of effect strengths. From visual inspection alone it becomes clear that our effects from negative STE paths seem smaller (in absolute terms) than those of positive STE paths. These findings are in line with results from Lissitsa and Kushnirovich (2018) who found stronger positive, rather than negative, STE via attitude generalization. They are contradictory to findings from Graf et al. (2014) and Árnadóttir et al. (2018), that suggest stronger influence from negative contact as opposed to positive contact (valence asymmetry). A formal, statistical test of this idea was beyond the scope of the current article but could be attempted in future research. It would be equally important to explore the potential for interaction between positive and negative contact (see e.g. Árnadóttir et al., 2018) in light of its consequences for secondary transfer effects.

Lastly, it should be noted that a naming of the newly arrived outgroup “refugees”, within the groups of people associated with the label “foreigners” could, in itself, be seen as evidence for STE. In categorizing these outgroups together, attitude change towards the novel outgroup via evaluative conditioning should become more likely (c.f. Ebbeler, 2020, p. 38).

The current findings are subject to several limitations. Possibly the most important is that all results stem from cross-sectional analyses. While the STE is understood and needs to be treated in terms of processes, cross-sectional data can only give hints regarding interrelations, controlling for other factors. The issue of disentangling the direction of such interrelations has

been termed secondary contact problem (Tausch et al., 2010). In our model, the pathways were assumed in a theory-based fashion, but empirical causalities might differ from these assumptions. This is a problem that is common to intergroup contact research (Kotzur & Wagner, 2021) presumably, at least in part, due to practical reasons. Previous research on negative STEs has mostly been cross-sectional (Lissitsa & Kushnirovich, 2020; Vezzali et al., 2021). Therefore, more research is needed in longitudinal and experimental designs with an effective manipulation control. As experimental manipulations of negative contact carry with them a certain ethical issue, observational longitudinal data (in terms of naturally occurring quasi-experiments) could be a valuable alternative data source.

Another limitation of the current study concerns the measurement of constructs, many of which were single items. Single-item measures need to be treated cautiously because they might have a lower reliability and might not capture all aspects of complex multi-faceted constructs. Using secondary survey data in this study we are subjected to this limitation, which is common to large-scale survey research. Especially our operationalization of ingroup reappraisal as national pride and the cross-sectional measurement might be criticized. The negative connotation of national pride (in the German context) could be an explanation for why ingroup reappraisal did not mediate the effect of contact with foreigners on attitude towards refugees. It is possible that our finding (that both the negative and the positive STE work by a significantly larger degree via attitude generalization than by multiculturalism) occurs due to our operationalization. Measuring attitude generalization might simply be easier and also has a shared method bias with the final outcome (both measuring attitudes towards outgroups). The actual process may be just as strong for multiculturalism or deprovincialization, but the operationalization as acceptance of

diversity and national pride and our single-item measurement of both might not have been suitable.[1]

While our choice to analyze secondary survey data generated above mentioned limitations, it also gave us the possibility to conduct sufficiently powered analyses. From Vezzali et al.'s (2021) overview of previous studies on negative STE, it becomes apparent that sufficiently powered studies are needed in this emerging research field.

Similarly, to bias stemming from measurement of our constructs, one could argue that omitted variable bias should be considered. As a result, we conducted additional robustness analyses, where we estimated our model while controlling for other constructs that might relate to outgroup attitudes (see Appendix B, Table B7). While controlling for political ideology (Thomsen & Rafiqi, 2019), social trust (van der Linden et al., 2017) and anomie (Hövermann et al., 2015) the results still substantially offer the same implications (c.f. Appendix B, Table B7).

Another limitation concerns our measurement of secondary outgroup contact. Previous research has called for contact with secondary outgroups to be included as a control variable (e.g. Lolliot et al., 2013; Pettigrew, 2009; Tausch et al., 2010). In the current study, we could only measure the existence of prior contact with refugees but not its frequency or valence.

On a related note, we acknowledge that the primary outgroup (foreigners living in Germany) is an arbitrary group which can imply different meanings for different people. We tried to take this into account by filtering based on the self-reported understanding of the group label "foreigners". However, this involved the interpretation of qualitative data which is always subject to personal judgement. Repeating our analyses in an intergroup framework with an easier group distinction would be desirable.

Conclusion

This study is, to our knowledge, one of very few studies on the negative STE and the first to compare three mechanisms in a large German majority sample and the context of forced migration. We show two parallel pathways by which negative STE might work: via attitude generalization and also via multiculturalism. We further show that attitude generalization seems to be the stronger mechanism, a finding which applies to both negative and positive STE. Generally, our findings imply that negative STE works in a very similar manner as its positive counterpart. The research at hand opens several avenues for future research. Firstly, longitudinal or experimental studies should be conducted to investigate whether the hypothesized processes can indeed be observed longitudinally and/ or from experimental manipulation. Secondly, knowledge on facilitating conditions, contextual and individual differences regarding negative STEs is yet scarce (Vezzali et al., 2021). Future research should focus on these research gaps and investigate negative STEs for different types of intergroup scenarios and different forms of intergroup contact.

Chapter VIII: Generalizing from negative contact: The causal sequence problem and proposed mechanisms of (negative) secondary transfer effects

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Abstract

The secondary transfer effect (STE) describes how contact with one outgroup (the so-called 'primary outgroup') can affect evaluations of another outgroup (the so-called 'secondary outgroup'), that was uninvolved in the contact scenario. This research is about the transfer of negative contact. There are only few studies on the STE from negative contact available and even less longitudinal ones. We conducted such a longitudinal study, utilizing data from the GESIS-Panel, (N = 390; 3 survey waves). We investigated negative STE in an understudied intergroup context: forced migration. The primary outgroup was comprised of 'foreigners', living in Germany, the secondary outgroup were 'refugees.' We investigated three mechanisms by which negative STE might occur: firstly, contact might affect the primary outgroup attitude, which then affects the secondary outgroup attitude – a mechanism termed 'attitude generalization.' Secondly contact might be mediated by the general acceptance of diversity and thereby evaluations of outgroups associated with cultural diversity – a mechanism termed 'multiculturalism.' Lastly, contact might affect the perceived threat posed by the primary outgroup, and consequentially evaluations of secondary outgroups – a mechanism that we term 'primary outgroup threat.' Applying a cross-lagged panel mediation model, we investigated these theorized mechanisms. Negative STE emerged directly and also indirectly via 'attitude generalization' and 'multiculturalism' – findings congruent with previous cross-sectional research. Contrary to previous research no indirect effect via 'primary outgroup threat' emerged. Our results provide additional empirical evidence for negative STE. They further indicate that negative- and positive STE might operate via similar mechanisms.

Keywords: intergroup contact, negative contact, secondary transfer effect, attitude generalization, multiculturalism, deprovincialization hypothesis

Since the initial formulation of Gordon Allport's contact hypothesis (Allport, 1954) there has been considerable empirical evidence supporting the claim that positive contact can reduce prejudice (see e.g. Pettigrew & Tropp, 2006). A meta-analysis across 713 samples by Pettigrew and Tropp (2006) showed a robust negative association between intergroup contact and prejudice (r= -.205 to -.214). Although these findings indicate support for the contact hypothesis Pettigrew and Tropp (2006) also highlighted a methodological issue: the "causal sequence problem" (p. 757). Due to the predominance of cross-sectional research designs, in many cases it remained unclear whether contact indeed reduced prejudice or whether prejudiced individuals (also) avoided intergroup contact. This research gap persists until today (Kotzur & Wagner, 2021), although the existing experimental and longitudinal studies hint at a bi-directional association (Dhont et al., 2011).

The Positivity Bias in Contact Literature

Another research gap has its origin in the long-lasting positivity bias of intergroup contact research. Barlow et al. (2012) had highlighted the necessity to jointly investigate positive and negative contact. Since then empirical evidence emerged that negative contact can foster prejudice (see, e.g., Thomson & Rafiqi, 2017). However, the causal sequence problem also applies to that research area. In many cases, the implied causal connections – showing that in fact contact affects prejudice and not vice versa – can only be assumed but not tested in cross-sectional research designs (Kotzur & Wagner, 2021). More longitudinal research is needed to further empirically corroborate the causal connections implied by positive and negative intergroup contact research.

The Secondary Transfer Effect

The secondary transfer effect (STE; see, e.g., Pettigrew, 2009) is an elaboration of the contact hypothesis. Theorizing on STE assumes that contact with one specific outgroup (the so-called primary outgroup) can also impact the attitude "towards groups [secondary outgroups] that were not directly involved in the contact" (Tausch et al., 2010, p. 4). STE research experienced the same paradigm shift from positive to negative contact as the general intergroup contact literature. It also faces the same causality problem (Vezzali et al., 2021).

A good overview of the current state of research on STE is offered by Vezzali et al. (2021). As already indicated, the two previously mentioned research gaps – the positivity bias and the causal sequence problem – apply also to research on STE: older studies focussed solely on positive contact and research on negative STE is thus scarce. Likewise, most studies are cross-sectional. To the best of our knowledge, there seems to be just one longitudinal study (Mähönen & Jasinskaja-Lahti, 2016), and four experimental studies (Harwood et al., 2011; Joyce & Harwoord, 2014; Andrews et al., 2018; Hane & Nordström, 2021) on negative STE.

Proposed Mechanisms Behind STE

Another open question concerning STE research in general, and research on negative STE specifically, is how exactly secondary transfer effects occur. Vezzali et al. (2021) describe proposed mechanisms – in methodological terms, mediators – of STE. They group them into three categories: mediators involving the outgroup, mediators involving the ingroup and mediators involving the self. Vezzali et al. (2021) also provide an overview of existing research, which indicates that STE from positive contact and STE from negative contact rely on the same mediational processes. We summarize existing research on negative STE and its mediators in Table 6.

Table 6

Previously Published Research on Negative STE.

Authors	Design	Type	Setting	Participants	Primary outgroup	Secondary outgroup	Med	Outcome	C
Brylka et al. 2016	Cross-sectional	d.	Finland	171 Estonian- & 180 Russian immigrants	The other participant group	Majority Finns	AG PCS	Attitude	Y
Lissitsa & Kushnirovich, 2018		d.o.	Israel	450 Israeli-Jewish adults	Israeli Palestinians	Non-Israeli Palestinians	AG	Attitude	/
Meleady & Forder, 2018		d.	UK	260 white British university students	Muslim immigrants	other immigrant groups	PCI	Contact intention	Y
Zingora & Graf, 2019		d.	Slovakia	232 Slovak adults	Roma people	Gay people	PT ST PA SA	Voting intention	Y
Jasinskaja-Lahti et al. 2020		d.	Finland	299 Finnish adults	Majority Finns	Other immigrant groups	AG	Attitude	Y
Lissitsa & Kushnirovich, 2020		v.	Israel	716 Israeli-Jewish adults	LGBT community	People with Asperger's syndrome	AG	Attitude	Y
Ünver et al. 2021[a]		d.	Turkey	300 adult Turks & 127 adult Kurds	The other participant group	Syrian refugees	AG	Attitude	Y
Henschel & Derksen, 2022		d.	Germany	1553 German citizens	Foreigners	(Syrian) refugees	AG, MC, IP	Attitude	Y
Mähönen & Jasinskaja-Lahti 2016	Longi-tudinal	d.	Finland	85 Ingrian-Finnish remigrants	Majority Finns	Other immigrants groups	PT	Attitude	/
Harwood et al. 2011	Experi-mental	i.	Unites States	158 US university students	Illegal immigrants	20 other outgroups	AG	Attitude	/
Joyce & Harwood, 2014		v.	Unites States	147 US university students	Illegal immigrants	8 other outgroups	AG	Attitude	
Andrews et al. 2018		v.	New Zealand	157 university students in New Zealand	Russians	Arabs, Americans, Chinese	/	Attitude	
Hane & Nordström, 2021[a]		d.o.	United States	474 US adults	The political outgroup (conservative / liberal)	Immigrants Muslims elderly people	/	Attitude	

Note. Adapted from Vezzali et al., 2021. The study by Jasinskaja-Lahti et al., 2020 is grouped as a cross-sectional study, since their experimental manipulation did not target intergroup contact but instead a moderator of STE. 'd.'= direct contact, 'd.o.'= direct online contact, 'v.'= vicarious contact, 'i.'= indirect contact. 'Med'= investigated mediators (AG= Attitude generalization, MC= Multiculturalism, IP= Ingroup pride, PCS= Public collective self-esteem, PCI= contact intentions towards primary outgroup, PT= primary outgroup threat, ST= Secondary outgroup threat; acronyms in grey mean that no sign. mediation was found) C = controlling for contact with the secondary outgroup ('Y' = Yes, '/' = No). [a]= added by the authors.

In line with Vezzali et al. (2021), we conclude from this overview, that mainly one mediator ('attitude generalization') has been studied so far. We identify two other mediators of interest that have been scarcely studied ('multiculturalism' and 'primary outgroup threat'). Since previous research was mostly cross-sectional, we further conclude a need to study these mediating processes longitudinally, in order to disentangle the causal sequence of effects

We describe each in the following. 'Attitude generalization' assumes that contact with the primary outgroup is firstly associated with a change in the primary outgroup attitude which then generalizes to the secondary outgroup due to perceived similarity between both groups (Pettigrew, 2009; Ebbeler, 2020).

'Multiculturalism' assumes that contact with the primary outgroup is interrelated with ratings of secondary outgroups, due to an altered valuation of diversity in general (Verkuyten et al., 2010; Lolliot et al., 2011; see also Lolliot et al., 2013; Ebbeler, 2020). Multiculturalism has been shown as a mediator for positive STE (see Lolliot et al., 2013 for an overview) and recently also for negative STE (Henschel & Derksen, 2022).

The idea that 'primary outgroup threat' mediates the association between (negative) contact and secondary outgroup attitude is rooted in the integrated threat theory (Zingora & Graf, 2019). This theory posits that contact with stigmatized outgroups may invoke feelings of symbolic threat (threatening personal self-esteem or ingroup values and beliefs) as well as realistic threat (threatening safety and well-being at individual- or group level; Stephan et al., 2009). Perceived justifications for these emotions may vary outgroup-specifically (Zingora & Graf, 2019) but the emotional outcome (feeling threatened) is the same and has been linked to outgroup prejudice across many contexts. Accordingly, Zingora and Graf (2019) as well as Mähönen and Jasinskaja-Lahti (2016) investigated if negative contact could affect primary outgroup threat which could then negatively affect the secondary outgroup attitude. However, results were inconclusive (see Table 6).

To clarify whether 'attitude generalization', 'multiculturalism' and 'perceived primary outgroup threat' are indeed processes behind negative STE, more research is needed. These mechanisms have not been investigated jointly, in a study design that can tackle the causal sequence problem. To achieve this, longitudinal or experimental study designs are needed (O'Loughlin et al., 2018). According to Table 6, there are only five such studies on negative STE. We shall describe them in the following.

Experimental and Longitudinal Investigations of Negative STE

Regarding the single existing longitudinal study as well as the four existing experimental studies, several methodological criticisms can be made. Firstly, the four experimental studies (Harwood et al., 2011; Joyce & Harwood, 2014; Andrews et al., 2018; Hane & Nordström, 2021) did not control for previous primary or secondary outgroup contact. Notably, the first three studies experimentally manipulated vicarious contact, either by exposing participants to video

material of intergroup contact or by letting them imagine such contact. Only the study by Hane and Nordström (2021) experimentally manipulated direct intergroup contact, albeit in a game-like online setting. Secondly, one might criticize that these studies involved undergraduate students, which raises the question of generalizability to the general population. Thirdly, it is mentionable that only two studies investigated mediating mechanisms: Joyce and Harwood (2014) investigated ingroup identification, while Hane and Nordström (2021) investigated attitude generalization. However, neither study experimentally manipulated the mediating variable. From a methodological standpoint, a study involving both kinds of manipulations could be regarded as a more robust proof for negative STE through these processes. Nonetheless the four above mentioned experimental studies can be seen as a valuable contribution to the literature on negative STE. Especially since no other experimental studies exist to our knowledge. Experimental studies including above mentioned manipulations and a design which allows the comparison of multiple mediating mechanisms would be optimal. However, such studies would be very difficult to conduct, given the highly complex study design. Accordingly, longitudinal research in a robust study design which allows to compare multiple mediating mechanisms could be the next best option.

Unfortunately, the longitudinal study by Mähönen and Jasinskaja-Lahti (2016) does not include all of these desired characteristics. Following a brief study description, we shall specify what could have been improved: a sample of 86 Ingrian-Finnish remigrants (a minority group), participated in a two-wave panel study, with a time-lag of two years. The primary outgroup were majority Finns and the secondary outgroup were other immigrant groups. As hypothesized positive contact with the primary outgroup indirectly affected secondary outgroup attitudes via perceived gains from primary outgroup contact. Contrary to expectations and cross-sectional

research (Zingora & Graf, 2019), negative contact was not indirectly associated with secondary outgroup attitudes, via perceived threat from primary outgroup contact. This longitudinal study is a valuable contribution to STE literature. Nevertheless, it leaves several questions unanswered. Firstly, secondary outgroup contact was not controlled for. Inclusion of this important control variable (see e.g. Vezzali et al., 2021, p.22) would have increased the robustness of the study design. Secondly, the study did not span three time points, which would strictly be necessary to longitudinally investigate processes behind STE (see Ünver et al., 2022). Thirdly, the conceptual distinction of the involved constructs remains somewhat unclear. Analytically, the authors treat 'perceived gains' and 'perceived threats' as distinct constructs (pp. 14-15). In previous research they had introduced the concept 'intergroup gains' by "building on recent studies showing the positive effect of valuing diversity on intergroup relations" (Mähönen et al., 2011, p. 20). This overlaps with Lolliot et al.'s (2013), description of the 'multiculturalism' mechanism. Following this logic, the results of Mähönen and Jasinskaja-Lahti (2016) could be interpreted as empirical support for mediational processes similar to 'multiculturalism.' However, the same results could also be interpreted as empirical support for STE through 'preceived primary outgroup threat' if one follows the conceptualization of Brylka et al. (2015) who treat 'perceived gains' and 'perceived threats' as opposite ends of a bi-polar scale (p. 10).

In the current study we aim to avoid the methodological issues mentioned above. We do this by investigating negative STE in a robust three-wave longitudinal study design that allows to compare the mediational mechanism 'attitude generalization', 'multiculturalism' and 'perceived primary outgroup threat', while controlling for secondary outgroup contact.

The Current Research Context

Our study takes place in Germany. We investigate negative STE longitudinally in an intergroup context that has become increasingly present and continues to be practically relevant: forced migration. In our study, the primary outgroup are foreigners living in Germany, whereas the secondary outgroup are refugees.

In the following sections we shall motivate this choice. To begin with, we are aware that individuals might perceive an overlap between both outgroups, and could categorize refugees under the overarching label foreigners (Henschel & Derksen, 2022). However, there are theoretical as well as practical reasons to investigate this specific intergroup scenario. A practical reason is data availability. Panel data which permits to study negative STE is scarce, especially if one is interested in the underlying processes and follows the suggestions from literature that at least three survey waves (Ünver et al., 2022) and a control measure of secondary outgroup contact should be included (Vezzali et al., 2021). In the method section we shall elaborate that such panel data exists under our choice of primary and secondary outgroup.

More importantly, it is of theoretical and societal relevance to study negative STE in this specific intergroup context. Both regular migration and forced migration have increased due to ongoing globalization (Cowling et al., 2019) as well as diverse crises (Idemudia & Boehnke, 2020). Whatever might be the reason to flee – be it life-threatening danger from poverty or from armed conflicts – there have been more and more instances where large groups of men, women and children took on long journeys under arduous conditions to seek refuge in Europe. The most well-known example is perhaps the so-called “refugee crisis” (Federal Office for Migration and Refugees, BAMF, 2021), where more than 1 million people have fled the war in the Syrian Arab Republic (Cowling et al., 2019). In many European societies, citizens viewed this relatively

sudden emergence of a 'new' immigrant outgroup skeptically or were in outright opposition to it (see e.g. Renner et al., 2017), even before they had had any contact with members of this group.

One of these societies is Germany, which (between 2014 and 2017 alone) admitted approx. 1.6 million forced migrants (Federal Office for Migration and Refugees, BAMF, 2022). Syrians constitute the by far largest group of recorded first time asylum applicants (Federal Office for Migration and Refugees, BAMF, 2017). The number of first-time asylum applications peaked in 2016, with 722,370 cases, 38% of which involved applicants from Syria. This trend continued in the consecutive year, with nearly 25% of the 198,317 recorded first-time asylum applicants originating from Syria. The reactions to this relatively sudden large-scale immigration were diverse: a sizeable number of Germans welcomed this development (Larsen et al., 2018) but there were also many critical reactions (Kösemen & Wieland, 2022) and even organized protest groups, such as PEGIDA (Beckmann & Jahn, 2015). Nowadays, these refugees make up a substantially sized minority group in German society.

Previous research indicates that negative STE might have happened in the German context during the so-called refugee crisis (Henschel & Derksen, 2022). However, more research is needed: to our knowledge only two studies have investigated negative STE in the context of forced migration. One took place in Germany (Henschel & Derksen, 2022) and one in Turkey (Ünver et al., 2021). Both are cross-sectional and thus cannot address the causal sequence problem. Keeping these issues in mind, the results of Ünver et al. (2021) indicate a negative STE via attitude generalization. This emerged in a sample of Turkish participants ($N = 300$) and a sample of Kurdish participants ($N = 127$). In both cases the other ethnic group was the primary outgroup whereas Syrian refugees were the secondary outgroup. Similarly, results by Henschel and Derksen (2022) indicate a negative STE via attitude generalization and via multiculturalism.

Their sample consisted of German citizens (N = 1553). The primary outgroup were foreigners living in Germany. The secondary outgroup were refugees.

Research Gaps and Research Questions

In summary, we have identified following research gaps, in the literature on (negative) STE: (1) a predominance of cross-sectional studies (the causal sequence problem), (2) a positivity bias, (3) a focus on attitude generalization as an explanatory mechanism, and (4) a lack of studies in the context of forced migration. The first three were likewise identified in a recent review article (see Ünver et al., 2022, p. 1432).

Against the background of the described research field, the aim of the current research was thus two-fold.

Firstly, we aim to investigate negative STE in a robust longitudinal study design, to show that the hypothesized processes can be observed in longitudinal survey data. Specifically, we pose the following research question: *Can we find empirical evidence for negative secondary transfer effects from foreigners to refugees in a longitudinal study design?*

Secondly, we aim to disentangle proposed mechanisms behind negative STE, specifically, 'attitude generalization', 'multiculturalism', and 'primary outgroup threat.' To this end we pose the following research question: *Do negative secondary transfer effects from foreigners to refugees occur via 'multiculturalism' and 'primary outgroup threat' on top of 'attitude generalization?*

In answering these research questions, our study makes several contributions, to the literature on negative STE. Firstly, we conduct a longitudinal study, which allows to address the causal sequence problem – the first identified research gap. Since our focus is on negative STE, we likewise tackle the positivity bias in STE literature – the second identified research gap.

Furthermore, we also address the third identified research gap, by employing a study design which allows us to investigate multiple proposed mediators of STE, beyond attitude generalization, specifically 'multiculturalism', and 'primary outgroup threat.' Lastly, we tackle the fourth identified research gap by studying negative STE in the context of forced migration. Concludingly, we would like to mention that our study design incorporates an important control variable: secondary outgroup contact. To our knowledge we provide the first study that incorporates all the aspects mentioned above.

Hypotheses

In investigating our research questions, we hypothesize:

H1: There is longitudinal evidence for negative STE in the sense that negative contact with the primary outgroup (foreigners) has a negative impact on the secondary outgroup (refugees) attitude at the subsequent time point (while controlling for positive contact with foreigners and contact with refugees).

H2: This negative STE is mediated by the primary outgroup attitude (i.e., attitude generalization), acceptance of diversity (i.e., multiculturalism) and perceived primary outgroup threat.

We test H1 and H2 within the cross-lagged-panel mediation model shown in Figure 1. We accompany these analyses with a test of their statistical power, in the form of ad-hoc power analyses, utilizing a web application by Wang and Rhemtulla (2021).

Method

Sample and Design

To answer the research questions, we made use of data from the German GESIS panel (GESIS, 2021; see also Bosnjak et al., 2017). The GESIS panel contains a rotating module on intergroup contact and intergroup attitudes which included measures relevant to the study of negative STE.

In total, $N = 2012$ respondents made up the so-called the Refreshment Cohort C of the GESIS panel (Weyandt, 2022). Our analyses focus on that cohort, since only respondents from this subsample answered a question concerning contact with refugees, our secondary outgroup – a necessary control variable when studying secondary transfer effects. Due to a split-survey design, only a subsample of $N = 408$ respondents was presented with items concerning foreigners, our primary outgroup. Since that group should be regarded as an outgroup by respondents, we only retained those respondents who held a German citizenship (see Weyandt, 2022, p. 3011) in our sample. This reduced the sample size to $N = 390$.

Our analyses concern data collected at three time-points, each 6 months apart. Regarding Time Point 1, data were collected between October and December 2016. Data collection for the second time point took place between April and June 2017. Data concerning Time Point 3 was collected between October and December 2017. However not all panelists participated in all survey waves of interest. Literature favors the imputation of such missings rather than their exclusion, unless they are 'missing not completely at random' (Newman, 2014). Little's MCAR test initially indicated this ($\chi^2 = 1202.040$, df = 1110, p = .028). In such cases literature advices to utilize auxiliary variables which might add explanatory value to the patterns of missing data (Newman, 2014). As auxiliary variables we used panelists overall assessment of the survey experience and survey length (Weyandt, 2022, pp. 4383, 4386). Utilizing this additional

information, Little's test failed to reject the null hypothesis that the data were missing at random ($\chi^2 = 1460.558$, df = 1379, p = .062).

Thus, the missing data points were imputed via the full information maximum likelihood (FIML) procedure in the software Mplus. Descriptive statistics of the emergent sample and the correlations between constructs can be found in Table 7.

Table 7

Descriptive Statistics and Correlations of Constructs.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. N_1	1.64	0.70	—																		
2. N_2	1.71	0.69	.67**	—																	
3. N_3	1.74	0.71	.64**	.60**	—																
4. P_1	2.50	0.94	.28**	.22**	.18**	—															
5. P_2	2.59	0.99	.14**	.22**	.12*	.71**	—														
6. P_3	2.58	0.93	.17*	.15*	.19**	.73**	.73**	—													
7. F_1	3.21	0.61	−.20**	−.21**	−.24**	.29**	.32**	.27**	—												
8. F_2	3.17	0.63	−.14**	−.19**	−.16**	.34**	.39**	.33**	.68**	—											
9. F_3	3.13	0.62	−.11	−.20**	−.21**	.38**	.37**	.35**	.62**	.68**	—										
10. A_1	2.99	0.67	−.17**	−.30**	−.26**	.39**	.34**	.28**	.56**	.47**	.58**	—									
11. A_2	2.94	0.69	−.16**	−.25**	−.22**	.39**	.42**	.35**	.50**	.54**	.58**	.77**	—								
12. A_3	2.92	0.64	−.17**	−.33**	−.27**	.33**	.36**	.30**	.50**	.47**	.58**	.78**	.76**	—							
13. T_1	1.90	0.82	.22**	.32**	.24**	−.33**	−.35**	−.24**	−.47**	−.45**	−.50**	−.63**	−.62**	−.57**	—						
14. T_2	2.03	0.83	.15**	.33**	.21**	−.40**	−.41**	−.31**	−.48**	−.51**	−.54**	−.66**	−.68**	−.64**	.76**	—					
15. T_3	2.00	0.86	.20**	.30**	.29**	−.38**	−.39**	−.25**	−.49**	−.50**	−.54**	−.68**	−.67**	−.66**	.77**	.81**	—				
16. R_1	2.98	0.76	−.24**	−.29**	−.27**	.27**	.30**	.23**	.69**	.56**	.56**	.67**	.64**	.61**	−.67**	−.62**	−.61**	—			
17. R_2	2.89	0.71	−.26**	−.33**	−.24**	.23**	.32**	.25**	.55**	.65**	.54**	.57**	.66**	.57**	−.60**	−.63**	−.61**	.73**	—		
18. R_3	2.83	0.73	−.22**	−.30**	−.27**	.26**	.30**	.24**	.53**	.56**	.68**	.61**	.66**	.65**	−.60**	−.63**	−.63**	.73**	.74**	—	
19. C_1[a]	0.47	0.50	.16**	.16**	.23**	.33**	.32**	.32**	.16**	.22**	.16*	.18*	.19*	.16**	−.17*	−.21**	−.16*	.15*	.19*	.12*	—

Note. N = 390. N = Negative contact with foreigners, P = Positive contact with foreigners, C = Contact with refugees, R = Attitude towards refugees, F = Attitude towards foreigners, A = Acceptance of diversity, T = perceived threat from foreigners. The numbers behind above-mentioned acronyms denote the survey wave (e.g. N_2 refers to negative contact with foreigners at survey wave 2). [a] 1 = Yes and 0 = No. * p < .05, ** p< .01.

We want to study negative STE longitudinally while comparing different mediators. This opens up the question of statistical power. Discussions of this issue are largely absent in (negative) STE literature. Multiple reasons could be behind this: firstly, many studies are cross-sectional and few compare multiple mediators, resulting in less complex model designs. Secondly, tools for power analyses in the SEM framework just recently became accessible outside of proprietary software. Wang and Rhemtulla (2021), provide a step-by-step guide using Monte Carlo simulations. Applying their framework and application pwrSEM we estimate the statistical power behind those regression paths in our models, which represent direct and indirect STE. In Appendix C the process and limitations are discussed more in-depth.

Instrument

The following section discusses the measurement of each construct. Each construct was measured three times (at Time Point 1 in the GESIS survey wave termed *de*, at Time Point 2 in wave *eb* and at Time Point 3 in wave *ee*) with time lags of 6 months in-between (Weyandt, 2022).

Positive Contact with Foreigners

The frequency of positive contact experiences with the primary outgroup foreigners was measured with two items (originally coined by Wagner et al., 2002): "When you think about all your contacts with foreigners who live in Germany: How often have you had positive experiences?" (Weyandt, 2022, pp. 4210, 4845, 5529) and "How frequently do you have positive or good contact with foreigners at your place of employment or apprenticeship?" (Weyandt, 2022, pp. 4212, 4847, 5531). The response scale of the items ranged from 1= *never* to 4= *frequently*. A mean score of both items was computed as a measure of positive contact with

foreigners, given that inter-item correlations were satisfactory (r = .343*** at T1; r = .483*** at T2; r = .387*** at T3).

Negative Contact with Foreigners

The frequency of negative contact experiences with the primary outgroup foreigners was measured with two items (originally coined by Wagner et al., 2002): "When you think about all your contacts with foreigners who live in Germany: How often have you had negative experiences?" (Weyandt, 2022, pp. 4211, 4846, 5530) and "How frequently do you have negative or bad contact with foreigners at your place of employment or apprenticeship?" (Weyandt, 2022, pp. 4213, 4848, 5531). Answer categories were coded in the same fashion as for the measurement of positive contact with foreigners. Again inter-item correlations were satisfactory (r = .403*** at T1; r = .332*** at T2; r = .382*** at T3) and thus a mean score was calculated as a measure of negative contact with foreigners.

Contact with Refugees

Whether or not a participant had experienced any contact with the secondary outgroup refugees was assessed with a single item: "In recent months, many refugees have come to Germany. Have you ever had direct personal contact with refugees?" (Weyandt, 2022, pp. 3091). Answer categories were recoded to 0 = *no* and 1 = *yes*. This measure was part of the *d12 welcome survey*, an interview administered between April and October 2016 after participants had indicated their desire to take part in the GESIS panel. Accordingly, there is a slight temporal delay in the measurement of this construct and the other time point 1 measures (on average 4 months).

Attitude Towards Foreigners

Respondents' attitude towards the primary outgroup foreigners was assessed via two items (originally coined by Wagner et al., 2008 as well as Haddock et al., 1993), with answer categories ranging from 1 = *very negative* to 5 = *very positive*: "How would you assess foreigners in Germany overall?" (Weyandt, 2022, pp. 4244, 4879, 5563) and "How would you describe your feeling towards foreigners in Germany overall?" (Weyandt, 2022, pp. 4248, 4883, 5567). Given satisfactory inter-item correlations (r = .701*** at T1; r = .779*** at T2; r = .739*** at T3), a mean score of both items was computed to assess primary outgroup attitudes.

Attitudes Towards Refugees

Respondents' attitude towards the secondary outgroup refugees was assessed via two items (same original item source as in the previous paragraph), from which a mean score was created: "How would you assess refugees in Germany overall?" (Weyandt, 2022, pp. 4245, 4880, 5564) and "How would you describe your feeling towards refugees in Germany overall?" (Weyandt, 2022, pp. 4249, 4884, 5568). Answer categories ranged from 1 = *very negative* to 5 = *very positive*. Satisfactory inter-item correlations (r = .804*** at T1; r = .823*** at T2; r = .818*** at T3), warranted to compute a mean score of both items as a measure of secondary outgroup attitude.

Acceptance of Diversity

Acceptance of diversity was measured via four items. The first two items were originally coined by Asbrock et al. (2011) and the latter two by Pittinsky et al. (2011): "I value cultural diversity in Germany because it is useful for the country.", "A society with a high degree of cultural diversity is more capable of tackling new problems.", "In general, I have positive attitudes about people from different cultural backgrounds." and "I like people from different cultural backgrounds." (Weyandt, 2022, pp. 4256-4259, 4891-4894, 5575-5578). Item answer

categories ranged from 1 = *fully disagree* to 4 = *I totally agree*. Within each survey wave, the four items formed a reliable scale (α = .90 at T1; α = .89 at T2; α = .88 at T3). Per survey wave, a mean score of the four items was created to assess acceptance of diversity. In order to conserve statistical power, we refrained from the alternative strategy of estimating latent constructs.

Primary Outgroup Threat

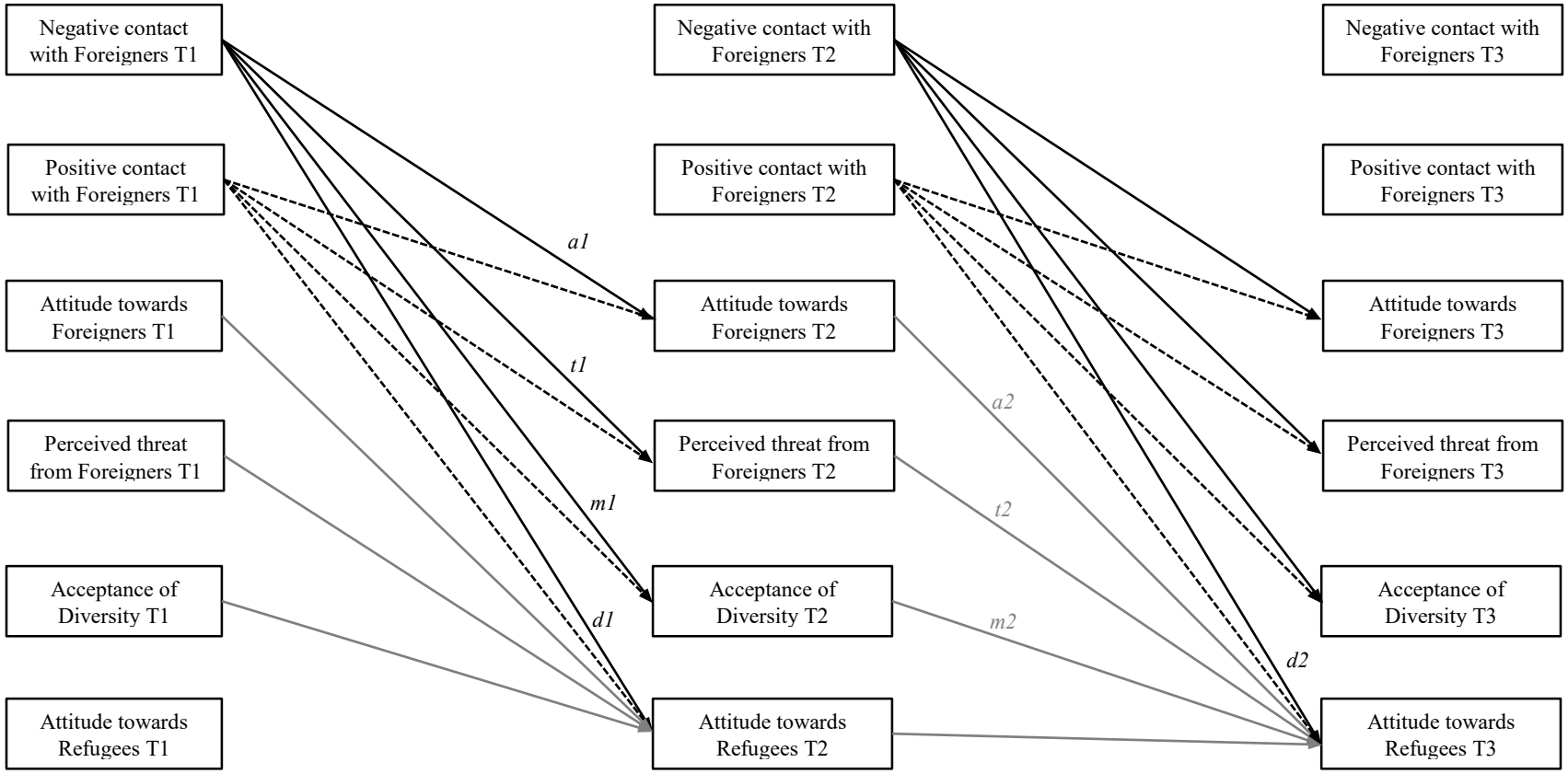
Primary outgroup threat was measured via two items: "Foreigners who are living here threaten our freedoms and rights" and "Foreigners who are living here threaten our prosperity" (Weyandt, 2022, pp. 4214-4215, 4849-4850, 5533-5534). Item response categories ranged from 1 = *fully disagree* to 4 = *I totally agree*. A mean score of these two items was created (inter-item correlations: r = .767*** at T1; r = .765*** at T2; r = .815*** at T3).

Analysis of Data

To test our hypotheses, we analyzed the path model shown in Figure 3. Analyses were carried out with the software MPlus v. 8.6 (Muthén & Muthén, 1998-2017). To test for the significance of effects (ML estimator), we calculated bias corrected bootstrap confidence intervals (10000 iterations). To test H1 we investigated whether the regression path labelled *d1* or alternatively the regression path labelled *d2* was statistically significant. To test H2 we investigated the statistical significance of the indirect effects stemming from the multiplication of regression paths *a1*a2* ('attitude generalization'), of *m1*m2* ('multiculturalism') and of *t1*t2* ('perceived primary outgroup threat'). All reported coefficients are unstandardized.

Figure 3

The proposed Path Model to Assess Negative STE.



Note. Variables were allowed to correlate within time points. Dotted lines mark paths involving positive contact; Black lines paths involving negative contact; Grey lines paths from mediators to secondary outgroup attitude. Autoregressive paths not involved in mediation are estimated but not depicted as is the control variable 'Contact with Refugees T1'.

Results

The path model shown in Figure 3 was tested, to answer H1 and H2. Specifically, it informed about the extent by which negative contact experiences with the primary outgroup (foreigners living in Germany) impacted respondents' subsequent attitude towards the secondary outgroup (refugees) via (a) a more negative attitude towards the primary outgroup or (b) decreased acceptance of diversity (i.e., multiculturalism) or (c) an increase in perceived primary outgroup threat. Results are depicted in Figure 4 and Table 8, whereas the last column of Table 8 contains results from the power analysis.

Hypothesis 1

As mentioned earlier, we evaluated the path coefficients *d1* and *d2* (see Fig. 3), to test hypothesis 1. We shall reject it, in case both coefficients are not statistically significant. The regression path *d1*, from negative contact with foreigners at T1 to the attitude towards refugees at T2 proofed statistically significant ($b = –.138$, $p = .010$, 95% CI [–.242, –.032]). The regression path *d2* did not ($b = –.066$, $p = .244$, 95% CI [–.178, .043]). To summarize, there was empirical evidence in favor of H1.

Hypothesis 2

As mentioned before, we evaluated the statistical significance of three indirect effects in order to test hypothesis 2. Regarding the process 'attitude generalization' this involved the indirect effect stemming from the multiplication of regression paths *a1*a2*. The path *a1* emerged as statistically significant ($b = –.080$, $p = .041$, 95% CI [–.156, –.004]). The same applies to the path *a2* ($b = .130$, $p = .034$, 95% CI [.009, .251]). The 95% Confidence Interval of the resulting indirect effect ($b = –.010$, $p = .170$, 95% CI [–.032, .000]) barely contains zero (in light of this

see the following section 'further results'). Regarding the process 'multiculturalism' we evaluated the indirect effect stemming from the multiplication of regression paths *m1*m2*. Again, we obtained a significant result for the paths *m1* (*b* = –.112, *p* =.009, 95% CI [–.196, –.026]), *m2* (*b* = .170, *p* =.002, 95% CI [.065, .285]) and the resulting indirect effect (*b* = –.019, *p* =.045, 95% CI [–.044, –.005]). Lastly, regarding the process 'primary outgroup threat', we looked at the indirect effect stemming from the multiplication of regression paths *t1*t2*. While the path *t1* emerged as statistically significant (*b* = .139, *p* =.004, 95% CI [.047, .234]), the paths *t2* (*b* = –.078, *p* =.105, 95% CI [–.171, .018]) and the resulting indirect effect (*b* = –.011, *p* =.187, 95% CI [–.033, .000]) did not. Accordingly, hypothesis 2 could not be empirically supported.

Further Results

The analysis revealed another indirect effect, one that we had not originally hypothesized. This was an 'autoregressive' indirect effect via attitude towards refugees at T2 (*b* = –.064, *p* =.015, 95% CI [–.118, –.016]).

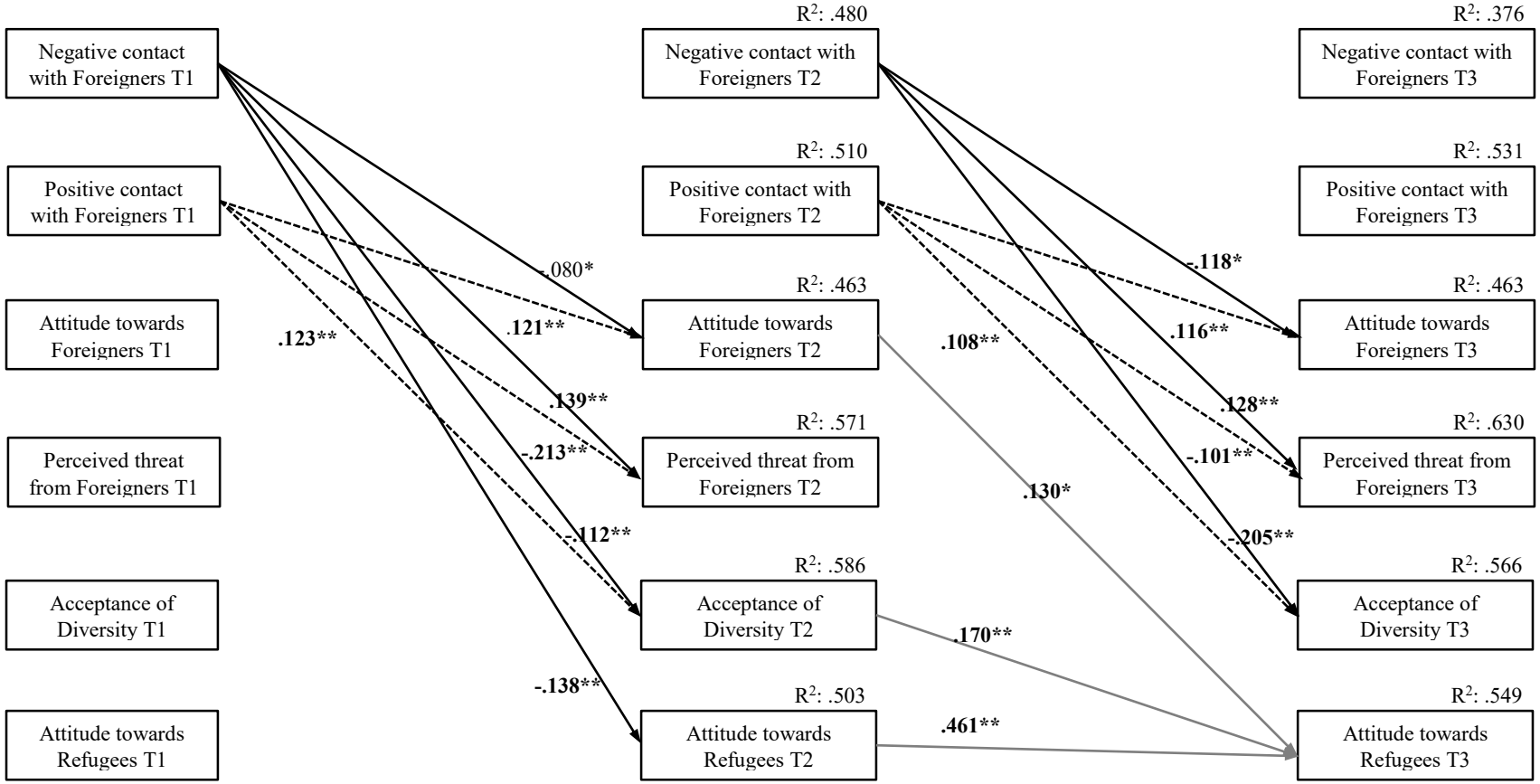
Generally, it should be noted that the model fit was insufficient (χ^2= 394.569 (*df* = 78, *p* < .001), *RMSEA* = 0.102, *TLI*= 0.806, *CFI* = 0.899, *SRMR* = 0.099). However, Figure 4 shows that the R^2 values of the specific regression equations were quite high.

Another topic of concern was statistical power. A post-hoc power analysis showed that the direct paths which emerged as significant were sufficiently (power >= .80) powered (see Table 8). An exception is the path from negative contact with foreigners at T1 to attitude towards foreigners at T2 (power = .66), and accordingly the indirect negative STE path via attitude generalization (power = .34). This lack of statistical power should be kept in mind when interpreting the aforementioned indirect effect concerning attitude generalization from negative

contact. This might explain why the corresponding 95% CI barely contained 0, even though those of the constituting paths *a1* and *a2* did not. Keeping this caveat in mind, empirical evidence in favor of attitude generalization might still be concluded.

Figure 4

The Empirically Tested Path Model from Figure 3.



Note. N = 390. Dotted lines mark regression paths involving positive contact, black lines those involving negative contact, grey lines paths from mediators to secondary outgroup attitude. For brevity, only significant STE-related paths are shown (unstandardized coefficients and bolded if power >=.80). Residual correlations are not shown. Table 8 reports all estimated paths. * p<.05, ** p<.01.

Table 8

Empirical Results of the Path Model depicted in Figure 3.

Effect	Estimate	*SE*	95% CI[a]		*p*	*β*	*Power*
			LL	*UL*			
Autoregressive effects							
Neg. Contact F. T1 → Neg. Contact F. T2	**.694**	.041	.613	.775	.001	.692	1
Neg. Contact F. T2 → Neg. Contact F. T3	**.628**	.054	.519	.733	.001	.613	1
Pos. Contact F. T1 → Pos. Contact F. T2	**.743**	.041	.659	.821	.001	.714	1
Pos. Contact F. T2 → Pos. Contact F. T3	**.677**	.037	.604	.748	.001	.729	1
Attitude F. T1 → Attitude F. T2	**.560**	.058	.441	.670	.001	.560	1
Attitude F. T2 → Attitude F. T3	**.550**	.057	.436	.660	.001	.565	1
Acceptance of Diversity T1 → Acceptance of Diversity T2	**.642**	.051	.540	.740	.001	.651	1
Acceptance of Diversity T2 → Acceptance of Diversity T3	**.537**	.051	.435	.636	.001	.595	1
Threat from F. T1 → Threat from F. T2	**.570**	.051	.467	.667	.001	.591	1
Threat from F. T2 → Threat from F. T3	**.721**	.053	.617	.826	.001	.709	1
Attitude R. T1 → Attitude R. T2	**.392**	.067	.261	.524	.001	.444	1
Attitude R. T2 → Attitude R. T3	**.461**	.061	.338	.581	.001	.457	1
Cross-lagged effects							
Neg. Contact F. T1 → Attitude F. T2	**−.080**	.039	−.156	−.004	.041	−.091	.66
Pos. Contact F. T1 → Attitude F. T2	**.121**	.035	.056	.192	.001	.187	0.99
Contact R. T1 → Attitude F. T2	.099	.056	−.011	.209	.080	.080	.61
Neg. Contact F. T1 → Acceptance of Diversity T2	**−.112**	.043	−.196	−.026	.009	−.118	.97
Pos. Contact F. T1 → Acceptance of Diversity T2	**.123**	.034	.055	.187	.001	.175	1
Contact R. T1 → Acceptance of Diversity T2	.034	.056	−.077	.144	.545	.026	.19
Neg. Contact F. T1 → Threat from F. T2	**.139**	.048	.047	.234	.004	.122	.94
Pos. Contact F. T1 → Threat from F. T2	**−.213**	.041	−.297	−.134	.001	−.254	1
Contact R. T1 → Threat from F. T2	−.092	.060	−.208	.028	.126	-.058	.73
Contact R. T1 → Attitude R. T2	**.123**	.062	.003	.246	.048	.091	.80
Attitude F. T1 → Attitude R. T2	.069	.070	−.068	.207	.324	.063	.62
Accept. Diversity T1 → Attitude R. T2	.062	.058	−.049	.177	.282	.063	.71
Threat from F. T1 → Attitude R. T2	−.092	.050	−.187	.012	.067	−.114	1
Neg. Contact F. T2 → Attitude F. T3	**−.118**	.040	−.199	−.041	.003	−.138	.91
Pos. Contact F. T2 → Attitude F. T3	**.116**	.035	.045	.183	.001	.191	1
Contact R. T1 → Attitude F. T3	.012	.058	−.103	.126	.836	.010	.05
Neg. Contact F. T2 → Acceptance of Diversity T3	**−.205**	.043	−.285	−.117	.001	−.237	1
Pos. Contact F. T2 → Acceptance of Diversity T3	**.108**	.032	.045	.169	.001	.177	1
Contact R. T1 → Acceptance of Diversity T3	.071	.055	−.037	.178	.196	.059	.44
Neg. Contact F. T2 → Threat from F. T3	**.128**	.058	.011	.239	.028	.110	.84
Pos. Contact F. T2 → Threat from F. T3	**−.101**	.044	−.186	−.014	.021	−.123	.91
Contact R. T1 → Threat from F. T3	−.014	.062	−.136	.106	.821	−.009	.07
Contact R. T1 → Attitude R. T3	−.044	.060	−.162	.074	.466	−.032	.15
Attitude F. T2 → Attitude R. T3	**.130**	.061	.009	.251	.034	.117	.86
Accept. Diversity T2 → Attitude R. T3	**.170**	.056	.065	.285	.002	.168	1
Threat from F. T2 → Attitude R. T3	−.078	.048	−.171	.018	.105	−.092	.96
Direct Negative STE							
Neg. Contact F. T1 → Attitude R. T2	**−.138**	.054	−.242	−.032	.010	−.144	.97
Neg. Contact F. T2 → Attitude R. T3	−.066	.056	−.178	.043	.244	−.068	.42
Indirect Negative STE							
Attitude generalization	**−.010**	.008	−.032	.000	.170	−.011	.34
Multiculturalism	**−.019**	.010	−.044	−.005	.045	−.020	.96
Perceived Primary Outgroup Threat	−.011	.008	−.033	.000	.187	−.011	.82
Neg. Contact F. T1 → Attitude R. T2 → Attitude R. T3	**−.064**	.026	−.118	−.016	.015	−.066	.97
Direct Positive STE							
Pos. Contact F. T1 → Attitude R. T2	.044	.036	−.028	.114	.230	.062	.32
Pos. Contact F. T2 → Attitude R. T3	.025	.040	−.051	.102	.531	.036	.16
Indirect Positive STE							
Attitude generalization	**.016**	.009	.003	.038	.075	.022	.79
Multiculturalism	**.021**	.010	.007	.045	.027	.029	.99
Perceived Primary Outgroup Threat	.017	.011	−.002	.040	.120	.023	.95
Pos. Contact F. T1 → Attitude R. T2 → Attitude R. T3	.020	.017	−.013	.053	.230	.028	.32

Note. $N = 390$. Neg. = Negative, Pos. = Positive, F. = Foreigners, R. = Refugees, Accept. = Acceptance, STE = Secondary Transfer Effect. Threat refers to subjectively perceived threat. [a] 95% Confidence Intervals from bias corrected bootstrapping (10000 iterations). Significant coefficients are bolded.

Discussion

With this study, we aimed to investigate negative STE in a robust longitudinal study design, to determine whether the hypothesized processes can indeed be observed longitudinally (controlling for alternative explanations). To answer our first research question: we could find empirical evidence for a negative secondary transfer effect from foreigners to refugees. Such a direct effect occurred in the first time-lag but not in the second time-lag. We can also answer our second research question, relating to the processes behind negative STE: negative STE occurred via 'attitude generalization', and also via 'multiculturalism' but not via 'perceived primary outgroup threat.'

The current study contributes to the literature by addressing several research gaps. Firstly, it adds to the scarce literature on negative STE whereby it is the first longitudinal study incorporating contact with the secondary outgroup as a control variable. With this we tackle our Research Gaps 1 (the causal sequence problem) and 2 (the positivity bias in STE literature). Secondly, it is one of few studies that investigate negative STEs through primary outgroup threat and is the first study to disentangle the mechanisms 'attitude generalization', 'multiculturalism' and 'primary outgroup threat', finding empirical support for the first two but not the latter. With this we tackle our Research Gap 3 (a focus on attitude generalization in STE literature). Thirdly – and relating to Research Gap 4 – we extended the short list of STE research concerning forced migration.

The first and foremost contribution of our results is that negative STE could be observed in a longitudinal study design. In negative STE literature, this was the so far second attempt to tackle the causal sequence problem in a longitudinal study design. Interestingly, our findings conflict with those from this other longitudinal study (Mähönen & Jasinskaja-Lahti, 2016). We

can only speculate why. One the one hand, this could be attributed to methodological differences (e.g., operationalizations, analytical model, sample size). Alternatively, it could also be attributed to the different intergroup contexts that were studied. Notably, the study by Mähönen & Jasinskaja-Lahti (2016) involved participants from a minority group, while the current study included participants from the national majority group.

Whatever might be the case, our finding of a direct negative STE does stand in congruence with many previous cross-sectional studies – whether those took place in the same intergroup context (Henschel & Derksen, 2022) or in other intergroup contexts (see Table 6). In addition, our longitudinal study design allows us to defend our results against the concerns summarized in the causal sequence problem. Ultimately more research on negative STE in robust longitudinal study designs is warranted to test the generalizability of this finding and the underlying theory to other intergroup contexts.

Another important contribution of this research is to investigate proposed theories behind the mechanisms of negative STE in a robust longitudinal study design and see if the theorized relations hold against the causal sequence problem. This proved to be the case for the mechanisms 'attitude generalization' and 'multiculturalism', but not for 'primary outgroup threat". We shall discuss our findings in this order.

As hypothesized, negative STE occurred via 'attitude generalization.' This resonates with previous research within the context of forced migration (e.g. Ünver et al., 2021; Henschel & Derksen, 2022) and also previous research situated in other intergroup contexts (see Table 6). Regarding positive STE, 'attitude generalization' has been established as the most prominent mediator of STE in review papers (see e.g. Sparkman et al., 2020). The growing list of studies investigating negative STE so far indicates the same (see e.g. Vezzali et al., 2021) – a finding

congruent with the idea that both types of STE occur via the same mechanisms. Our study lends further empirical support to these statements and for the first time defends this idea against the causal sequence problem.

Our finding that negative STE occurred via 'multiculturalism' is also in line with previous literature. Although pre-existing studies concerning negative STE are scarce, our results are congruent with what is known so far (Henschel & Derksen, 2022). They also align with the larger body of literature that investigated the 'multiculturalism' pathway for positive STE (see e.g. Verkuyten et al., 2010; Lolliot et al., 2011, 2013). In line with this literature – though outside our main research focus - we also see a positive STE via 'multiculturalism.' In summary we thus show that the idea of an STE via 'multiculturalism' seems to hold against the causal sequence problem. Future research on negative STE should thus include 'multiculturalism' into the scope of investigated mechanisms. More research is needed, to assess whether our finding can be replicated in different intergroup contexts.

There is a theoretical explanation as to why no negative STE via 'primary outgroup threat' emerged. We first discuss the theoretical details and then we apply it to the context at hand. The hypothesized effect via 'primary outgroup threat' is grounded in integrated threat theory (Zingora & Graf, 2019), which posits that the perceived symbolic and realistic threat elicited by an outgroup depends on the outgroup in question (Stephan et al., 2009). Thus, in some intergroup scenarios, a primary outgroup may elicit similar threats as a secondary outgroup, thus allowing a generalization from primary outgroup threat to secondary outgroup attitude. However, in other scenarios both outgroups could elicit different levels of threats, or certain threats could be perceived as specific to only one outgroup (Zingora & Graf, 2019). This could be the case in the research at hand, as the following paragraph highlights.

In order to apply this theoretical explanation to the research at hand, one must take a step back and look at the specific intergroup context in which it is positioned. Given the timing of the panel surveys, the secondary outgroup 'refugees' clearly refers to those refugees fleeing to Germany due to the war in the Syrian Arab Republic. Their arrival was the prominent topic in public debate at that time. It was heavily discussed by politicians and the media. One recurring motif in this debate was the idea that the newcomers would pose a threat to German society and culture, due to their different cultural and religious views and practices. Another recurring motif was the belief that they could threaten physical safety, in terms of terrorist and/or misogynous attacks. This was not only asserted verbally but was also reflected in organized protests by groups with the self-proclaimed aim of 'protecting' society – and the 'occident' at large – against such threats (Dernbach et al., 2014; Beckmann & Jahn, 2015). Contrastingly, threats elicited by other migrant outgroups were not an equally salient topic, which leads us to assume that both outgroups elicited different absolute levels of threat. In line with this idea, German survey respondents seem to draw a sharp distinction between refugees and other migrant groups (Kösemen & Wieland, 2022, p. 11), reporting a much lower acceptance towards refugees. On top of this, there is reason to believe that the perceived threats elicited by refugees are different in nature to those associated with foreigners. Research of Jedinger and Eisentraut (2020) resonates with this idea, showing that the dimension 'criminal threat' seems to play a role in terms of perceived threats from refugees but not from foreigners. We conclude that in the intergroup scenario at hand, our primary outgroup may have elicited different threats than our secondary outgroup, thus hindering a generalization from primary outgroup threat to secondary outgroup attitude (Zingora & Graf, 2019) – or in methodological terms, hindering a mediating effect via 'perceived primary outgroup threat.'

The idea that negative secondary transfer effects could occur via 'primary outgroup threat' should be examined in additional intergroup contexts. Especially in contexts where primary- and secondary outgroups should likely elicit similar symbolic and realistic threats. This could help to discern whether the hypothesized path does not apply as theorized, or whether it simply does not apply in the currently investigated intergroup context.

We have so far discussed the theoretical explanations for our (non-)findings. However, there could also be methodological explanations. We start off by presenting a potential methodological explanation for the non-finding that we discussed above. We argue: our measurement of primary outgroup threat might not cover all of the threat aspects that would likely be associated with the secondary outgroup. If we look more closely at the item wording, we can see that perceived threat towards "freedom and rights" as well as towards "our [ingroup] prosperity" is assessed. Threat towards personal security, however, is not assessed. This notion of threat was frequently discussed in the media with regards to our secondary outgroup refugees and could thus likely be associated with them. Since we did not assess it, we cannot be sure if a generalization from perceived primary outgroup threat to secondary outgroup attitude would emerge for that specific facet of realistic threat.

Item wording might also offer a methodological explanation for the found indirect STE via 'attitude generalization': shared method bias. Vezzali et al. (2021), express concern over the fact that STE researchers frequently utilize similarly worded items and response scales when assessing primary- and secondary outgroup attitude. They argue that found associations (and ultimately indirect 'attitude generalization' effects) could be inflated because the same response scales are utilized. At present we cannot rule out this possibility for our results.

We argue that such a bias should not underlie our assessment of 'acceptance of diversity' and thus the found STE via 'multiculturalism' to the same extent, as that response scale differed. Still – since we cannot empirically assess the validity of these arguments – we conclude that shared method bias should be kept in mind when interpreting our results.

Several limitations apply to our study. They should be kept in mind when interpreting the findings. As any research that utilizes self-reported quantitative data, the current findings could be subject to biases such as social desirability, or methodological shortcomings concerning measurement reliability and –validity. The latter two could be essentially problematic, as many constructs were assessed with few items – too few to properly investigate measurement invariance across survey waves. Only acceptance of diversity was assessed with more than two items. In the method section (see page 114) we had already noted that the four items measuring acceptance of diversity formed a reliable scale at each measurement occasion. Appendix D further shows, that a latent construct consisting of these items would have also exhibited measurement invariance across time. We had opted to compute a scale mean, rather than latent constructs. The latter approach would have been superior from a psychometric perspective. However, it would also have brought about further limitations pertaining to statistical power. As a trade-off we thus utilized mean scores. We urge the reader to keep in mind the psychometric limitations stemming from that choice. We note that utilizing established, psychometrically superior scales would have been preferable, but using secondary data we had no influence on these matters. It suffices to say that the GESIS panel warrants a high quality of measurement instruments, with thought given to these potential issues and documentations of the reasons for item selection in the recurring study reports.

Related to construct measurement another limitation emerges. Our control variable concerning contact with the secondary outgroup was assessed as a binary 'yes'/'no' statement and not in terms of frequency. It should also be noted that this was assessed only once, with a slight delay between this measurement and the first survey wave. We are aware that technically respondents who answered 'no' could have had contact with refugees during this delay period or afterwards. Future studies should incorporate a more robust control for secondary outgroup contact, than was done here.

We also want to mention omitted variable bias as a potential limitation to our findings. Given the complexity of the analyzed models we refrained from including further control variables. We acknowledge that literature identified a multitude of further constructs and proposed theoretical pathways that presumably play a role in negative STE (see e.g. Vezzali et al., 2021, Fig. 1). Future research should broaden the focus and investigate further processes and conditional factors of negative STE, which were beyond the scope of the present study, for reasons of model parsimony and/or data availability. Relatedly, future research should investigate the potential for bi-directionality of the contact-attitude associations (see e.g. Dhont et al., 2011) and how this could factor into processes behind negative STE.

Conclusion

Concludingly, this research found evidence for negative STE in a longitudinal study design and the context of forced migration – directly and also indirectly via 'attitude generalization' and 'multiculturalism.' A pathway via 'perceived primary outgroup threat' did not emerge, which could be specific to the investigated intergroup scenario, where primary and secondary outgroup presumably elicited different threats. Although outside the research focus, we note that the same pathways emerged for positive STE – strengthening the argument that both

occur via similar mechanisms. This research fills several research gaps, relating to the causal sequence problem, the positivity bias in STE literature and its over-focus on the 'attitude generalization' mechanism. Yet it is unknown to what extent similar findings would occur in other intergroup contexts and more research of this kind needs to be conducted.

Chapter IX: Context-specific mechanisms of (negative) secondary transfer effects? A longitudinal investigation

Abstract

The secondary transfer effect (STE) suggests that contact with members of a (primary) outgroup generalizes, affecting attitudes towards uninvolved (secondary) outgroups. Literature concerning the STE's similarity gradient suggested contextual differences by outgroup characteristics. Our three-wave longitudinal study further explores this contextuality, tackling several research deficiencies: (a) the overfocus on positive contact, (b) reliance on cross-sectional designs, (c) limited knowledge regarding underlying processes, (d) scarcity of comparative studies investigating mediators or intergroup settings jointly. We investigate scenarios, that differ regarding the primary outgroup (Scenario A: Muslims, *N*= 385; Scenario B: Sinti & Roma, *N*= 396), but have the same contextual setting (Germany), temporal setting (2016-2017) and secondary outgroup (Refugees). We study three mediators of STEs from positive and negative contact: attitude generalization, multiculturalism, primary outgroup threat. As hypothesized, findings vary contextually - STEs via multiculturalism in Scenario A, direct STEs in Scenario B - highlighting the need for more comparative research.

Keywords: negative contact, secondary transfer effect, attitude generalization, multiculturalism, intergroup threat

Gordon Allport's classic contact hypothesis (1954) suggests that intergroup contact under appropriate conditions can effectively reduce prejudice between the members of the respective groups. Originating from empirical studies that attested to the validity of Allport's hypothesis, subsequent studies provided evidence for Secondary Transfer Effects (STEs). Positive contact with members of a primary outgroup sometimes generalizes to increased positive evaluations of uninvolved, secondary outgroups. Yet, much of the research in this area is characterized by the following shortcomings: (a) most studies tested hypotheses on positive contact effects, while investigations of negative STEs are particularly scarce; (b) the often-used cross-sectional research designs do not allow testing any causal hypotheses implied by the theory; (c) related to the second issue, it remains often unclear which psychological mediators underlie negative STEs; and (d) the few existing previous studies on negative STEs did not assess whether negative contact with a primary outgroup generalizes to several secondary outgroups at the same time and driven by the same psychological mediators. The current work extends the scarce literature (see e.g. Kauff et al., 2023) addressing these shortcomings. We elaborate them in the following and present them in the enumerated order.

Overemphasis on Positive STE

Positive contact between the members of different social groups can improve intergroup attitudes, as numerous studies have shown (Pettigrew & Tropp, 2008). More recently researchers extended this initial hypothesis by investigating potential STE of intergroup contact (Pettigrew, 2009; Vezzali et al., 2021). The core assumption about STE is that consequences from intergroup contact go beyond the involved outgroups (termed primary outgroups) and also affect attitudes "toward[s] groups [termed secondary outgroups] that were not directly involved in the contact." (Tausch et al., 2010, p. 4). Though still an understudied topic (Pettigrew & Tropp, 2006), STEs

and their underpinnings have gained more and more interest by researchers during the last decade (c.f. Vezzali et al., 2021).

Still this literature suffers from several deficiencies, a few of which we address in the current paper, drawing heavily on a review paper by Vezzali et al. (2021). For one, most research has investigated STE from positive contact only (Ünver et al., 2022). Since the influential study of Barlow et al. (2012), intergroup contact research noted the necessity to investigate the consequence of both positive and negative contact, as both kinds of contact can occur independently. Like direct intergroup contact investigations, STE research needs to shift away from this positivity bias and more research involving STE from negative contact is needed. With the current research we aim at fulfilling this demand.

Dire Need of Multi-Wave Longitudinal Studies

A second issue with the STE literature concerns causality considerations. The so-called causal sequence problem refers to the fact that most research utilizes cross-sectional research designs, making it impossible to test the causal assumption that intergroup contact leads to changes in reciprocal attitudes of their members and not vice versa (c.f. Pettigrew & Tropp, 2006, p. 757). Similar to the aforementioned positivity bias, this problem exists both in the literature on the classical contact hypothesis (Kotzur & Wagner, 2021), as well as in its STE subfield. Studies using longitudinal designs to bring the causal assumptions to an empirical test are particularly scarce when it comes to negative STEs. The review by Vezzali et al. (2021) included just five non-cross-sectional studies of this kind. The current research adds an additional one to this rather short list.

Psychological Mediators Underlying Negative STEs

Besides the positivity bias and the causal sequence issue, Vezzali et al. (2021) remark another shortcoming in the existing evidence: The mechanisms underlying negative STE are far from being fully understood. While the psychological mediators of STEs in general are understudied, the literature is again particularly scarce with regard to negative STEs. In their review, Vezzali et al. (2021) introduced a classification framework for suggested mediators which we apply in the current paper as well. Specifically, they distinguish between mediators involving the outgroup, mediators involving the ingroup and mediators involving the self. We introduce the three mediator groups, selecting from them specific mediators which warrant further investigation in negative STE research, namely: attitude generalization, primary outgroup threat, and multiculturalism.

Mediators Pertaining to the Outgroup

The first group of mediators for STEs involve the outgroup and describe processes whereby contact first alters the perception of the primary outgroup and thereby secondary outgroup attitudes. Attitude generalization—the first proposed mediator of STE (Pettigrew, 2009)—falls within this category: contact with a primary outgroup first alters the attitude towards this specific outgroup, which subsequently alters the attitude towards the secondary one (c.f. Ebbeler, 2020; see Sparkman, 2020 for a review). This mediator has been the primary focus of STE research, gaining empirical support across experimental (Harwood et al., 2011; Jasinskaja-Lahti et al., 2020; Joyce & Harwood, 2014), longitudinal (Bowman & Griffin, 2012; Henschel & Kötting, 2023; Tausch et al., 2010, Study 4) and cross-sectional studies (Brylka et al., 2016; Henschel & Derksen, 2022; Lissitsa & Kushnirovich, 2018, 2020; Pettigrew, 2009, Studies A & B; Schmid et al., 2012; Schmid et al., 2014a, Studies 1 & 2; Schulz & Taylor, 2018; Tausch et al., 2010, Studies 1-3; Ünver et al., 2021; Vezzali et al., 2018; Vezzali et al., 2020).

Attitude generalization is, however, not the only STE mediator involving the outgroup. Since various intergroup-related sentiments mediate the link between primary outgroup contact and primary outgroup attitude (for a discussion see e.g. Seger et al., 2017), researchers have proposed that similar processes might operate, when contact effects generalize. Particularly, empathy (see e.g. Vezzali & Giovanini, 2011; see also Nell, 2017 who provides a list of further studies), perspective taking (Schulz & Taylor, 2018; Vezzali & Giovanini, 2011, 2012), anxiety (Turner & Feddes, 2011; Vezzali & Giovanini, 2012), trust (see e.g. Zezelj et al., 2020), or intergroup threat (Zingora & Graf, 2019; but see Henschel & Kötting, 2023; Mähönen & Jasinskaja-Lahti, 2016) have been studied. Most of these studies were cross-sectional, covering positive but not negative STE. Certain intergroup emotions are generally empirically supported as mediators (e.g. empathy, perspective taking and anxiety).

For perceived intergroup threat, however the picture is less clear (see Zingora & Graf, 2019, but see Henschel & Kötting, 2023; Mähönen & Jasinskaja-Lahti, 2016). Researchers have called for a closer study of this mediator (see e.g. Kauff et al., 2023). Accordingly, the mediator warrants further investigation in negative STE research. The underlying theory describes how positive contact with an outgroup lowers the level of threat which is perceived from this group and thus improves attitudes towards other, unrelated outgroups (see e.g. Zingora & Graf, 2019). Theoretical underpinning comes from integrated threat theory (Stephan et al., 2009) and "evidence that perceived threats from social minorities are interconnected" (c.f. Zingora & Graf, 2019, p. 8). It thus seems especially promising to study threat as a mediator: In light of the inconclusive existing empirical evidence, and also since it is a negative sentiment and thus might play an important role in STE from negative contact (itself an understudied research topic).

Thereby it should be studied alongside attitude generalization (that itself proved to be a mediator many times over) to distinguish both processes.

Mediators Pertaining to the Ingroup and Mediators Involving the Self

Next to the above-mentioned mediators involving the outgroup, Vezzali et al. (2021) introduce two additional categories. Mediators involving the ingroup denote processes whereby contact alters the perception of the own group (e.g., the ingroup identification or -attitude), which then affects how secondary outgroups are perceived. Mediators involving the self, represent processes whereby contact alters characteristics of the contacting individual (e.g. the personality, or ideological views), which then affects secondary outgroup attitudes. Both ideas were first introduced within Pettigrew's deprovincialization hypothesis and thus the literature does not always distinguish between both types of processes (Ebbeler, 2020; Lolliot et al., 2013). Originally coined by Pettigrew (1997), the hypothesis states that "[…] a process of deprovincialization […] not only individualizes and humanized outgroup members but serves to distance you from your ingroup" (p. 174).

Lolliot (2013) and Ebbeler (2020) have argued that a differentiation into a process involving the ingroup versus the self is, however, necessary for the sake of conceptual clarity. In line with Vezzali et al.'s (2021) classification as a mediator, involving the ingroup, one of these processes concerns a distancing from the ingroup in attitude and/or identification. The other process describes ideological changes whereby the contacting person broadens their horizon, resulting in a higher valuation of all kinds of outgroups and hence should be classified as a mediator involving the self. In order to clearly distinguish this mediator from the distancing from the ingroup, Lolliot (2013) introduced it as the separate STE mediator multiculturalism: Contact

with a primary outgroup affects the general appreciation for cultural diversity, and thus how unrelated secondary outgroups are perceived.

Given the aforementioned conceptual lack of clarity, it is not surprising that the empirical evidence regarding the deprovincialization hypothesis "is rather inconclusive, showing little evidence" (Vezzali et al., 2021, p. 25) as researchers connected it either with the first or to the second process described (Ebbler, 2020). Studies focusing on the first part—the distancing from the ingroup—often fail to find empirical evidence (see e.g. Henschel & Derksen, 2022; Kauff et al., 2023; see also Pettigrew, 2009 and Tausch et al., 2010, as cited in Ebbeler, 2020). Contrastingly, among the few studies that focused on the second part which Lolliot termed multiculturalism, many found empirical support (Henschel & Derksen, 2022; Henschel & Kötting, 2023; Lolliot, 2013; but see Kauff et al., 2023). Accordingly, multiculturalism warrants further investigation in negative STE research.

In total, we have identified two mediators that call for further investigation in negative STE research: perceived primary outgroup threat and multiculturalism. They should be included alongside the frequently studied mediator attitude generalization. The current research was carried out to fill this gap.

Simultaneous Generalization to Several Secondary Outgroups?

In the previous paragraph we have highlighted that the few existing studies on negative STE cover only a narrow portion of the theoretically proposed mediators. Looking more closely at these studies, another research deficiency becomes apparent: Studies are limited to certain intergroup settings, thus studying generalization to only one outgroup at a time. It is yet unknown whether these finding would replicate across other intergroup contexts which is particularly problematic since theories behind the various mediators make reference to the fact

that the similarity between primary and secondary outgroup should affect the emergence of certain mediators. This similarity would likely vary across intergroup contexts given differences in situational setting and combination of investigated outgroups. In line with this idea, the few studies covering multiple intergroup contexts show contextually incongruent results (see e.g., Kauff et al., 2023). For each investigated mediator, we recount how similarity should affect its emergence and afterwards we highlight the difficulty of capturing similarity.

Attitude generalization

Pettigrew (2009) was the first to suggest that the emergence of attitude generalization is influenced by outgroup similarity regarding the associated stereotypes and perceived social status. As Ünver et al. (2022) summarize, empirical support from subsequent studies was mixed. Notably some studies showed attitude generalization even for dissimilar outgroups (Schmid et al., 2014b). Others found that similarity affects the strength of attitude generalization, rather than its emergence (Harwood et al., 2011; Ünver et al., 2021; Vezzali & Giovannini, 2012).

Primary outgroup threat

Similarity between the primary and secondary outgroups may also matter for threat as a mediator of STE. Particularly Zingora and Graf (2019) based this notion on the idea that topological semantic networks exist, which link threats from similar outgroups.

Multiculturalism

Lastly, also the literature on multiculturalism as an STE mediator refers to primary and secondary outgroup similarity. However, similarity is defined differently here and refers to the fact that both outgroups should be associated with salient cultural practices that can be valued and de-valued as a consequence of primary outgroup contact (Lolliot, 2013).

Defining similarity

As our literature review revealed, for several of the proposed mediators of STEs, similarity between the primary and secondary outgroups should matter. STEs are supposed to be the stronger, the more similar the secondary outgroups are to the primary outgroup. Yet, the different lines of reasoning as to why a given mediator should depend on this similarity, also vary with regard to the dimensions of similarity that are considered important. Put differently, while authors concur that similarity between the various groups under consideration matters, they focus on different aspects with regard to which these groups may be more or less similar. In the current study we assess similarity via two frameworks that may be relevant here: the Stereotype content model (SCM; see Asbrock, 2010) and Goffman's (1963) typology of social stigma (TSS; Lolliot, 2013). The TSS classifies outgroup stigma by the reasons for outgroup devaluation into three types of stigma: (a) category stigma (based on ethno-religious grounds); (b) physical stigma (based on deviant physical characteristics); and (c) character or mental stigma (based on the perceived lack of the outgroup's sense of morality). According to Lolliot (2013) multiculturalism should apply as an STE mediator primarily, when all outgroups are classified based on category stigma, because in that case these outgroups should be saliently associated with cultural practices that can be (de)valued following contact. In a similar way, the SCM might be used to assess the applicability of the STE mediators attitude generalization (increasing with outgroup similarity on the SCM dimensions warmth and competence) and threat (increasing with similarity on the SCM dimension warmth). The SCM rests on the idea that outgroup-related stereotypes can be aggregated into two dimensions (c.f. Fiske et al., 2002): warmth (are goals of the outgroup aligned which those of my ingroup) and competence (how effectively can the outgroup pursue their goals). As Kervyn et al. (2015) show, both dimensions are heuristically anticipated by social cues like the outgroup's social status (relating to

competence) or the perceived threat (relating to warmth). Therefore, we assessed SCM related similarity of outgroups, based on available literature that recounts the involved outgroups social status and associated threats.

Research Deficiencies in Summary

Firstly, there is a positivity bias in the literature on intergroup contact, meaning that STEs originating from negative contact are understudied. Secondly, a causal sequence problem persists because cross-sectional study designs prevail. Thirdly, only few of the proposed mediators have been empirically investigated regarding negative STEs. Lastly, very few studies investigated whether negative contact with a primary outgroup generalizes to several secondary outgroups at the same time and whether these potential negative STEs are driven by the same psychological mediators. The importance of the latter issue is enhanced by shortcomings in the assessment of outgroup similarity, which according to theory should determine the pertinence of potential mediators. To address these deficiencies, a multi-wave longitudinal study is needed that jointly investigates several mediating processes behind positive and negative STE across several intergroup contexts, systematically assessing outgroup similarity. Such a study is reported here. Specifically, we want to answer the following research questions: “Do negative secondary transfer effects occur robustly across the investigated intergroup contexts?” (RQ1); “To what extent do the underlying mechanisms differ between intergroup contexts by similarities in stereotype content?” (RQ2).

Intergroup Context: Situational Setting

It is obviously important that the intergroup context in which STEs are studied is relevant to the respective social setting, in our case Germany. Germany is a country in central Europe that

experienced a relatively sudden though large-scale influx of asylum seekers - most prominently from Syria (Federal Office for Migration and Refugees, BAMF, 2017) - during 2015/2016 in what is commonly called the 'refugee crisis.'

To put emphasize the scale of these events, according to the German Federal Office for Migration and Refugees, Germany admitted around 1.6 million forced migrants in time between 2014 and 2017 (Federal Office for Migration and Refugees, BAMF, 2022). Thereby refugees from Syria constituted the by far largest ethno-cultural group of recorded first-time asylum applicants (Federal Office for Migration and Refugees, BAMF, 2017). To give an example, in 2016, 38% of the recorded 722,370 cases, involved applicants from Syria. In the next year, the same trend was visible, now constituting nearly 25% of the 198,317 recorded first-time asylum applicants.

Accordingly, refugees make up a substantial minority group, one that is controversially discussed and evaluated (c.f. Henschel & Derksen, 2022). Generally, refugees are seen by Germans as an outgroup that scores medium high in competence and warmth (Kotzur et al., 2019). Being an ethno-religious group, refugees are devalued due to category stigma which might be seen from the discussion surrounding delinquency, terroristic, and misogynistic attacks attributed to them. Together these issues may be summarized as a fear of misaligned cultural-religious norms. We chose this intergroup context to study whether residents of Germany have generalized from previous contact with other outgroups, to form an opinion about the suddenly emerging new outgroup of refugees, and if so, by which mechanisms such a negative STE has happened. We investigated the potential generalization from contact with two outgroups: Muslims and Sinti & Roma.

Intergroup Context A: Primary Outgroup Muslims

Muslims, as a religious group, have rather a long history in Germany, especially after the arrival of many Turkish migrant workers in the 1960s. Their integration remained an ongoing debate, especially after the 2001 twin tower attacks and again in the early 2010s (c.f. Foroutan, 2013, Section II.C). Research summarizes the stereotypes evoked by this group as: lacking ability to integrate (Canan & Foroutan, 2016) and high aggression combined with deviant views on politics and democracy (Sommer & Kühne, 2021). Especially Muslim men seem to evoke this stereotype of aggressive patriarchs with views that are unaligned to Western cultural norms, secularism and gender equality. From this description one can already deduce that, like refugees, Muslims are an ethno-religious outgroup that is devalued due to category stigma. The fact that both groups invoke similar stereotypes has been noted by previous research (Sommer & Kühne, 2021) and in reflected in similar placements on the SCM dimensions warmth and competence (Asbrock, 2010, Fig. 1; Cuddy et al., 2009, Fig. 1 & 2). In fact, respondents may perceive refugees (in the investigated German context) as a sub-category of Muslims, which further shows the similarity between both groups. We thus formulate the following hypotheses regarding (mediators of) STE:

H1: Negative contact with Muslims is associated with a more negative evaluation of refugees.

H2: Positive contact with Muslims is associated with a more positive evaluation of refugees.

We expect that negative STE and positive STE occur partially via attitude generalization, multiculturalism and perceived primary outgroup threat. Thus we hypothesize:

H3: The association between negative contact with Muslims and the evaluation of refugees is partially mediated by a more negative primary outgroup attitude, reduced acceptance of diversity, and increased perceived primary outgroup threat.

H4: The association between positive contact with Muslims and the evaluation of refugees is partially mediated by a more positive primary outgroup attitude, higher acceptance of diversity and reduced perceived primary outgroup threat.

Intergroup Context B: Primary Outgroup Sinti & Roma

With Sinti & Roma there is a long history of intergroup relations in Germany, markedly negative ones. Throughout centuries they were shunned and persecuted. Even today prejudice towards Sinti & Roma is considered "the last [socially] acceptable prejudice in Europe" (Kende et al., 2021, p. 388). Associated with this group is the stereotype of large delinquent family clans that refuse to adapt to a sedentary life and exploit social systems. Representatives of Sinti & Roma have lamented this negative portrayal in media and public debate (Kende et al., 2021) and that engagement with and portrayal of their actual cultural norms and customs remains superficial. In other words, Sinti & Roma are primarily devalued due to character stigma. While they evoke somewhat similar stereotypes as Refugees and Muslims (particularly regarding delinquency and deviant cultural values), the reasons for their deviancy appear to be primarily attributed to character flaws rather than religious convictions (End, 2014). On the SCM dimensions warmth and competence they score low (Fiske, 2018; Grigoryev et al., 2019, Figure 1; Stanciu et al., 2017, Figure 1). We thus formulate the following hypotheses regarding (mediators of) STE:

H5: Negative contact with Sinti & Roma is associated with a more negative evaluation of refugees.

H6: Positive contact with Sinti & Roma is associated with a more positive evaluation of refugees.

As in the previous intergroup scenario, we again expect that negative STE and positive STE occur partially via attitude generalization and perceived primary outgroup threat. Given the classification character stigma and the disengagement of the German public regarding the Sinti & Roma cultural practices we do not expect STE via multiculturalism and hypothesize:

H7: The association between negative contact with Sinti & Roma and the evaluation of refugees is partially mediated by a more negative primary outgroup attitude, and increased perceived primary outgroup threat, but not by reduced acceptance of diversity.

H8: The association between positive contact with Sinti & Roma and the evaluation of refugees is partially mediated by a more positive primary outgroup attitude, and reduced perceived primary outgroup threat, but not by increased acceptance of diversity.

As we have seen that Sinti & Roma, show less similarity with refugees in stereotype content than do Muslims, we additionally hypothesize that direct STEs and aforementioned attitude generalization and threat effects emerge weaklier than in intergroup Scenario A:

H9: Any aforementioned indirect effects as well as direct STEs are comparatively weaker than the equivalent indirect effects from intergroup scenario A.

Methods

Sample and Design

For the purpose of testing our hypotheses, we require longitudinal panel data spanning at least three survey waves and intergroup scenarios with varying primary outgroups but 'Refugees' as the common secondary outgroup. As shown by previous research (Henschel & Kötting, 2023), the Refreshment Cohort c from the German GESIS panel (Bosnjak et al., 2017; GESIS, 2021) fulfills these requirements. In this dataset we identified *N*= 2012 participants who answered relevant items from a rotating module covering assessments of intergroup contact and outgroup attitudes. Specifically, in analyzing only data from Cohort c, we have an assessment of contact with the secondary outgroup Refugees which helps us disentangle this alternative explanation for any found effects from primary outgroup contact. The spacing between survey waves was 6 months. Wave 1 was sampled between October and December 2016, Wave 2 between April and June 2017 and Wave 3 between October and December 2017.

As mentioned by Henschel and Kötting (2023) this dataset contains a split-survey design in which contact with one of four (primary) outgroups was assessed. This shall enable us to assess negative STE within two subsamples that involve different intergroup scenarios. The four outgroups assessed in the split survey design were: 'Muslims living in Germany' (Subsample A), 'Sinti & Roma' (Subsample B), 'Foreigners living in Germany' (Subsample C), 'Refugees' (Subsample D). Positive and negative intergroup contact was only assessed regarding the assigned outgroup, whereas outgroup attitudes towards all four outgroups were assessed. As noted before, a slightly earlier survey wave that occurred before the split had assessed contact with the outgroup 'Refugees' for all panelists.

Out of the four subsamples, two are not eligible to act as primary outgroups for our study: Participants from Subsample C were already investigated regarding negative STE by Henschel and Kötting (2023). Subsample D cannot be used since 'Refugees' already act as our secondary outgroup. Thus we focus on subsamples A ('Muslims living in Germany') and B ('Sinti & Roma').

Measures

We present the utilized survey items below in Table 9 and refrain from an elaborated discussion since this can be found within the GESIS sample report (see e.g. Weyandt, 2022). We will address applicable limitations in the discussion section.

Table 9

Measurement of Constructs.

Construct	Item wording	Response scale
Positive contact with [primary outgroup]	- *"When you think about all your contacts with* [primary outgroup] *who live in Germany: How often have you had positive experiences?"* - *"How frequently do you have positive or good contact with* [primary outgroup] *at your place of employment or apprenticeship?"*	0 (never) – 3 (frequently) (A mean score was computed.)
Negative contact with [primary outgroup]	- *"When you think about all your contacts with* [primary outgroup] *who live in Germany: How often have you had negative experiences?"* - *"How frequently do you have negative or bad contact with* [primary outgroup] *at your place of employment or apprenticeship?"*	0 (never) – 3 (frequently) (A mean score was computed.)
Contact with Refugees	- *"In recent months, many refugees have come to Germany. Have you ever had direct personal contact with refugees?"*	1 (yes) 0 (no)
Attitude towards [primary outgroup]	- *"How would you assess* [primary outgroup] *in Germany overall?"* - *"How would you describe your feeling towards* [primary outgroup] *in Germany overall?"*	1 (very negative) – 5 (very positive) (A mean score was computed.)
Attitude towards Refugees	- *"How would you assess refugees in Germany overall?"* - *"How would you describe your feeling towards refugees in Germany overall?"*	1 (very negative) – 5 (very positive) (A mean score was computed.)

Perceived threat from [primary outgroup]	-	*"*[primary outgroup] *who are living here threaten our freedoms and rights"*	1 (fully disagree) – 4 (I totally agree) (A mean score was computed.)
	-	*"*[primary outgroup] *who are living here threaten our prosperity"*	
Acceptance of diversity	-	*"I value cultural diversity in Germany because it is useful for the country."*	1 (fully disagree) – 4 (I totally agree) (A mean score was computed.) Chronbach's alpha: .88 at T1 .89 at T2 .88 at T3
	-	*"A society with a high degree of cultural diversity is more capable of tackling new problems."*	
	-	*"In general, I have positive attitudes about people from different cultural backgrounds."*	
	-	*"I like people from different cultural backgrounds."*	

Sub-Sample Characteristics

Subsample A (primary outgroup: 'Muslims living in Germany') consists of N= 406 participants. We follow the procedure of Henschel and Kötting (2023) to only select respondents with a German citizenship (item d11d057a = 1; see Weyandt, 2022), thus reducing the sample size to N= 385. In addressing missing cases we follow the guidelines of Newman (2014), although we do not utilize the mean across available items technique to form construct-level scores as most constructs just consist of two items tapping into distinct construct facets. Employing Little's test, missing cases emerged as missing completely at random ($\chi 2$= 1249.758, DF = 1198, p = .145). Accordingly, our final sample includes the previously mentioned N= 385 respondents whereby missings were imputed by full-information-maximum-likelihood (FIML) algorithm. Table 10 shows the emergent correlation matrix, and descriptive statistics.

Regarding Subsample B (primary outgroup: 'Sinti & Roma') we employed the same procedure as described above, leading to a sample of N= 396 cases. Missings were MCAR (MCAR; $\chi 2$= 1496.589, DF = 1522, p = .674), warranting FIML imputation. Table 11 shows the emergent correlation matrix, and descriptive statistics.

Analytic Strategy

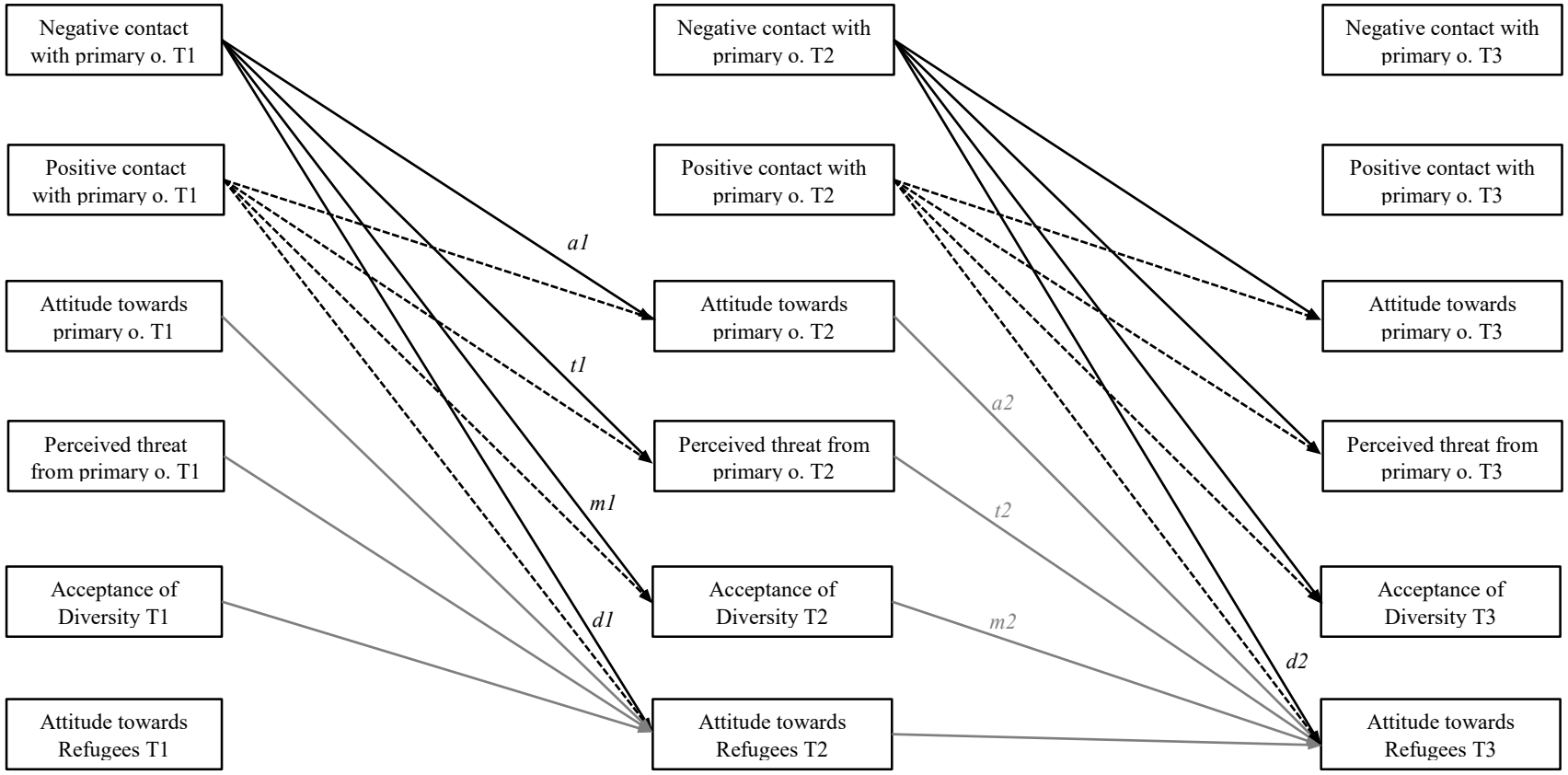
To test our hypotheses and answer the research questions, we estimate the path model depicted in Figure 5. This path model describes a cross-legged panel mediation with the three parallel mediators corresponding to our tests of the 'attitude generalization hypothesis', as well as 'multiculturalism' and 'perceived primary outgroup threat.' The path model is kept identical to the one studied by Henschel and Kötting (2023), to allow comparability of their findings concerning one specific intergroup context to our results spanning two additional intergroup contexts.

To this end we also employed the same analytical procedure as these authors, which we elaborate below. Specifically, we utilized the software MPlus v. 8.6 (Muthén & Muthén, 2017), the ML estimator, and bias corrected bootstrapping (10000 iterations) to assess statistical significance. Similarly, we shall report the unstandardized coefficients in our results section. Ad-hoc power analyses are conducted to discuss implications of (lacking) statistical power to our results, with the help of an online tool by Wang and Rhemtulla (2021).

To test Hypothesis 9, concerning the higher strength of indirect negative STE via attitude generalization and primary outgroup threat, we shall conduct contrast analyses concerning these effects in intergroup scenarios A and B. As both scenarios involve distinct datasets we shall compare the bootstrap distributions of equivalent indirect STE effects via a t-test.

Figure 5

The proposed Path Model.



Note. o. = outgroup. Variables were allowed to correlate within each time point. Dotted lines mark those paths which involve positive contact; Likewise, black lines mark paths that involve negative contact; Grey lines mark regression paths from mediators to secondary

outgroup attitude. Autoregressive paths not involved in mediation are estimated but are not depicted. The same applies to the control variable ‘Contact with Refugees T1’.

Table 10

Intergroup Scenario A: Descriptive Statistics and Correlations of Constructs.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. N_1	1.43	0.67	—																		
2. N_2	1.51	0.64	.69**	—																	
3. N_3	1.55	0.70	.59**	.58**	—																
4. P_1	1.89	0.92	.29**	.30**	.17*	—															
5. P_2	2.05	0.96	.15**	.39**	.16**	.70**	—														
6. P_3	2.07	0.93	.14*	.24**	.34**	.64**	.67**	—													
7. F_1	2.92	0.70	−.27**	−.16*	−.21**	.43**	.41**	.34**	—												
8. F_2	2.91	0.67	−.24**	−.13	−.22**	.45**	.47**	.35**	.75**	—											
9. F_3	2.92	0.64	−.21*	−.14	−.28**	.35**	.38**	.33**	.63**	.68**	—										
10. A_1	2.98	0.68	−.17**	−.08	−.27**	.36**	.33**	.27**	.57**	.59**	.54**	—									
11. A_2	2.94	0.64	−.20**	−.10	−.26**	.39**	.42**	.32**	.58**	.63**	.58**	.80**	—								
12. A_3	2.96	0.62	−.13*	−.05	−.20**	.42**	.40**	.35**	.53**	.59**	.62**	.70**	.73**	—							
13. T_1	2.01	0.80	.29**	.24**	.30**	−.32**	−.31**	−.28**	−.68**	−.64**	−.63**	−.57**	−.62**	−.50**	—						
14. T_2	2.08	0.78	.22**	.21**	.30**	−.36**	−.36**	−.29**	−.57**	−.69**	−.63**	−.55**	−.62**	−.56**	.74**	—					
15. T_3	2.03	0.81	.19**	.22**	.30**	−.31**	−.27**	−.27**	−.56**	−.60**	−.64**	−.58**	−.64**	−.58**	.69**	.73**	—				
16. R_1	2.91	0.76	−.28**	−.16*	−.25**	.35**	.36**	.27**	.76**	.64**	.61**	.60**	.60**	.56**	−.62**	−.55**	−.51**	—			

17. R_2	2.90	0.75	−.17**	−.11	−.22**	.39**	.41**	.29**	.65**	.72**	.61**	.60**	.67**	.57**	−.59**	−.62**	−.59**	.72**	—		
18. R_3	2.84	0.72	−.19**	−.16*	−.35**	.28**	.26**	.20**	.55**	.56**	.72**	.58**	.59**	.63**	−.56**	−.55**	−.57**	.67**	.69**	—	
19. C_1[a]	0.43	0.49	.21**	.27**	.05	.35**	.24**	.20**	.16**	.13*	.14*	.27**	.25**	.23**	−.14**	−.13*	−.10	.19**	.24**	.29**	—

Note. N = 385. N = Negative contact with Muslims, P = Positive contact with Muslims, C = Contact with refugees, R = Attitude towards refugees, F = Attitude towards Muslims, A = Acceptance of diversity, T = perceived threat from Muslims. Numbers after the underscores denote the survey wave. [a] 1 = Yes and 0 = No. * p < .05, ** p< .01.

Table 11

Intergroup Scenario B: Descriptive Statistics and Correlations of Constructs.

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. N_1	1.21	0.47	—																		
2. N_2	1.26	0.56	.54**	—																	
3. N_3	1.31	0.59	.66**	.63**	—																
4. P_1	1.15	0.43	.63**	.23*	.39**	—															
5. P_2	1.26	0.48	.35**	.64**	.45**	.37**	—														
6. P_3	1.26	0.48	.48**	.45**	.69**	.55**	.60**	—													
7. F_1	2.77	0.64	−.15	-.18*	−.19*	.18*	.01	.06	—												
8. F_2	2.74	0.62	−.27**	−.31**	−.32**	−.03	−.05	−.03	.58**	—											
9. F_3	2.68	0.69	−.18*	−.27**	−.35**	.11	−.02	.00	.64**	.67**	—										
10. A_1	2.94	0.67	−.10	−.17**	−.16*	.07	−.03	.00	.45**	.42**	.43**	—									
11. A_2	2.91	0.68	−.10	−.18**	−.18**	.05	−.01	.01	.36**	.48**	.46**	.75**	—								
12. A_3	2.88	0.69	−.11	−.19**	−.18**	.05	−.03	−.02	.38**	.46**	.46**	.78**	.83**	—							
13. T_1	1.71	0.78	.33**	.35**	.38**	.04	.13*	.18*	−.53**	−.57**	−.49**	−.38**	−.43**	−.39**	—						

14. T_2	1.85	0.75	.27**	.35**	.33**	−.03	.10	.11	−.48**	−.58**	−.55**	−.43**	−.54**	−.51**	.65**	—						
15. T_3	1.93	0.75	.24**	.29**	.35**	−.01	.04	.12*	−.40**	−.50**	−.52**	−.42**	−.50**	−.49**	.66**	.73**	—					
16. R_1	2.98	0.76	−.17*	−.16	−.26**	.04	−.02	−.05	.62**	.45**	.47**	.57**	.53**	.55**	−.46**	−.43**	−.37**	—				
17. R_2	2.81	0.76	−.13*	−.21**	−.26**	.06	−.04	−.07	.48**	.64**	.53**	.59**	.62**	.63**	−.46**	−.47**	−.47**	.71**	—			
18. R_3	2.83	0.74	−.14*	−.21**	−.24**	.06	.00	−.07	.40**	.48**	.55**	.57**	.60**	.60**	−.42**	−.46**	−.45**	.66**	.74**	—		
19. C_1[a]	0.44	0.50	.23**	.17**	.19**	.23**	.21**	.22**	.19**	.12*	.08	.19**	.19**	.18**	-.09	-.14*	-.19**	.12*	.19**	.20*	—	

Note. N = 396. N = Negative contact with Sinti & Roma, P = Positive contact with Sinti & Roma, C = Contact with refugees, R = Attitude towards refugees, F = Attitude towards Sinti & Roma, A = Acceptance of diversity, T = perceived threat from Sinti & Roma. Numbers after the underscores denote the survey wave. [a] 1 = Yes and 0 = No. * p < .05, ** p< .01.

Results

The path model shown in Figure 5 was tested, to investigate Hypotheses 1 to 8 (see Appendix E in the supplementary material for a tabular overview of results). We start by presenting the results for Hypotheses 1 to 4, which involve Intergroup Scenario A (primary outgroup: Muslims).

Hypothesis 1

The path model fitted the data at best satisfactorily well (χ^2 =326.651, *df* = 78, $p <$ .001, *RMSEA* = 0.091, *TLI* = 0.843, *CFI* = 0.918, *SRMR* = 0.100). The results did not indicate any empirical evidence for a direct negative STE at the first ($b = –.060$, $p = .298$, 95% CI [-.169, .058]), or the second time-lag ($b = –.129$, $p = .078$, 95% CI [–.275, .008]). Thus Hypothesis 1 could not be empirically supported.

Hypothesis 2

In contrast, the results pertaining to Hypothesis 2 indicated evidence for a direct positive STE during the first time-lag. This sufficiently powered (power = 0.85) effect occurred during the first time-lag ($b = .104$, $p = .022$, 95% CI [.018, .196]). Yet, no such effect occurred during the second time-lag ($b = .019$, $p = .732$, 95% CI [–.083, .132]).

Hypothesis 3

Regarding the mediating mechanisms underlying negative STE in Intergroup Scenario A, empirical support emerged for the multiculturalism path ($b = –.020$, $p =.091$, 95% CI [-.039, –.002]) but not with regards to attitude generalization ($b = –.016$, $p =.297$, 95% CI [–.055, .007]) and perceived primary outgroup threat ($b = .001$, $p =.926$, 95% CI [–.017, .020]). Thus, Hypothesis 3 could not be empirically supported. It should be noted that the mediation effect via multiculturalism was not sufficiently powered (power = .71). However, both

constituting regression paths were (c.f. Table E1 in Appendix E in the supplementary material).

Hypothesis 4

The results for Hypothesis 4 show that the same conclusions should likely be drawn regarding the mechanisms behind positive STE. Again, we find indication for the multiculturalism path (b = .017, p =.079, 95% CI [.001, .040]) but not with regard to attitude generalization (b = .018, p =.265, 95% CI [-.010, .055]) and perceived primary outgroup threat (b = -.001, p =.924, 95% CI [–.021, .020]). Accordingly, Hypothesis 4 could not be empirically supported.

Hypothesis 5

We now present the results for Hypotheses 5 to 8, which involve Intergroup Scenario B (primary outgroup: Sinti & Roma). The path model did not fit the data well (χ^2 = 434.435, df = 78, p < .001, *RMSEA* = 0.107, *TLI* = 0.768, *CFI* = 0.879, *SRMR* = 0.112). It generated longitudinal evidence for a direct negative STE between T2 and T3 (b = –.170, p = .033, 95% CI [–.322, –.009]) but not between T1 and T2 (b = –.094, p = .304, 95% CI [–.270, .089]). Concludingly, negative contact with Sinti & Roma was thus indeed directly associated with a less positive attitude towards Refugees, although only between T2 and T3. Power analyses revealed that this effect was sufficiently powered (power = 0.80). To summarize: we found empirical evidence in favor of H5, though not at both time-lags.

Hypothesis 6

The results of H6 show that our conclusion from H5 also extends to the sphere of positive contact. A direct positive STE could be found between T2 and T3 (b = .157, p = .040, 95% CI [.007, .310]), but not between T1 and T2 (b = .053, p = .573, 95% CI [–.130, .234]). It should be noted that this effect was slightly underpowered (power = 0.71).

Hypothesis 7

In contrast, the model did not indicate that the negative STE occurred via the theorized mechanisms of attitude generalization (b = .015, p =.577, 95% CI [–.027, –.087]), multiculturalism (b = –.020, p =.263, 95% CI [–.063, .008]) and primary outgroup threat (b = –.014, p =.598, 95% CI [–.071, .033]). Specifically, of the mediators only perceived primary outgroup threat and attitudes were associated with negative primary outgroup contact. Secondary outgroup attitudes on the other hand were only associated with acceptance of diversity (see Table E2 in Appendix E in the supplementary material). Summarizing, Hypothesis 7 could not be empirically supported.

Hypothesis 8

The results pertaining to H8, reveal that our conclusions regarding the mechanisms behind negative STE also extend to the sphere of positive STE. In contrast to theory, positive STE did not occur via attitude generalization (b = .002, p =.880, 95% CI [–.017, .053]), multiculturalism (b = .009, p =.692, 95% CI [–.035, .057]) and primary outgroup threat (b = .009, p =.623, 95% CI [–.021, .055]). Thus, Hypothesis 8 could not be empirically supported.

Hypothesis 9

As no indirect negative STEs emerged in Intergroup Scenario B, no contrast analyses may be conducted as pertaining to Hypothesis 9. Given that no indirect effects occurred in this scenario, Hypothesis 9 could not be empirically supported.

From the combined results of our analyses we conclude the following: across various intergroup scenarios we see indication that majority group members might generalize from negative contact with migrant outgroups to form more aversive attitudes towards forced migrants. What seems to differ between these contexts is how exactly negative STE occurs. Across the so far studied intergroup contexts, acceptance of diversity always appeared

predictive of refugee-related attitudes but negative primary outgroup contact was not always associated with reduced acceptance of diversity. A second conclusion is that the same kind of generalization also seems to apply to positive contact experiences. The generalizing effects regarding positive contact seem to mirror those for negative contact, showing the same context-specific behavior.

Discussion

With this study, we aimed to investigate the negative STE in a robust longitudinal and comparative study design. Specifically, we wanted to remedy four research deficiencies: firstly, that investigations of negative STE are scarce (RD1), secondly that cross-sectional research designs prevail and thereby the causal sequence problem (RD2), thirdly that the coverage of the theoretically proposed mediators is meager (RD3), lastly that few studies have comparatively investigated several mediators or secondary outgroups (RD4).

Firstly, the current study provided yet another piece of empirical evidence for negative STE. Secondly, the use of a longitudinal design gave further indication that STE processes occurred in theorized causal sequence. Regarding RD3, the study increased the yet scarce evidence for multiculturalism as an important independent STE mediator, but also contributed to the scarce but mounting longitudinal evidence against primary outgroup threat as a mediator of (negative) STE and, interestingly enough, did not replicate the otherwise abundant empirical evidence for attitude generalization as an STE mediator. Finally, (relating to RD4) the study highlights how applicability of STE mediators varies across intergroup contexts, that differ regarding the similarity between primary and secondary outgroups. Although results did not emerge exactly as the theory proposes, the fact that we see contextuality offers an explanation for interpreting current findings against seemingly conflicting results obtained in other intergroup settings (see e.g. Kauff et al., 2023). Congruent with the aforementioned study and previous theory, multiculturalism might not apply as an STE mediator in contexts where one of the involved outgroups is not associated with salient cultural practices (c.f. Lolliot, 2013). To summarize in brief: while the phenomenon negative STE robustly occurred across investigated intergroup contexts, the way in which it occurred varied.

Specifically, we saw that in Intergroup Scenario B, only direct negative (and positive) STE emerged, while in Intergroup Scenario A, we saw negative (and positive) STE via multiculturalism. Interestingly enough, we see that for both contexts, acceptance of diversity is a key predictor for attitudes towards the secondary outgroup (refugees). Before discussing why predictions regarding two of the investigated mediators (attitude generalization and perceived primary outgroup threat) did not bear fruit, we shall take a step back and discuss the one which did in fact behave as predicted: multiculturalism.

Discussing What Worked as Theorized

Regarding the emergence of multiculturalism as a mediator of STE, Lolliot (2013) had hypothesized the following: "Multiculturalism, as a result, may only be useful when considering social groups that have salient or recognised cultural practices" (Lolliot et al., 2013, p. 91). This statement is empirically backed up by results of multiple studies conducted by Lolliot (2013, Study 4b & 4c) and likewise the results of our study align with it. The mediator emerged in Intergroup Context A, where the covered outgroups (Muslims and Refugees) both have saliently perceived cultural norms stemming from the same religious background. Contrastingly the mediator did not emerge in Intergroup Context B, whereby respondents likely were unfamiliar with specific cultural norms of the primary outgroup (Sinti & Roma). The fact that no STE via multiculturalism occurred in this scenario aligns with findings of Kauff et al. (2023) who investigated a 'reversed' intergroup scenario whereby Refugees were the primary- and Sinti & Roma were the secondary outgroup. The fact that two independent studies, focusing on different samples find that STE via multiculturalism does not apply in this specific intergroup combination, strengthens the validity of these findings.

Indeed, Kende et al. (2021) highlighted that antiziganism (the scientific term for prejudice against outgroups such as travelers and Sinti & Roma) is somewhat distinct from

other forms of outgroup prejudice. To begin with, antiziganism is not only widely prevalent but is also still widely socially acceptable. Kende et al. (2021) described it as "the last [socially] acceptable prejudice in Europe" (p. 388). Accordingly, people might just not perceive statements made against such groups, as a rejection of general cultural diversity. Another special characteristic of these outgroups regards the portrayal of their cultural values and customs – or rather the absence of such a portrayal. As previously mentioned, in media and literature, Sinti & Roma are often portrayed in a stereotypical negative way focusing on poverty and delinquency (End, 2014). For many years, the German central council of Sinti & Roma has criticized this one-dimensional portrayal and recently research has begun to systematically document it (End, 2014). This documentation highlights, how media portrayals often give little attention to their unique cultural values and customs or to the positive aspects thereof. Utilizing the above mentioned quote from Lolliot (2013) we thus argue the following. As a result of this one-dimensional negative portrayal, majority group members may simply not know enough about the distinct cultural practices and values of Sinti & Roma, to (de)value them as a result of contact. They prevalently know a portrayal that is almost by definition negative and offers little interpretation freedom regarding the presented group characteristics.

A practical question follows: does the opposite of the above also hold true, in the sense that multiculturalism always emerges as a mediator of STE, in cases where primary and secondary outgroups do have salient cultural norms and customs that might be (de)valued as a consequence of contact? It would be compelling to say 'yes', since we indeed found such an STE in Intergroup Scenario A where both primary- (Muslims) and secondary outgroup (Refugees) evoke such cultural norms and custom. However, we warrant for caution. Empirical evidence for (negative) STE via multiculturalism, provided within this study, stands together with other empirical results (Henschel & Derksen, 2022; Henschel & Kötting,

2023) that all emerged from studying intergroup contexts situated in Germany, with refugees as an involved outgroup and intergroup settings were primary and secondary outgroup could be seen as partially overlapping (Kauff et al., 2023). Literature has shown that the debate concerning the refugee crisis within that national context heavily loads upon the general question how to handle cultural diversity, specifically concerning the (perceived) dissonance between the cultural values of the forced migrants and the host society (see e.g. Fuchs et al., 2020, pp. 60-61). Indeed, when looking at tables E1 and E2 in Appendix E in the supplementary material, we see that acceptance of diversity is always significantly associated with the attitude towards refugees. What differs between contexts is whether primary outgroup contact impacts the acceptance of diversity. Accordingly, the empirical evidence surrounding the emergence of multiculturalism as a mediator of (negative) STE is placed within an intergroup context, where attitudes towards the secondary outgroup are by definition strongly associated with the said construct. It is thus conceivable that the (non)emergence of STE via multiculturalism might fare differently in settings, where acceptance of diversity is less predictive of secondary outgroup attitudes. More research in such contexts should be conducted to investigate whether multiculturalism in fact always emerges as a mediator of STE once salient cultural norms and practices of the involved outgroups are perceived.

Discussing What Did not Work as Theorized

Let us now turn to the two mediators (attitude generalization and perceived primary outgroup threat), which did not operate as theorized. The fact that our SCM-driven approach to theorize on the emergence of various mediators did not work out as expected, can be interpreted in various ways. Firstly, one could argue that outgroups similarity in associated stereotypes does not determine the emergence of all the studied STE mediators. Even though the idea of a similarity gradient has long been proposed in STE literature, Ünver et al. (2022)

outlined that direct empirical tests are very scarce and the available empirical evidence does not form a coherent picture. Thus, the similarity gradient remains a difficult to prove theory.

Secondly, one might take the standpoint that similarity does in fact play a role, but was just not measured correctly. This makes reference to the difficulty of operationalizing said similarity, which very few studies even attempted. Specifically, regarding the approach taken in this paper, one might criticize that it does not take into account the person-specific subjectivity of stereotypes associated with the various outgroups as well as their perceived similarity. Two reasons lie behind this. Firstly, we did not have stereotype content assessments at the respondent level and thus turned to existing classifications in literature. Secondly, the way in which literature applied the said framework involves a comparison of average outgroup placements, seldom depicting also the divergence of individual respondents' ratings. The reader then sees an average placement but might not receive as much information regarding how much study respondents had subjectively varied in that placement. In the literature there exist similarity frameworks, which pay extra attention to the subjective element and might prove fruitful in future STE research: the differentiated threat approach (Meuleman et al., 2018) and the IPC model (Ebbeler, 2020). Given the very specific psychological measures that an application of theses frameworks would require, they have unfortunately not yet been established in mainstream STE research.

Limitations

A number of limitations apply to the study at hand, most of which have been discussed in STE literature (see e.g. Lolliot, 2013; Ünver et al., 2022; Vezzali et al., 2021). The first regards causality. As Vezzali et al. (2021) note, longitudinal study designs are superior to the frequently employed cross-sectional study designs in addressing the causal sequence problem. Since ethical complications arise when trying to experimentally

manipulate negative intergroup contact (see e.g. Vezzali et al., 2021), we favored a longitudinal study design.

The fact that we made use of survey data carries along a number of further limitations, many of which were discussed in the recent review articles by Vezzali et al. (2021) and Ünver et al. (2022). However, not all of them apply to the study at hand. To give an example, the omitted variable bias is discussed by both Ünver et al. (2022) and Vezzali et al. (2021). These authors predominantly criticized that many studies on STE do not control for contact with secondary outgroups. Our study does contain such a control measure. However, it is only assessed at the first survey wave and is a binary measure which does not contain information on the quality of secondary outgroup contact, thus limiting its capabilities as a control measure.

In addition, Lolliot (2013) mentions further methodological limitations which are common to STE research and likewise our study. Our inability to address them is rooted in the use of secondary survey data. The first of these methodological limitations concerns the spacing of time-intervals. In our longitudinal study, survey waves were administered 6 months apart. As Lolliot (2013) shows, the choice of time intervals between assessments could affect results from longitudinal survey studies in the sense that researchers might be unable to detect STE if time intervals are too long or too short. However, Lolliot (2013) also shows that a number of factors affect the choice of such time intervals and that there is no consensus in STE literature, what the optimal time interval in longitudinal studies should be. On this note, the temporal setting of our studies should be kept in mind when interpreting our results. This applies to the distance between survey waves but also the wider temporal setting. As Lolliot (2013) discusses, extraneous events occurring between survey waves in longitudinal STE studies should be kept in mind as a potential source of bias. This also applies to the current findings, given that data was collected during a time period where our

secondary outgroup refugees were a prominent topic in media and political discourse.

A last methodological limitation concerns the fact that many constructs were assessed with few items, which did not allow to ascertain measurement invariance across time. Future STE research employing longitudinal survey designs, should keep these methodological limitations in mind, especially studies that collect own survey data.

Conclusion

The current study highlights that negative STE can occur robustly across a variety of intergroup scenarios. However, it also shows that underlying mechanisms—in methodological terms mediators—might differ contextually based on outgroup characteristics. This had already been theorized in the literature, since it fitted well with incongruent results of previous case studies. We show that this incongruence persists when applying a robust longitudinal study design, that accounts for alternative explanations like secondary outgroup contact or differences in methodology and temporal setting. Contrary to previous suggestions, this does not only apply to mediators involving the outgroup (here: attitude generalization & perceived primary outgroup threat) but also to mediators involving the self (here: multiculturalism). We conclude from our findings that stereotype characteristics of the primary outgroup might determine whether primary outgroup contact even affects change in the self. For example, contact might not affect diversity beliefs when a stigmatized group is portrayed in such a one-dimensional negative fashion that their distinct cultural values and practices are not easily perceived—and consequently (de-)valued—by others. Such a (non-)occurrence of STE might be a blessing or a threat, based on contact valence. To this end, our findings align with the emerging notion that positive and negative STE operate via similar mechanisms. Three developments seem necessary to advance the understanding of STE: (1) more research on negative STE, (2) more longitudinal and

probably even experimental research, and (3) more comparative study designs spanning multiple intergroup contexts.

Chapter X: Discussion

The previous chapters VII to IX had covered the three studies conducted within this dissertation against the four formulated research objectives, relating to research gaps identified within STE literature. To re-familiarize the reader, the table below summarizes their interconnection. Afterwards the discussion focusses in-depth on an interpretation of results against each research gap before giving an overall verdict per investigated STE mediator and the proposed role of similarity in their contextual emergence. After discussing general limitations and consequential future directions for STE research, concluding remarks follow.

Table 12

Summarizing how the empirical results relate to the research objectives and research gaps.

Research Gap	**Research objective**	**Study/ studies**	**Hypotheses, related results & interpretation**
RG 1: STE research is plagued by the positivity bias prevalent in intergroup contact literature and there is a clear lack of engagement with STE from negative contact	**RO 1:** Conducting a study that investigates positive and negative STE within a large-enough sample resembling the general population within a context of ongoing intergroup conflicts or issues, while accounting for the confounding influence of secondary outgroup contact.	**Study 1:** *N*= 1553 German survey participants without migration background Sampled: 2015-16 **POG:** foreigners **SOG:** refugees	**H1)** Direct pos. & neg. STE from foreigners to refugees. **Direct positive STE:** *b* = .039* **Direct negative STE** *b* = -.064* **→ accepted** **H2a)** Pos. STE via the mediators AG, MC and IP. **Positive STE via AG:** *b* = .081* **Positive STE via MC:** *b* = .030* **→ partially accepted** **H2b)** Neg. STE via the mediators AG, MC and IP. **Negative STE via AG:** *b* = -.047* **Negative STE via MC:** *b* = -.020* **→ partially accepted** **H3)** The STE mediator AG is stronger than MC or IP. **Positive STE via AG > negative STE via AG:** *b* = .050* **Positive STE via MC > negative STE via MC:** *b* = -.027* **→ partially accepted** **Verdict vis-à-vis RG1:** Cross-sectional evidence for neg. STE, direct, via AG or MC but not via IP. Engagement with negative STE in a practically important context. Found neg. STEs mirrored their more often studied pos. counterparts. **Interpretation vis-à-vis STE literature:** Native German participants likely generalized from positive or negative contact experiences with foreigners to form attitudes towards the newly arriving refugees. Either directly, or by re-evaluating attitudes on foreigners specifically and cultural diversity in general.
RG 2: Knowledge on STE mediators comes mostly from cross-sectional research, focussing on a handful of the proposed	**RO 2:** Conduct longitudinal STE research, spanning at least three time points, while investigating mediators involving the self, the ingroup and	**Study 2:** *N*= 390 *(subset of study 1 sample)* 3 survey waves (6 months apart)	**H1)** Longitudinal evidence for direct neg. STE from foreigners to refugees. **Direct negative STE within the first time-lag:** *b* = -.138* **→ partially accepted** **H2)** Longitudinal evidence for neg. STE via the mediators AG, MC and PT. **Negative STE via AG:** *b* = -.010* **Negative STE via MC:** *b* = -.019* **→ partially accepted** **Verdict vis-à-vis RG2:** Longitudinal evidence for neg. STE, direct, via AG or MC but not PT. While the hypotheses focus on neg. STE, the same results

mediators often studied one-at-a-time	the outgroup simultaneously alongside attitude generalization	Sampled: 2015-16 **POG:** foreigners **SOG:** refugees	emerged for pos. STE. Thus furthering the engagement of the emergent neg. STE literature with the 'secondary transfer problem' and a systematic comparison of proposed STE processes against one-another. **Interpretation vis-à-vis STE literature:** A longitudinal replication of result patterns from study 1, further warranting an interpretation in terms of the theoreticall proposed processes. Additional empirical support for the previous interpretation that native German participants generalized from positive or negative contact experiences with foreigners to form attitudes towards refugees (directly or by re-evaluating foreigner-related attitudes and diversity-beliefs).
RG 3: It is unclear to what extent different mechanisms occur in different intergroup contexts, which is alluded to in theory but has not yet been subject to systematic empirical investigation	**RO 3:** Conduct multiple longitudinal studies, as specified within research objective two, within a comparative framework that minimizes study differences bar the various combinations of primary and secondary outgroups under investigation, while classifying outgroup similarity	**Study 3:** Setup as in study 2 but POG varied with different similarity to SOG by external classifications: **SOG:** refugees (*category stigma*; *medium warmth & low competence)* **Scenario A:** *N*= 385 **POG:** Muslims living in Germany (*category stigma*; *low-to-medium warmth & competence)* **Scenario B:** *N*= 396 **POG:** Sinti & Roma *(character stigma; low warmth & competence)*	**H1)** Longitudinal evidence for direct neg. STE from Muslims to refugees. No direct neg. STE between the first- (b = -.060) or second time-lag (b = -.129) **→ not accepted** **H2)** Longitudinal evidence for direct pos. STE from Muslims to refugees. **Direct positive STE within the first time-lag:** b = .104* **→ partially accepted** **H3)** Longitudinal evidence for negative STE via the mediators AG, MC and PT. **Negative STE via MC:** b = -.020* **→ partially accepted** **H4)** Longitudinal evidence for positive STE via the mediators AG, MC and PT. **Positive STE via MC:** b = -.017* **→ partially accepted** **H5)** Longitudinal evidence for direct neg. STE from Sinti & Roma to refugees. **Direct negative STE within the second time-lag:** b = -.170* **→ partially accepted** **H6)** Longitudinal evidence for direct pos. STE from Sinti & Roma to refugees. **Direct positive STE within the second time-lag:** b = .157* **→ partially accepted** **H7)** Longitudinal evidence for negative STE via AG, and PT but not MC. No significant mediation paths **→ not accepted** **H8)** Longitudinal evidence for positive STE via AG and PT but not MC. No significant mediation paths **→ not accepted** **H9)** STEs from scenario B < STEs from scenario A (higher outgroup similarity) **→ not accepted, as different patterns emerged** **Verdict vis-à-vis RG3:** Empirical evidence for positive STE (direct & via MC in Scenario A; only direct in Scenario B) and negative STE (via MC in Scenario A; direct in Scenario B). Results appear context-dependent but not exactly as the utilized external similarity-classification frameworks would suggest. **Interpretation vis-à-vis STE literature:** Both intergroup scenarios revealed *some kind of* empirical evidence for STE (direct in A; via MC in B). The way in which STE emerged differed between both scenarios and compared to the scenario covered in the previous study 2. Concluding, and congruent with contemporary research, the emergence of STE appears context dependent. Whether that reflects a simply instable nature of STE (as recent research proposes) or a similarity-dependent emergence, remains unclear. While current results do not conform to expectations based on external similarity classifications (the SCM & GTS as utilized by previous literature), subjective similarity classifications by participants across a larger number of compared intergroup scenarios might help answer this question. The IPC model proposes an intermediate interpretation and should be experimentally explored.
	RO 4: Investigating whether positive and negative STE occur via the same processes but in opposite direction.	Result patterns across the three studies in combination.	**Within each study, the way in which empirical evidence for neg. STE does or does not occur, almost always mirrors the way in which empirical evidence pos. STE does or does not occur (see study 3 H2 for an exception).** **Verdict vis-à-vis RG4:** Results conform with a suspicion voiced by previous STE research: the empirical results suggest that positive and negative STE appear to emerge via the same processes but in opposite direction. **Interpretation vis-à-vis STE literature:** The harmful effects of negative STE within a given intergroup scenario could in theory be counteracted by fostering

			positive contact with the same involved primary outgroup and the resulting positive STE. Doing the same but involving a different primary outgroup might not be as effective given contextual instability of involved STE processes.

Notes. Neg. = negative; pos. = positive; POG = primary outgroup; SOG = secondary outgroup; AG = attitude generalization; MC = Multiculturalism; PT = primary outgroup threat; * = statistically significant. SCM= stereotype content model; GTS = Goffmans typology of social stigma. For brevity only the coefficients of statistically signficiant regression paths are presented below their related hypotheses.

Achievements against RG1

The first research gap that had been identified in STE literature was the positivity bias: far more studes covered STE from positive contact compared to negative contact. To amend this fact, as well as some other frequently occurring shortcomings relating to sample size, -origin and control measures, a first research objective had been formulated: ‚*Conducting a study that investigates positive and negative STE within a large-enough sample resembling the general population within a context of ongoing intergroup conflicts or issues, while accounting for the confounding influence of secondary outgroup contact.*'. It was tackled within study 1. The reader should see achieving research objective one as mere first step towards closing research gap one, a step guided by best practices which shall hopefully be extended in future STE research. Of note, all conducted studies infact tackle the positivity bias.

To what extent could research objective one be achieved

The following section highlights how study 1 fulfills this objective. Fistly, the cross-sectional study *investigated positive and negative STE* (directly or via the three mediators attitude generalization, multiculturalism and ingroup pride). Secondly, the study utilized a sample of *N*=1553 Germans without migration background which can be considered *large-enough* against the conducted analyses, and also *resembling the general population* as it was drawn from the German General Social Survey programme ALLBUS. Thirdly, the study setting was *a context of ongoing intergroup conflicts or issues* as outlined in Chapter VI, whereby the primary outgroup were foreigners and the secondary outgroup were refugees.

Lastly, *the confounding influence of secondary outgroup contact* was accounted for as prior contact with refugees was measured. Achieving research objective one and conducting a study with these above characteristics, helps increase the robustness with which one may draw conclusions from the empirical results: firstly, the interplay of both valences of intergroup contact as well as several hypothesized STE processes can be studied; secondly, the sample size is large enough to remedy concerns of statistical power; thirdly, the contextual setting is more natural and of partical importance; fourthly, concerns on the confounding effect of secondary outgroup contact may be relieved.

Uncovereved empirical evidence for STE

Having established the importance- and achievement of these study characteristics within study 1, let us establish to what extent such a robustly designed study could uncover empirical evidence for STE. As Table 12 informs, the hypothesized direct STEs indeed reflected in the empirical results. The hypothesized indirect STEs emerged for the mediators attitude generalization and multiculturalism but not for the mediator ingroup pride. As hypothesized, Attitude generalization proved to be a stronger mediator of STE than Multiculturalism. Interestingly (though outside of the specified hypotheses) the significance patterns of results pertaining to negative STE generally mirrored that relating to positive STE.

Of note, this evidence is limited by several shortcomings of study 1. Firstly, the utilized single item measures warrant potential concerns for measurement validity. Secondly concerns for omitted variable bias may be put forth (although robustness analyses including further control variables lead to the same conclusions as previously). Thirdly, shared variance bias may be named, as applicable to measures of primary and secondary outgroup attitude (although the latter was measured as a latent construct). Lastly, and most importantly the cross-sectional nature of the study means that conclusions remain speculative regarding the temporal sequence behind the uncovered interrelations.

Practical and theoretical conclusions drawn

There are several insights that STE literature gains from these results. Firstly, and most importantly that evidence for positive and negative STE could be uncovered by a study adhering to the robustness critertia outlined in research objective one. That empirical evidence for STE emerged from such a study lends credibility to the pheonomen as such. Atleast against the covered potential points of concern and in this specific instance. Still, more research fulfilling these criteria needs to be conducted to corroborate it. Atlhough, we already see from Table 12 that the other conducted studies (which likewise adhere to those criteria) all do uncover some empirical evidence for the phenomenon.

Secondly, the interplay of positive and negative STE – directly and indirectly via the parallel processed of attitude generalization and multiculturalism – could be investigated for the first time. Notably the first empirical evidence for Multiculturalism as a mediator of negative STE emerged. Thereby it could be clearly distinguished against the ingroup-focused part of the deprovincialization hypothesis.

Thirdly, empirical evidence emerged in support of the suspicion of earlier STE researchers (see e.g. Vezzali et al., 2021) that positive and negative STE seem to work via these same processes but in opposite directions. That entails important theoretical and practical implications. Notably, that both forms of STE could cancel each other out and that one might foster positive contact with a primary outgroup to counteract the generalizing potential of negative contact via the same processes. As visible from Table 12 all other studies from this dissertation appear congruent with this idea. We shall discuss it more later on.

Fourthly, an important implication for STE literature lies in what was not found: STE via ingroup pride. Two interpretations are possible, though both lead to the conclusion that ingroup pride as an instrumentalization of the ingroup reappraisal process (Pettigrew, 1997)

might not be an optimal mediator candidate for studying processes underlying negative STE across a large extent of intergroup scenarios. Coming back to our non-finding from study 1, it might either reflect the specific meaning of national pride against the backdrop of German history, or it could signify a general lack of theoretical underpinning of this specific instrumentalization of Pettigrew's process of ingroup reappraisal, hinted at in earlier literature (see Ebbeler, 2020, p. 36 for an overview). Given that the research conducted within this dissertation was placed within the German national context, the STE mediator ingroup pride was thus not further investigated in subsequent studies.

Achievements against RG2

A major limitation that could not be overcome within research objective one and the associated study 1 was the cross-sectional nature of the obtained insights. The very same limitation applies to the majority of STE literature and finds mention in the second research gap: knowledge on STE mediators comes mostly from cross-sectional research, focussing on a handful of the proposed mediators often studied one-at-a-time. This applies especially to research on negative STE, where only a single longitudinal study existed at the outset of this dissertation. To amend this a second research objective had been formulated and tackled in study 2: ‚*Conduct longitudinal STE research, spanning at least three time points, while investigating mediators involving the self and the outgroup simultaneously alongside attitude generalization (e.g. multiculturalism and primary outgroup threat)* '. It should be noted that the robustness criteria achieved in study 1 and against the first research objective were continuously applied in all subsequent studies.

To what extent could research objective two be achieved

The following section highlights how study 2 fulfills this objective. As Table 12 informs study 2 was set against the very same contextual background as study 1, involving a

subsample of *N*= 390 participants from the ALLBUS who got recruited into the GESIS panel. As power analyses indicated this reduced sample size was still robustly large enough in terms of statistical power. Very similar measures were utilized and the same control measure for secondary outgroup contact. The outset of study 2 lies roughly 3 months after study 1. I shall specify two points that set study two apart from study one and thereby also fulfil research objective two. Firstly, and most importantly study 2 was longitudinal in nature, with three time points situated 6 months apart. Thus allowing for a longitudinal investigation of STE and the theorized mediating processes. Secondly, study two investigated three proposed STE mediators simulataneously for both positive and negative STE: attitude generalization, multiculturalism (a mediator involving the self) and primary outgroup threat (a mediator involving the outhgroup). Concluding, characteristics specified in research objective two are met by study 2. Additionally, it covers points previously mentioned in research objective one, thus likewise reducing the positivity bias in STE research and allowing in essence a longitudinal replication of the STE processes uncovered in study one.

Uncovereved empirical evidence for STE

Indeed, the emergent empirical evidence could be summarized as a longitudinal replication of insights from study one. Again, as hypothesized direct positive and negative STE effects emerged, as did mediating effects via attitude generalization and multiculturalism. Contrary to expectations but congruent with previous research (see e.g. Mähönen & Jasinskaja-Lahti, 2016), no mediating effects via primary outgroup threat emerged. Generally, one can summarize: the empirical evidence for positive and negative STE found in study one persisted when conducting the kind of robust longitudinal study outlined in research goal two.

As applicable to the previously discussed study 1, several limitations apply to the interpretation of the above results. Firstly, some of the limtations mentioned previously

perstist. Notably the use of single item measures and the resulting concern for measurement validity, concerns for omitted variable bias and the issue of shared variance bias. Contraty to study one, a conceptual distinction of primary and secondary outgroup labels was not possible in study two, although one could argue that the understanding presented in study 1 might have remained the same over the timeframe that participants of study two (themselves a subsample of study 1 participants) answered the survey items related to study 2. Lastly, although a longitudinal research design allows a better approach of the causal sequence problem, an experimental setup would have been less limited regarding causality.

Practical and theoretical conclusions drawn

There are several insights that STE literature gains from these results. Firstly, and most importantly, the longitudinal nature of study two enabled to surpass the major limitation behind the cross-sectional interrelations provided in study 1: that the causal sequence assumed within the interpretation of these results could be replicated in theorized order. It should be noted that study 2 was at the time of it's publication – to my knowledge – only the second ever longitudinal published study investigating negative STE. Thereby contributing to a major shortcoming of previous negative STE research.

Secondly, one can conclude that the previously distinguished processes via attitude generalization and multiculturalism seem to be independent from any hypothesized STEs via primary outgroup threat (that in turn failed to emerge). Especially regarding negative STE via attitude generalization, one could have argued that the notion of threat could play a role in forming more negative outgroup attitudes. Likewise, one could have argued that feelings of threat could have been involved in devaluing the benefits of cultural diversity, weighing the absence of harm higher than the morality of peaceful and mutually beneficial coexistence. However, results from study 2 indicate that threat plays a different role. While primary outgroup contact seemed to have ilicited a shift in perceived primary outgroup threat, this did

not appear to generalize to uninvolved secondary outgroups. Consequentially, STE research could either dismiss threat as a mediator, or it could realize the contextual nature of outgroup related threats, as e.g. the intergrated threat approach (Meuleman et al., 2018) points out. At any rate, the results of study 2 alone do not seem enough to make a definite judgement. If anything the last point highlights the need to explore, whether and how much characteristics of the involved intergroup context and groups may matter. Thus, while shining more light on some issues, the results from study two also highlight the need for more research, since alternative explanations do exist for the associated (non) findings.

Achievements against RG3

The need for context comparative research is exactly what had been identified in the third research gap. Against it, research objective three had been formulated: ‚*Conduct multiple longitudinal studies, as specified within research objective two, within a comparative framework that minimizes study differences bar the various combinations of primary and secondary outgroups under investigation, while classifying outgroup similarity.*' Study 3 was conducted against this research objective. It contains the robustness criteria outlined within the first two research objectives but distinguishes itself by putting them into a context-comparative framework.

To what extent could research objective three be achieved

The following section highlights how exactly study 3 fulfills the above and third research objective. As Table 12 informs study 3 was similar in most characteristics to study 2, involving a subsample of German participants from the ALLBUS who got recruited into the GESIS panel. As was the case for study 1 power analyses indicated a robustly large enough sample size in terms of statistical power. Due to a split sample design within the GESIS panel, all utilized measures were conceptually the same as in study 2, as was the time

frame and longitudinal setup of the three survey waves. Yet study 3 differs on two points, which fulfil research objective three. Firstly, the above mentioned split sample design allowed to *conduct multiple longitudinal studies, as specified within research objective two, within a comparative framework that minimizes study differences except for the various combinations of primary and secondary outgroups* whereby only the primary outgroup varied to be either 'Muslims living in Germany' (Scenario A; *N*= 385) or 'Sinti & Roma' (Scenario B; *N*= 396). Secondly, a framework for *classifying outgroup similarity* was utilized. This involved two external frameworks utilized in past STE research: the Stereotype Content Model which classifies simiarlity on the dimensions warmth and competence and Goffmans typology of social stigma that distinguishes by the reason for outgroup derogation. Thereby 'Muslims living in Germany' – the primary outgroup in Scenario A – were classified as category stigma (derogated due to ethno-religious category membership) and low-to-medium on warmth and competence. Contrastingly, 'Sinti & Roma' – the primary outgroup in Scenario B – were classified as character stigma (derogated due to perceived character flaws) and low on warmth and competence. The secondary outgroup 'Refugees' on the other hand was classied as more similar to 'Muslims living in Germany' regarding the classification as category stigma, as medium on warmth and low on competence. The above mentioned unique characteristics of study 3 allowed to gather first empirical evidence regarding the idea that the processes behind STE vary by intergroup context and by the similarity of the involved outgroups in terms of their stereotype content.

Uncovereved empirical evidence for STE

Indeed, the emergent empirical evidence varied between the two investigated primary outgroups and was also different to what had been uncovered in study 2. Still for each scenario there was some kind of empirical evidence for positive and negative STE. In Scenario A (POG: 'Muslims living in Germany') there was direct positive STE, and positive

as well as negative STE via Multiculturalism. In Scenario B (POG: 'Sinti & Roma') there was direct positive and negative STE within the second time-lag. This result pattern departs from the hypotheses explicated in Table 12. While it is congruent with a context-dependent emergence of STE, it is not as hypothesized with regards to the idea that mediators appear contextual by outgroup similarity.

Much of the limitations previously noted regarding study 2, also apply against interpretations from the above results due to similar study setup. This includes the use of single item measures and the resulting concern for measurement validity, concerns for omitted variable bias, and the issue of shared variance bias. Relatedly, and similar to study 2, an experimental setup would have been less limited regarding causality. A new limitation applies to the utilized similarity classification. The utilized measure stems from external similarity frameworks, which do not take into account the subjective element and individual differences in perceiving stereotype content and similarity. On that note future STE research might want to apply participant-supplied measures within frameworks that do so, like e.g. the differentiated threat approach (Meuleman et al., 2018) and the IPC model (Ebbeler, 2020).

Practical and theoretical conclusions drawn

There are several insights that STE literature gains from these results. Firstly, the results pattern – comparing results from Scenario A and B with another and with the results from study 2 – implies that the way in which positive and negative STE may emerge is context specific. Secondly, the above results remain largely congruent with the idea that positive and negative STE work via the same processes though in opposite direction. Thirdly, the results give important insights on Multiculturalism as a mediator of STE with potential implications for the whole category of 'mediators involving the self'. While Vezzali et al. (2021) had theorized that mediators involving the self should be more universally applicable across contextual settings since they do not hinge on specific in- or outgroup characteristics,

Lolliot had argued that Multiculturalism "may only be useful when considering social groups that have salient or recognized cultural practices" (Lolliot et al., 2013, p. 91). This had been reflected in multiple previous studies conducted by Lolliot (2013). Likewise, it reflects in the results of study 3. Here the mediator does not emerge for the primary outgroup Sinti & Roma, as their cultural values and practices are only very superficially portrayed and engaged with. Given the small amount of studies conducted, more research seems necessary before making a definite conclusion. To further investigate whether the opposite would also hold true and multiculturalism would always emerge when primary and secondary outgroups do have salient cultural norms and customs that might be (de)valued as a consequence of contact, more research seems necessary. Particularly in settings where attitudes towards the secondary outgroup are by definition strongly associated with views on diversity.

Lastly, the results of study 3 do not permit a concise conclusion regarding the supposed role of similarity in the emergence of STE and its processes. While empirical results are incongruent with the similarity-related hypotheses there exist multiple alternative interpretations. Firstly, one could argue that the role of similarity does apply as hypothesized but that the utilized external classifaction frameworks are insufficiently picking up the individual differences in perceived similarity. Secondly, one might also say that similarity does not play a role in the emergence of STE processes and that the effect is simply unstable or dependent on unrelated factors. The stance of STE as unstable in nature is e.g. taken by a study that got published in parallel to study 2 and after the writing of study 3 (Kauff et al., 2023). Lastly, one might also argue that similarity does play a role in the emergence of STE and its processes but does so in a nonlinear fashion or in combination with further contextual factors. The latter case is for example assumed by theoretical models such as the IPC model (Ebbeler, 2020) though this model has only yet been theorized for attitude generalization. At any rate, more research would need to be conducted before further conclusions can be made.

Achievements against research objective 4

Besides the previously covered research gaps, I had also noted the yet unanswered question in STE literature, whether positive and negative STE would work via the same processes but in opposite directions. This idea had been propagated by earlier STE research (see e.g. Vezzali et al., 2021) but not yet been extensively investigated. To this end the fourth research objective had been formulated: , *Investigating whether positive and negative STE occur via the same processes but in opposite direction.*'. On the basis of the (albeit limited) number of intergroup scenarios investigated in this dissertation, a pre-emtive statement can be made. Apart from a single direct positive STE that did not reflect in a direct negative STE within Scenario A of study 3, the significance pattern of results pertaining to positive STE always mirrored that of results pertaining to negative STE (albeit with opposingly valenced effects). If positive and negative STE indeed work via the same processes but in opposition, this implies that fostering positive contact could be a strategy to counteract the very same negative generalizations that prior negative contact with the same primary outgroup might have elicited. Given contextual instability of STE, fostering positive contact with another primary outgroup might however not necessarily initiate the same positive generalizing processes and might be less beneficial.

Insights regarding the STE mediator attitude generalization

Above we have discussed and established to what extent the studies covered within this dissertation were able to tackle the established research objectives against the established research gaps in STE literature. We shall now turn in more detail to the substantive conclusions that can be made against the investigated STE mediators and their theorized contextual emergence by outgroup similarity. This section starts with attitude generalization. The empirical evidence for positive and negative STE via attitude generalization that emerged from cross-sectional study 1 and longitudinal study 2 stands in congruence with the

many previous STE studies that found empirical evidence for attitude generalization. For the first time however longitudinal evidence for simultaneous positive and negative attitude generalization was generated. The two conducted studies further establish it as an independent STE mediator compared to multiculturalism and as the stronger mediator of both. Surprisingly, STE via attitude generalization did not emerge in the longitudinal study 3 that replicated study 2 but varied the primary outgroup to be Muslims in scenario A and Sinti & Roma in scenario B. Does that speak against attitude generalization as an STE mediator? I argue here: no, it only highlights that attitude generalization (as other STE processes) appears contextually. While we cannot decisively tie this to outgroup similarity, as theory has posed, we might tie it to specific aspects of the covered intergroup scenario. We shall look at both scenarios from study 3 in more detail and try to theorize which aspects that might be.

Interestingly in Scenario A, the regression paths between T1 positive- and negative primary outgroup contact and T2 primary outgroup attitude were significant. The reason that STE via attitude generalization failed to occur, is because the association between primary outgroup attitude at T2 and secondary outgroup attitude at T3 did not bear significance. Interestingly, such an association did emerge at the previous time-lag. From this we might deduce two insights. First, that STE via attitude generalization did not emerge because people did not generalize from altered primary outgroup attitude to secondary outgroup attitude. Second, the unwillingness to generalize might have just recently started, potentially due to a shifted view on whether such a generalization is appropriate in the given intergroup scenario. The latter makes sense, given that refugees were an outgroup that entered the stage of intergroup relations rather recently. While people might have initially noticed similarities between this group and Muslims that already lived in Germany (e.g. a shared religion), they might have later realized that both groups differ on other aspects. Alternatively, they might have also decided that generalizations between both groups are conceptually logical, but not

socially appropriate. These two interpretations do however have to be taken with a grain of salt, since they are speculative in nature. Also, alternative methodological explanations could be made as to why the regression path from primary- to secondary outgroup attitude differs in significance between the investigated time-lags.

Let us now turn to scenario B of study 3 and discern why STE via attitude generalization did not emerge in said scenario, where the primary outgroup were Sinti & Roma. Here the pattern observed from scenario A largely repeats, meaning attitude generalization does not appear since primary outgroup attitudes (themselves associated with primary outgroup contact) do not impact secondary outgroup attitudes. However, two differences compared to scenario A are apparent. Firstly, the lacking association between primary- and secondary outgroup attitudes occur across all covered time-points. Secondly, within the first time-lag only negative, but not positive primary outgroup contact was associated with primary outgroup attitudes. Both peculiarities might be explained by characteristics of the involved primary outgroup 'Sinti & Roma'. To begin with, the consistently lacking generalization from primary- to secondary outgroup attitudes can be explained by the fact that prejudice towards Sinti & Roma takes on a peculiar from in the sense that it is 1) widespread (c.f. End, 2014, p. 36), 2) stereotypes are largely crime-related with only superficial engagement on actual outgroup related cultural practices (see e.g. Kende et al., 2021) and that it is 3) largely socially acceptable (c.f. Kende et al., 2021, p. 388). Especially the latter fact might account for a lack of attitude generalization to outgroups such as refugees, where the populace was likely comparatively more polarized regarding outgroup evaluation and also the question whether outgroup derogation is socially acceptable. Lastly, there are two potential explanations for the missing link between positive primary outgroup contact and primary outgroup attitudes at the first time-lag. This could firstly be rooted in the widespread social acceptance of prejudice against Sinti & Roma. If contact with a member of

this outgroup takes on positive form, people might see this as an exception. They migh note that in rare cases members of this outgroup can be 'good' but still be wary of members of the outgroup in general. In the words of Pettigrew (2009): primary transfer (from an individual outgroup member to the outgroup as a whole) might not occur. Another, more methodological, explanation could point at the left-skewed distribution of positive contact with Sinti & Roma: it might have simply been such a rare occurance at T1, that associations do not reach significance.

Concluding, attitude generalization could be shown to be a mediator of both positive and negative STE and also a mediator independent from, and stronger than multiculturalism. However, it is also apparently a contextually unstable mediator. Future STE research should further test the boundary conditions for its appearance, if and how that might be tied to characteristics of the studied outgroup, their stereotype content and perceived similarities.

Insights regarding the STE mediator Multiculturalism

Multiculturalism as an STE mediator emerged from all the investigated intergroup scenarios, with the exception of intergroup scenario B of study 3. On first glance this does not concur with the statement of Vezzali et al. (2021) that STE mediators involving the self should apply regardless of the covered intergroup scenario, since primary outgroup contact affects the view on outgroups in general. However, when looking more closely at the results of scenario B in study 3 we see that said results are infact not incongruent with that statement. The reason is that STE via multiculturalism is absent in scenario B because an association between primary outgroup contact and acceptance of diversity (which Vezzali et al. appear to presuppose in their statement) is missing. While the statement of Vezzali et al. (2021) does remain valid in light of said results, we might want to add to it: STE via mediators involving the self, might however be absent in intergroup scenarios, where primary outgroup contact does not induce a change in worldview or characteristics of the self. Although the current

data does not allow an empricial investigation of the reason for this absence in scenario B of study 3, we can speculate that characteristics specific to the covered primary outgroup might account to it. Relatedly, we might also speculate that characteristics of the secondary outgroup, that remain the same throughout all investigated intergroup scenario, could account for the persistent association between acceptance of diversity and secondary outgroup attitudes. Notably, one should recall that during the refugee crisis, the debate regarding refugees was heavily intervowen with the question on how to deal with the increased cultural diversity that was presumed to ensue from this kind of immigration (see e.g. Fuchs et al., 2020, pp. 60-61). Accordingly, future research attempting to test the limits of multiculturalism as an STE mediator should do well in picking a diverse range of intergroup scenarios, including choices of secondary outgroups, which might not appear prototypical in people's conception of what is culturally diverse.

In short, while the current findings do stress that multiculturalism can be an important and applicable STE mediator, they also hint at boundary conditions where STE via multiculturalism might not occur. Ultimately, more STE research involving multiculturalism seems warranted to explore the boundary conditions of its applicability.

Insights regarding the STE mediator Threat

Primary outgroup threat as an STE mediator was covered in study 2 as well as intergroup scenario A and intergroup scenario B of study 3. In three cases, a mediating effect from primary outgroup contact to primary outgroup threat to secondary outgroup attitude was absent. This speaks against the potential of threat as mediator of positive or negative STE, a finding that resonates from some (Mähönen & Jasinskaja-Lahti, 2016) though not all (Zingora & Graf, 2019) prior studies. Let us thus look in more detail at the (lack of) threat-related findings in studies 2 and 3 to discern which parts of the expected mediational association did not emerge.

Interestingly enough, the first part of the expected mediational effect nearly always emerges (an exception is a lacking association regarding positive contact and the first time-lag in scenario A of study 3). In simpler terms, the results indicate that primary outgroup contact did impact the perception of threat from said outgroup, just like literature theorized (see e.g. Aberson, 2015, as cited in Zingora & Graf, 2019). This empirical evidence resonates with the first part of the mediational effect that Zingora & Graf (2019) describe when they highlight the theoretical underpinning that threat: "mediated the link between contact with the primary outgroup and attitudes toward a secondary outgroup" (Zingora & Graf, 2019, p. 7). However, what we could not observe in the investigated intergroup scenarios is the second part of this statement, that concerns a generalization of threat alongside the assumed topological networks of similar outgroup related threats. While the lack of such a threat generalization might prompt the reader to dismiss the potential of STE via threat, I warrant for caution. Threat is an under-researched STE mediator, a problem that is tackled but in no way rectified by the additional coverage in the three above mentioned intergroup scenarios. As those three scenarios all have the same secondary outgroup, any observed threat generalizations occur against this secondary outgroup, and any peculiarities that it might have. As we have covered before, public debate surrounding refugees was heavily intertwined with the question of how to deal with cultural diversity (see e.g. Fuchs et al., 2020, pp. 60-61). This does reflect in the study results (note how regression paths from acceptance of diversity to attitudes towards refugees appear always statistically significant) and could account for the lack of associations between outgroup-specific threat conceptions and secondary outgroup attitudes. In line with this thought, we do see indication for a different kind of threat generalization in scenario B of study 3 and thereby in a scenario where the outgroup to which one generalized are not Refugees. This indication comes in the form of statistically significant regression paths between contact with Refugees and perceived

threat from Sinti & Roma at the first time-lag and at the second time-lage (see table E2 in Appendix E). Two things should be noted about these results. Firstly, the utilized measure of contact does not allow to discern whether the generalization involves positive or negative contact, although the direction of associations indicates that it is likely positive contact reducing threat. Secondly, the nature of this generalization differs from what either Zingora & Graf (2019) or Mähönen & Jasinskaja-Lahti (2016) had described. The latter point resonates with the previous observation that STE literature diverges in the exact operationalization of STE via threat and underscores that future research into this avenue would benefit from a more exact definition. Concludingly, STE research might still benefit from researching primary outgroup threat as an STE mediatior and should probably attempt this within intergroup scenarios covering a different secondary outgroup. Nonetheless, the current results indicate that STE via threat generalization likely does not apply to the specific chosen intergroup settings. Future STE research should investigate threat as a mediator in a broader number of intergroup contexts to determine whether and when it might apply. Thereby it should be particularly important to cover a broader array of threat dimensions compared to the current studies. Next to symbolic and material realistic threat, as currently measured, one could for example also distinguish perceived security-related realistic threat.

Insights regarding the STE mediator Ingroup pride

Ingroup pride as an STE mediator was covered in the first, cross-sectional study of this dissertation. In line with previous ambivalence in STE literature, said study did not find any empirical evidence for STE via this specific operationalization of ingroup reappraisal. While this lack of empricial findings does resonate with previous (e.g. Pettigrew, 2009) as well as contemporary (e.g. Kauff et al., 2023) findings, certain limitations should be kept in mind, such as the crudeness of the employed single-item measure, the fact that pride was only assessed regarding the national ingroup but not other types of ingroups that contacting

individuals might have perceived, and the potentially problematic connotation of national pride in the German context. Thus a dismissal of ingroup pride as a potential STE mediator does not appear so clear cut as it initially might seem. Future STE research should thus offer a more clear-cut operationalization than what was employed here and it might serve well in posing the question who or what might constitute the ingroup for the contacting individual rather than assuming that the national group is by definition the ingroup that comes to mind when interacting with a minority outgroup.

Insights regarding a contextual, similarity based emergence of STE processes

Looking at the hypotheses regarding the applicability of STE mediators by outgroup similarity, it has to be noted that certain effects appeared in the predicted way, while others did not. Generally speaking, there are roughly three possible directions of interpretation, each with their own theoretical consequences: 1) similarity does not exert the theorized effect regarding the applicability of the studied mediators, 2) individual differences, not measured in the current approach play a role, 3) similarity does exert the theorized effect on mediator applicability but not in a linear fashion. Those three interpretations are not necessarily mutually exclusive, for example the reader will note that interpretations three and two could potentially apply simultaneously. The three interpretations will be covered in the next three passages in enumerated order. Each paragraph shall end with concrete considerations for future STE research that wishes to explore the effect of outgroup similarity on the emergence of STE or the applicability of the covered mediators.

Similarity does not exert the theorized effect on mediator applicability

A first explanation attempt would be that outgroup similarity simply does not exert the theorized effect on STE and its mediators. An argument for this idea is that, as previously described in chapter IV, (published) studies which conclude an effect of similarity often

simply state that involved outgroups, were or were not similar, without empirically backing up this claim. What stands against this interpretation is research by Lolliot (2013), who conducted multiple studies on the similarity gradient finding support across diverse intergroup contexts, with external as well as participant-supplied similarity ratings. However, a counter argument to this could be that Lolliot's (2013) research only incorporated positive STE and failing to include measures of negative contact, that as we know might happen independently from any assessed positive contact (see e.g. Barlow et al., 2012), distorts the empirical results via omitted variable bias.

Individual differences, not measured in the current approach, play a role

Another conceivable stance is that current results are not as theorized, because the current approach of capturing outgroup similarity does not take into account individual differences in perceived similarity. Any conception of similarity supplied within this dissertation related to a global similarity measure via external classification systems as opposed to a superior individual-level assessment (Lolliot, 2013). We have established that a study by Lolliot (2013), found congruence between a global external- and an individual-level similarity measure. However, this does not necessarily have to always be the case and, and as both Ünver et al. (2022) and Vezzali et al. (2021) describe, it is very likely that there is considerable individual-level variability in outgroup similarity conceptions, which a global measure misses. Within the current dissertation, data availability made it not possible to implement individual-level similarity measures. However, future research is urged to include such measures to allow a more direct assessment of whether the contextual occurrence of STE and its underlying processes that emerged here is systematically related to patterns of perceived outgroup similarity. Several possibilities exist to facilitate such an assessment. Firstly, researchers might supply study participants with direct items to rate the similarity of

the involved outgroups. Secondly, a subjective classification in terms of similarity frameworks such as the SCM could be filled out by each respondent.

Similarity does not exert a linear effect on mediator applicability

A third conceivable stance regarding the theory-incongruent results from study 3 is the notion that similarity does in fact play a role regarding mediator applicability but just does not exert a linear effect. Such a working of similarity is described in the IPC model (Ebbeler, 2020) that was originally coined to describe the effect of outgroup similarity on the emergence of attitude generalization. The reader shall see that individual differences (described in the previous pargraph) are likewise taken into account within this model.

The IPC model, developed by Ebbeler (2020), speaks of further steps and influencing factors that might determine the emergence of attitude generalization beyond the conception of group similarity alone. A structural representation might be found in Figure 25 of Ebbeler's (2020) dissertation. For illustrative purposes, I here provide a shortly paraphrased example how according to the IPC model, high perceived group similarity might either elicit a generalizing effect in the expected direction, no generalization at all or even a generalizing effect in opposite direction, dependent on factors beyond the similarity rating itself. High perceived similarity might implicitly lead to generalization in the expected direction if consistent stereotypes are activated, but a contrast effect in opposite direction might happen if inconsistent stereotypes are implicitly recalled. Explicitly, people might further ask themselves to what extent it is socially acceptable to generalize, which might result in little correction (thereby maintaining generalization in the expected evaluative direction), a moderate degree of correction that cancels out the expected generalizing attitudinal shift (so that no generalization at all happens) or a large degree of correction (resulting in evaluative generalization into opposite direction). What the IPC model proposed regarding the generalization of outgroup attitudes could happen similarly with regards to other outgroup

related attributes, which have also been theorized to be represented organized by similarity perceptions (see e.g. Lolliot, 2013, pp. 35-36) and have been proposed as STE mediators. Regarding future STE research wishing to explore this, an experimental setup could prove most doable. This would also align with the call for more experimental STE research (see e.g. Kauff et al., 2023).

Incongruencies with literature

When comparing the empirical results obtained throughout this dissertation with STE literature, several incongruences become apparent: no evidence for STE via ingroup reappraisal in study 1, no evidence for STE via attitude generalization in study 3, no evidence for STE via multiculturalism in Scenario B of study 3 and lastly, the incongruences that emerge when comparing the results of study 3 against those from conceptually similar research by Kauff et al. (2023). One may speculate about the reasons behind these incongruences and theoretical as well as methodological arguments may be made.

On a theoretical note, incongruent results obtained across different intergroup contexts may be explained by the contextually instable nature of whether and how exaclty STE occurs. Intergroup contexts may thereby differ concerning the choice of primary and secondary outgroups, characteristics of the study participants or the temporal setting.

On the other hand, a methodological interpretation would point to the differences in operationalization between various studies. To give some examples, Kauff et al. (2023) utilized latent variables in their longitudinal mediation models and were better equipped to do so in terms of sample size and statistical power. The latter two points, as well as methodological comparability between studies 2 and 3 of this disseration, were reasons against utilizing latent varibles within the longitudinal mediation models from studies 2 and 3 where the sample sizes were about half as large. Further methodological differences between STE studies may include the availability of a measure of secondary outgroup contact (e.g.

absent in studies 1 and 2 by Kauff et al., 2023 but present in this disseration's studies), or the conceptual question of freely estimating time-lag-equivalent paths versus constraining them to be time-lag equivalent.

If future STE research answers the call for more non-cross-sectional STE research, made by both Kauff et al. (2023) and myself, it would be beneficial to establish clear best practices for longitudinal analysis of the STE and its mediators. In methodological aspects such as the use of latent variables, future research should follow the parctices employed by Kauff et al. (2023). However, secondary outgroup contact should be controlled for, as done in studies 1 to 3 from this dissertation, whereby one might improve such control measures in terms of incorporating valence, frequency, and temporal repetition. Indeed, the "adequate analysis of longitudinal contact data" (Friehs, 2023, para. 1) has been named among aspects of contact research that need more attention, whose pursuit might prove "very challenging for individual researchers as it requires considerable expertise and resources" (Friehs, 2023, para. 2) and but could be "best addressed using Big Team Science" (Friehs, 2023, para. 2).

Limitations

As hinted at in the previous paragraph, several limitations exist with regards to the results emergent from this dissertation, which limit the interpretations that might be drawn. These limitations can be divided into methodological limitations and conceptual limitations. General methodological limitations pertaining to the difficulty of analyzing longitudinal contact data have already been laid out in the previous paragraph. Methodological limitations specific to each conducted study had been summarized within the first three paragraphs of this chapter. The current chapter thus focusses on conceptual limitations pertaining to study designs, and concept definitions.

Conceptual limitations

Relating to those limitations that are rooted in conceptual study aspects, one has to firstly mention the potentially overlapping understanding of group labels such as 'Foreigners living in Germany' and 'Refugees' or between 'Muslims living in Germany' and 'Refugees'. Closer inspection of the related survey items shows that a clear distinction is drawn between groups that are already living (here) in Germany and Refugees who have newly arrived. However, the question is whether the individual survey respondent also conceived such a distinction when answering the survey items. Study 1 aleviated this concern to some degree due to an analysis of open answers to a question on the individual conception of the group label 'Foreigners', thereby allowing to filter out respondents who included a mention of refugees in their answer and also highlighting similarity in macro-level group label understanding compared to earlier research (Asbrock et al., 2014). However, such measures were not available for studies 2 and 3 and a partially overlapping understanding between group labels is conceivable. To make things worse, it is also conceivable that an understanding of outgroup category labels might have shifted during the so-called refugee crisis, which would go unnoticed by the current measures. In a certain way this would also represent a generalizing effect of contact by shifting perception of group boundaries but it would not encompass the phenomenon under investigation here. Other conceptual limitations, that have been discussed earlier in this chapter, relate to the issue of defining outgroup similarity, threat-related mediational processes that previous STE research defined in multiple ways and the question who and what should be assessed as the participants ingroup with regards to STE mediators involving the ingroup, such as ingroup pride.

Further directions

Several further directions can be and have been identified, which future STE research should take. Before summarizing them, let us take a look at the developments that occurred between the start of the dissertation and now. The studies presented in this dissertation lead to

a further engagement of STE literature with negative contact, a development that was mirrored by other empirical studies published within a similar time frame (see e.g. Ünver et al., 2021; Kauff et al., 2023). Accordingly, one could say that literature on negative STE is now longer in its very infancy, though still very small. As the latter of the two mentioned studies shows, and studies 2 and 3 of this dissertation signifiy, the prevalence of cross-sectional designs in STE research (and particularly negative STE research) could also be amended to some extent.

However, much remains to be done. Firstly, as Kauff et al., (2023) point out, it remains unknown what would be appropriate time intervals for any longitudinal study of (negative) STE. Likewise, experimental research seems needed in light of the ambivalent results that longitudinal research uncovered, aswell as the apparent contextual instability of the effect. This also brings us to the need for more case studies (arranged within a comparative framework), so it can be better understood, in which scenarios (negative) STE might or might not occur. A refined assessment of perceived outgroup similarity would thereby facilitate an investigation of the role of similarity within this matter. All in all, future STE research should heed to contemporary endeavours of tackling problematic aspects of general intergroup contact research, as it seems to face many of the same problems. Multi-context experimental or longitudinal research might benefit from the recently proposed idea of tackling such intergroup contact research questions via Big Team Science (Friehs, 2023) and STE researchers should involve their subfield strategically within considerations that are underway within the general area of contact research. Besides this, further engagement with literature and novel insights surrounding attitude/evaluative generalization (e.g. the IPC model) or, as e.g. Vezzali et al. (2021) have noted, literature on generalized prejudice might be a necessary next step.

Conclusion

To conclude, this dissertartion started tackling some of the research gaps in STE literature within the three conducted studies: the positivity bias, the causal sequence problem, and the lack of sufficiently powered comparative multi-mediator studies engaging with the theorized role of outgroup similarity. Thereby, all studies (situated within a context of real-world ongoing intergroup issues) found some kind of empirical support for positive and negative STE, either directly, via attitude generalization, or multiculturalism. This helped establish the latter two concepts as independent parallel mediators of positive and negative STE. Other theorized processes (threat generalization and ingroup reapraisal) could not be empirically supported, for which both theoretical and operationalization-related arguments might be made. Overall, empirical support emerged for the notion that positive and negative STE occur via the same processes albeit in opposite direction. However, it also seems that STE does not always operate in the same fashion when comparing different intergroup scenarios (here differing by primary outgroup) with one-another. This implies an instable context-dependent occurence, which theory hinted at and which contemporary studies (Kauff et al., 2023) likewise indicate. We might ask: is the STE simply an instable phenomenon, or are there systematic reasons for the context-dependent emergence? The answer remains yet unkown as outgroup similarity (though crudely assessed) did not exert the theorized effect. The inability to answer this question can to some extent, be tied to study charcteristics which future STE research might improve upon. Generally speaking, more STE research is needed to answer still open questions. Thereby three developments seem particularly necessary: 1) more robustly controled multi-mediator studies of positive and negative STE together; 2) with longitudinal, quasi-experimental, and experimental study designs; 3) and within a comparative framework that allows insight into how and whether aspects of the intergroup context and notably perceived outgroup similarity affect whether and how STE might occur.

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Appendix A from study 1

This material provides additional information on the measurement of all constructs involved in our analyses. For further details please see the English version of the ALLBUS 2016 variable report (Wasmer & Baumann, 2018).

Table A1

Overview of measures from the ALLBUS 2016 used in the research at hand.

Construct	Item(s)	Item wording	Response categories
Positive contact with foreigners	mc09 (r)	When you think about all your contacts with foreigners who live in Germany: How often have you had positive experiences?	0: no prior contact 1: never 2: seldom 3: sometimes 4: often 5: very often
Negative contact with foreigners	mc10 (r)	And how often have you had negative experiences?	0: no prior contact 1: never 2: seldom 3: sometimes 4: often 5: very often
Attitude towards foreigners	ma11	Do you think that the presence of foreigners is advantageous or disadvantageous for Germany?	1: clearly disadvantageous 2: rather disadvantageous 3: neither nor 4: rather advantageous 5: clearly advantageous
Acceptance of diversity	ma12 ma13 (r)	It is better for a country if all people belong to a common culture. A society with high levels of cultural diversity will be better at tackling new problems.	1: completely agree 2: tend to agree 3: tend to disagree 4: completely disagree A mean score was created.
Pride of being German	pn11	Would you say you are very proud, fairly proud, not very proud or not at all proud to be German?	1: very proud 2: fairly proud 3: not very proud 4: not at all proud
Attitude towards refugees	 mp16 mp17 mp18 mp19	If you think about the development of German society in the next few years: Do you think that, in the following areas, there will be more opportunities, more risks or neither of these as a result of the refugees? - As regards the welfare state - As regards public security - As regards people living together in society - As regards the economic situation in Germany	1: considerably more risks 2: rather more risks 3: neither one nor the other 4: rather more opportunities 5: considerably more opportunities A latent variable was created.
Contact with refugees	mc11	In recent months, many refugees have come to Germany. Have you ever had direct personal contact with refugees?	1: yes 2: no

Note. The symbol (r) signifies that the items original response scale had been recoded. The right-most column depicts this recoded response scale. For the original coding of response categories please see Wasmer & Baumann (2018).

Appendix B from study 1

This material discusses the filtering process in light of obtaining the target sample (German majority group members) and respondents' distinctions between the primary outgroup foreigners and the secondary outgroup refugees.

Table B1 summarizes the filtering process. Tables B2 and B3 show t-tests and chi-square tests, which indicated only minor differences in two constructs for the retained final sample (*N*=1553) compared to the filtered out listwise valid cases (*N*=1408). Table B4 shows secondary transfer effects that would have been obtained if the total sample of *N*=2961 listwise valid cases had been analysed. As evident from Table B4, these results are substantially similar to our findings from the final sample of *N*=1553 cases. Finally, table Table B5 shows that the sample of listwise valid cases (*N*=2961) and the final sample (*N*=1553) yield similar factor scores for latent variables. Overall we conclude that our filtering process did not lead to a systematic bias in construct measurement, respondent characteristics or analysis results.

Table B6 shows an additional regression analysis, suggesting that for both samples (*N*=1553 & *N*=2961) our measure 'pride of being German' seems to be an „indicator of generalized positive assessment for the nation" (Wagner et al., 2012) rather than reflecting idealization of the holocaust.

Table B7 shows that the path model yields substantially the same results as in our main analyses, when controlling for additional constructs that might relate to primary and secondary outgroup attitudes (political ideology, social trust, anomie). Per missing data on these control variables the sample size in this analysis is reduced to *N*=1414.

Table B8 depicts a reverse path model where refugees are the primary outgroup and foreigners are the secondary outgroup (*N*=1553). Although due to our measurement positive- and negative refugee contact cannot be distinguished, substantially similar results emerge as

in our main analysis, indicating a STE via attitude generalization and multiculturalism (however as full mediation) but not via national pride.

Tables B9 and B10 depict further robustness analyses in which we compared core constructs and demographics between our samples at filtering stage 1 (N=2961), and filtering stage 3 (N=1553) and find only minor differences (mirroring the findings depicted in Tables B2 and B3).

Figure B1 depicts a graphical test for the linearity assumption of SEM models.

Table B1

Filtering process to obtain members of the target group (German majority group members) that distinguish between the group labels 'foreigners' and 'refugees'.

Construct	Filter 1: Listwise valid cases [a]	Filter 2: Majority group members	Filter 3: Outgroup distinction
Positive contact with foreigners	N_{valid}= 3267	N_{valid}= 2593	No direct naming:
	$N_{missing}$ = 4 (219)	$N_{filtered}$ = 368	N_{valid} = 1873
Negative contact with foreigners	N_{valid}= 3266		$N_{filtered}$ = 720
	$N_{missing}$ = 5 (219)		
Attitude towards foreigners	N_{valid}= 3456		Keywords:
	$N_{missing}$ = 28 (6)		refugee, asylum seeker,
Acceptance of diversity	N_{valid}= 3378		displaced, persecuted, fleeing, ...
	$N_{missing}$ = 101 (11)		
National pride	N_{valid}= 3174		No indirect naming:
	$N_{missing}$ = 97 (219)		N_{valid} = 1553
Attitude towards refugees	N_{valid}= 3333		$N_{filtered}$ = 320
	$N_{missing}$ = 136 (21)		
Contact with refugees	N_{valid}= 3483		
	$N_{missing}$ = 6 (1)		
N_{total} = 3490	N_{total} = 2961	N_{total} = 2593	N_{total} = 1553

Note. [a] The numbers without brackets depict missing cases due to non-response (cumulative: N= 310), while the numbers in brackets depict missing cases due to design effects (cumulative: N= 219). The latter occur, since 219 participants without German citizenship were not administered the items concerning positive- and negative contact with foreigners and national pride. For further information, please see the ALLBUS 2016 variable report.

Table B2

T-test for differences on core constructs and demographics between remaining cases (N=1553) and not remaining cases (N=1408) based on N=2961 list-wise valid answers at Filter 1.

Construct	Remaining (*N*=1553)		Filtered (*N*=1408)		*t*(2959)	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Negative contact with foreigners	1.97	1.114	1.91	1.187	1.220	.223	.045
Positive contact with foreigners	3.59	1.404	3.47	1.562	2.192	.028	.081
Attitude towards foreigners	3.18	.899	3.16	.992	.511	.609	.019
Acceptance of diversity (ma13_r)	2.93	.827	2.91	.841	.617	.538	.023
Acceptance of diversity (ma12)	2.89	.893	2.88	.928	.354	.723	.013
National identification	1.99	.795	1.99	.818	-.130	.897	-.005
Attitude towards refugees (mp16)	2.29	.888	2.30	.921	-.342	.732	-.013
Attitude towards refugees (mp17)	2.10	.736	2.13	.760	-1.414	.157	-.052
Attitude towards refugees (mp18)	2.65	.944	2.68	.969	-.973	.331	-.036
Attitude towards refugees (mp19)	2.80	.984	2.76	1.011	1.148	.251	.042
Political ideology	5.07	1.657	5.08	1.754	-.063	.950	-.002

Table B3

Chi-square test for differences on core constructs and demographics between remaining cases (N=1553) and not remaining cases (N=1408) based on N=2961 list-wise valid answers.

Construct	Remaining (*N*=1553)		Filtered (*N*=1408)		Chi-square test of independence
	M	*SD*	*M*	*SD*	
Contact with refugees	.36	.482	.44	.496	$\chi^2(1) = 17.934$ $p < .001$ phi = -.078
Gender[a]	.54	.498	.50	.500	$\chi^2(1) = 3.004$ $p = .083$ phi = .032
East/West[b]	.65	.478	.64	.481	$\chi^2(1) = 1.098$ $p = .295$ phi = .019
Partner[c]	.57	.495	.58	.493	$\chi^2(1) = .529$ $p = .467$ phi = -.013

Note. [a] Female = 0, Male = 1. [b] East German provinces = 0, West German provinces = 1. [c] Romantic partnership = 1, else = 0. For further information, please see the ALLBUS 2016 variable report.

Table B4

Summary of indirect, direct and total secondary transfer effects when including all listwise valid cases (N= 2961).

Hypothesized effects	*B*	*SE*	95% CI	*p*
Negative contact → Att. foreigners → Att. refugees *(M_1-)*	-.054	.006	[-.065, -.043]	<.001
Positive contact → Att. foreigners → Att. refugees *(M_1+)*	.089	.006	[.079, .101]	<.001
Negative contact → Acc. diversity → Att. refugees *(M_2-)*	-.021	.003	[-.028, -.016]	<.001
Positive contact → Acc. diversity → Att. refugees *(M_2+)*	.031	.003	[.024, .038]	<.001
Negative contact → pride German → Att. refugees *(M_3-)*	-.001	.001	[-.003, .000]	.206
Positive contact → pride German → Att. refugees *(M_3+)*	.002	.001	[.001, .004]	.016
Negative contact → Att. refugees *(c'1)*	-.070	.010	[-.090, -.051]	<.001
Positive contact → Att. refugees *(c'2)*	.046	.009	[.029, .063]	<.001
Total effect of negative contact *(Negative STE)*	-.146	.012	[-.169, -.123]	<.001
Total effect of positive contact *(Positive STE)*	.167	.009	[.149, .186]	<.001

Note. M_1= Attitude generalization; M_2= Multiculturalism; M_3= Ingroup Identification. c'1= direct negative STE. c'2= direct positive STE. Pride German = Pride of being German. Positive indirect paths are marked with a '+' and negative indirect paths with '-'.

Table B5

Unstandardized loadings (standard errors) and standardized loadings for latent constructs in the estimated models, displayed for the final sample (n=1553) and the sample of listwise valid cases at filter 1 (N=2961).

	Attitude towards Refugees			
Item	Final sample (*n*=1553)		Listwise valid cases (*N*=2961)	
	Unstan-dardized	Stan-dardized	Unstan-dardized	Stan-dardized
mp16	1.000 (--)	.747	1.000 (--)	.749
mp17	.816 (.028)	.736	.818 (.020)	.741
mp18	1.085 (.040)	.763	1.066 (.029)	.755
mp19	1.057 (.042)	.713	1.078 (.029)	.732

Note: Dashes (--) indicate the standard error was not estimated. CFI = .982 (Final), .983 (Filter 1); TLI = .962 (Final), .964 (Filter 1); RMSEA = .047 (Final), .047 (Filter 1); SRMR = .017 (Final), .015 (Filter 1); $\chi^2(20)$ = 87.296; p< .001 for the final sample of *n*=1553 respondents; $\chi^2(20)$ = 150.642; p< .001 for the *N*=2961 respondents at Filter 1.

Table B6

Regressing political ideology and shame about holocaust on 'Pride of being German'.

Variable	Final sample (*n*=1553)			Listwise valid cases (*N*=2961)		
	B	ß	*SE*	*B*	ß	*SE*
Constant	2.600**		.103	2.508**		.078
Political ideology	-.107**	-.221	.012	-.105**	-.224	.009
Shame about holocaust	-.012	-.026	.012	.004	.008	.009
R^2	.048			.051		

Note. * p < .05. ** p < .01.

Table B7

Summary of indirect, direct and total secondary transfer effects when including the control variables political ideology, social trust and anomie (N= 1414).

Hypothesized effects	*B*	*SE*	95% CI	*p*
Negative contact → Att. foreigners → Att. refugees *(M_1-)*	-.022	.006	[-.034, -.011]	<.001
Positive contact → Att. foreigners → Att. refugees *(M_1+)*	.046	.006	[.035, .060]	<.001
Negative contact → Acc. diversity → Att. refugees *(M_2-)*	-.010	.003	[-.018, -.005]	.002
Positive contact → Acc. diversity → Att. refugees *(M_2+)*	.019	.004	[.012, .028]	<.001
Negative contact → pride German → Att. refugees *(M_3-)*	.000	.001	[-.001, .003]	.699
Positive contact → pride German → Att. refugees *(M_3+)*	.001	.001	[-.001, .001]	.951
Negative contact → Att. refugees *(c'2)*	-.048	.015	[-.076, -.018]	<.001
Positive contact → Att. refugees *(c'1)*	.030	.013	[.005, .056]	.020
Total effect of negative contact *(Negative STE)*	-.080	.017	[-.112, -.046]	<.001
Total effect of positive contact *(Positive STE)*	.095	.014	[.069, .122]	<.001

Note. M_1= Attitude generalization; M_2= Multiculturalism; M_3= Ingroup Identification. c'1= direct negative STE. c'2= direct positive STE. Pride German = Pride of being German. Positive indirect paths are marked with a '+' and negative indirect paths with '-'.

Table B8

Summary of indirect, direct and total secondary transfer effects when estimating a reverse model with refugees as primary outgroup and foreigners as secondary outgroup (N= 1553).

Hypothesized effects	*B*	*SE*	95% CI	*p*
Negative contact → Att. refugees → Att. foreigners *(M_1-)*	-.078	.011	[-.101, -.057]	<.001
Positive contact → Att. refugees → Att. foreigners *(M_1+)*	.089	.011	[.069, .112]	<.001
Refugee contact → Att. refugees → Att. foreigners *(M_{1r})*	.125	.024	[.081 .173]	<.001
Negative contact → Acc. diversity → Att. foreigners *(M_2-)*	-.028	.006	[-.041, -.019]	<.001
Positive contact → Acc. diversity → Att. foreigners *(M_2+)*	.042	.006	[.031, .056]	<.001
Refugee contact → Acc. diversity → Att. foreigners *(M_{2r})*	.035	.010	[.016 .058]	<.001
Negative contact → pride German → Att. foreigners *(M_3-)*	.000	.001	[-.003, .000]	.628
Positive contact → pride German → Att. foreigners *(M_3+)*	.001	.001	[-.001, .003]	.712
Refugee contact → pride German → Att. foreigners *(M_{3r})*	.002	.003	[-.004 .009]	.587
Negative contact → Att. foreigners *(c'2)*	-.038	.018	[-.074, -.002]	.034
Positive contact → Att. foreigners *(c'1)*	.115	.015	[.086, .145]	<.001
Refugee contact → Att. foreigners *(c'r)*	.021	.039	[-.056, .097]	.587

Note. M_1= Attitude generalization; M_2= Multiculturalism; M_3= Ingroup Identification. c'1= direct negative STE. c'2= direct positive STE. Pride German = Pride of being German. Positive indirect paths are marked with a '+' and negative indirect paths with '-'. CFI= .982. TLI= .962. $\chi^2(20)$= 3734.95, p<.001. RMSEA= .047 90% CI[.037 .057], p<.001. SRMR= .018.

Table B9

T-test for differences on core constructs and demographics between N=2961 list-wise valid answers at Filter 1 and the remaining cases at Filter 3 (N=1553).

Construct	Remaining (*N*=1553)		Filter 1 (*N*=2961)		*t*(4512)	*p*	Cohen's *d*
	M	*SD*	*M*	*SD*			
Negative contact with foreigners	1.97	1.114	1.94	1.149	.697	.486	.022
Positive contact with foreigners	3.59	1.404	3.53	1.482	1.273	.203	.039
Attitude towards foreigners	3.18	.899	3.17	.944	.296	.767	.009
Acceptance of diversity (ma13_r)	2.93	.827	2.92	.834	.346	.730	.011
Acceptance of diversity (ma12)	2.89	.893	2.89	.910	.199	.842	.006
National identification	1.99	.795	1.99	.806	-.073	.942	-.002
Attitude towards refugees (mp16)	2.29	.888	2.30	.903	-.192	.848	-.006
Attitude towards refugees (mp17)	2.10	.736	2.11	.747	-.795	.417	-.025
Attitude towards refugees (mp18)	2.65	.944	2.67	.956	-.546	.585	-.017
Attitude towards refugees (mp19)	2.80	.984	2.78	.997	.644	.520	.020
Political ideology	5.07	1.657	5.08	1.703	-.035	.972	-.001

Table B10

Chi-square test for differences on core constructs and demographics between N=2961 list-wise valid answers at Filter 1 and the remaining cases at Filter 3 (N=1553).

Construct	Remaining (*N*=1553)		Filter 1 (*N*=2961)		Chi-square test of independence
	M	*SD*	*M*	*SD*	
Contact with refugees	.36	.482	.40	.489	$\chi^2(1) = 5.658$ p = .017 phi = .035
Gender[a]	.54	.498	.52	.499	$\chi^2(1) = .938$ p = .333 phi = -.014
East/West[b]	.65	.478	.65	.478	$\chi^2(1) = .344$ p = .558 phi = -.009
Partner[c]	.57	.495	.57	.495	$\chi^2(1) = .165$ p = .685 phi = .006

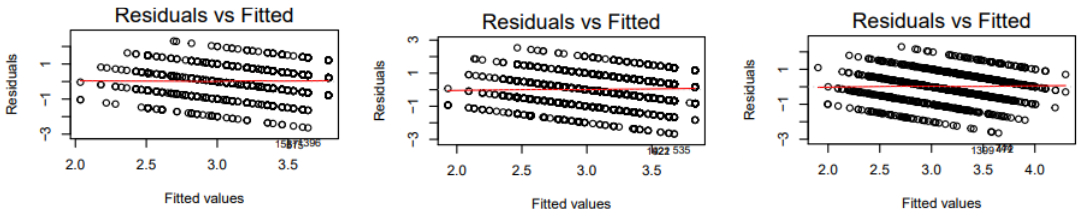
Note. [a] Female = 0, Male = 1. [b] East German provinces = 0, West German provinces = 1. [c] Romantic partnership = 1, else = 0. For further information, please see the ALLBUS 2016 variable report.

Figure B1

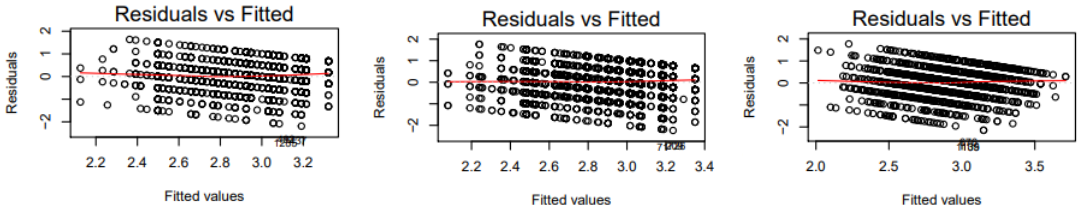
Testing the linearity assumption for the SEM model (N= 1553) and the SEM models conducted as robustness analyses (N= 2961 & N= 1414).

Model *N*= 1553 Model *N*= 2961 Model *N*= 1414

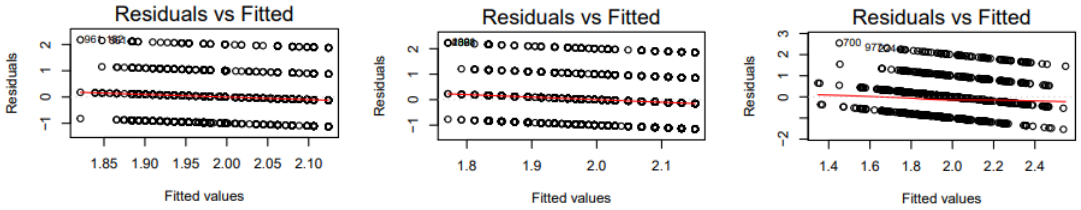
a) DV: Attitude towards foreigners



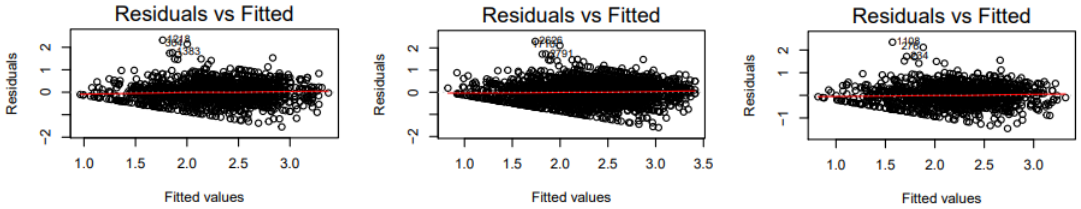
b) DV: Acceptance of diversity



c) DV: National Pride



d) DV: Attitude towards refugees



Appendix C from study 2

This appendix concerns details behind the power analyses that were conducted. Wang and Rhemtulla (2021) describe two types of statistical power: the "power to detect a misspecified model" (p. 2) and the "power to detect a target effect" (p. 2). In our power analyses we are interested in the latter. Wang and Rhemtulla (2021) define this type of statistical power as "the probability of correctly rejecting the null hypothesis that a key effect is zero in the population, given a specific true effect size" (p. 2). These authors also describe a number of factors which can affect statistical power and that the complexity of their interrelations makes it difficult to establish any general rules of thumb for calculating statistical power behind SEM target effects. Two commonly known factors are sample size and effect size, however other model parameters such as covariances or distributional characteristics also affect statistical power. To facilitate power analyses for target effects from SEM models Wang and Rhemtulla (2021) introduced the web application pwrSEM where users can input the R-code of SEM models, which will generate an input table to enter the model characteristics required to estimate the power to detect target effects. The application calculates power by running Monte Carlo simulations of models under the user-supplied input characteristics, sample size and number of simulated iterations. The power to detect a specific target effect is then calculated "as the proportion of converged cases… …in which the estimated standardized regression coefficient β_{yx} was significantly different from 0 ($\alpha = .05$)" (p. 4). Given the complexity of factors affecting statistical power of a target effect in a SEM model, Wang and Rhemtulla (2021) "highlight the importance of conducting a power analysis specific to one's own model and including plausible values of all parameters" (p. 5). This is what we attempted in the current paper. However, one has to note that our analyses are conducted ad hoc and thus the validity of our power analyses rests on the assumption that the target effect sizes and other model characteristics which emerged from

our sample data do indeed reflect the true parameters in the population. Wang and Rhemtulla (2021) highlight a number of other limitation, which users of the pwrSEM application should keep in mind. One of these is the limitation that currently the algorithm only simulates continuous normally distributed data. In our data, and presumable the majority of empirical survey data, this assumption is not always met. Accordingly, we urge the reader to interpret the results of our power analyses as informative estimates rather than 'hard facts.' Nevertheless, we are convinced of their informative value, given that many of the studies in (negative) STE literature avoid discussing the topic of statistical power although it could be an issue especially with complex path models.

Appendix D from study 2

This appendix concerns testing the assumption of measurement invariance over time regarding the items that were used to assess acceptance of diversity. In conducting these analyses we followed the recommendations of Meade et al. (2008). Table D1 below highlights the fit indices from the configural mode, the metric model, the scalar model and the strict invariance model. The results indicate that measurement invariance of this construct across time can be assumed.

Table D1

Results of measurement invariance testing regarding the construct Acceptance of diversity

Model	CFI	ΔCFI	NCI	ΔNCI	TLI	χ2	RSMEA	SRMR
Configural model	.986	/	.989	/	.959	25.987 *p* = .001	.106 (.066; .149) *p* = .012	.059
Metric model	.989	.003	.991	.002	.984	27.534 *p* = .006	.066 (.033; .099) *p* = .184	.066
Scalar mode	.993	.004	.994	.003	.993	28.339 *p* = .057	.044 (.000; .074) *p* = .591	.063
Strict invariance model	.994	.001	.995	.001	.996	35.336 *p* = .107	.035 (.000; .061) *p* = .805	.070

Appendix E from study 3

This material provides additional information on the two conducted path analyses (see Figure 5 for a schematic display). Table E1 depicts the results of the path analysis concerning Intergroup Scenario A (primary outgroup: Muslims), that were utilized to investigate Hypotheses 1 to 4. Table E2 depicts the results of the path analysis concerning Intergroup Scenario B (primary outgroup: Sinti & Roma), that were utilized to investigate Hypotheses 5 to 8. Within each table, the right-most column depicts path-specific results from a power analysis conducted with the online tool *pwrSEM* (Wang & Rhemtulla, 2021).

Table E1

Empirical Results of the Path Model depicted in Figure 5 for Intergroup Scenario A

Effect	Estimate	*SE*	95% CI		*p*	*β*	*Power*
			LL	*UL*			
Autoregressive effects							
Neg. Contact M. T1 → Neg. Contact M. T2	**.684**	.050	.582	.776	.001	.703	1.00
Neg. Contact M. T2 → Neg. Contact M. T3	**.636**	.065	.508	.763	.001	.588	1.00
Pos. Contact M. T1 → Pos. Contact M. T2	**.700**	.040	.621	.778	.001	.685	1.00
Pos. Contact M. T2 → Pos. Contact M. T3	**.658**	.039	.580	.763	.001	.670	1.00
Attitude M. T1 → Attitude M. T2	**.528**	.043	.439	.608	.001	.569	1.00
Attitude M. T2 → Attitude M. T3	**.459**	.066	.322	.583	.001	.498	1.00
Acceptance of Diversity T1 → Acceptance of Diversity T2	**.610**	.040	.529	.685	.001	.665	1.00
Acceptance of Diversity T2 → Acceptance of Diversity T3	**.572**	.051	.472	.670	.001	.610	1.00
Threat from M. T1 → Threat from M. T2	**.532**	.048	.436	.623	.001	.565	1.00
Threat from M. T2 → Threat from M. T3	**.614**	.060	.487	.727	.001	.602	1.00
Attitude R. T1 → Attitude R. T2	**.370**	.069	.230	.499	.001	.387	1.00
Attitude R. T2 → Attitude R. T3	**.397**	.066	.268	.526	.001	.436	1.00
Cross-lagged effects							
Neg. Contact M. T1 → Attitude M. T2	**−.163**	.055	−.268	−.050	.003	−.166	0.99
Pos. Contact M. T1 → Attitude M. T2	**.187**	.036	.119	.263	.001	.264	1.00
Contact R. T1 → Attitude M. T2	.012	.056	−.097	.122	.836	.009	0.06
Neg. Contact M. T1 → Acceptance of Diversity T2	**−.152**	.042	−.234	−.069	.001	−.162	1.00
Pos. Contact M. T1 → Acceptance of Diversity T2	**.133**	.031	.073	.194	.001	.196	1.00
Contact R. T1 → Acceptance of Diversity T2	−.063	.049	−.156	.031	.195	−.050	0.35

Neg. Contact M. T1 → Threat from M. T2	**.161**	.056	.045	.265	.004	.144	0.95
Pos. Contact M. T1 → Threat from M. T2	**−.195**	.039	−.273	−.121	.001	−.240	1.00
Contact R. T1 → Threat from M. T2	.026	.068	−.105	.160	.707	.017	0.08
Contact R. T1 → Attitude R. T2	**−.134**	.068	−.269	.001	.049	−.091	0.69
Attitude M. T1 → Attitude R. T2	**.180**	.068	.048	.317	.008	.175	0.91
Accept. Diversity T1 → Attitude R. T2	**.120**	.055	.015	.231	.030	.112	0.78
Threat from M. T1 → Attitude R. T2	−.026	.052	−.126	.077	.624	−.028	0.11
Neg. Contact M. T2 → Attitude M. T3	**−.155**	.062	−.280	−.034	.013	−.167	0.97
Pos. Contact M. T2 → Attitude M. T3	**.124**	.046	.037	.219	.007	.193	0.98
Contact R. T1 → Attitude M. T3	−.049	.058	−.163	.067	.399	−.040	0.19
Neg. Contact M. T2 → Acceptance of Diversity T3	−.054	.053	−.164	.047	.306	−.060	0.33
Pos. Contact M. T2 → Acceptance of Diversity T3	**.103**	.037	.032	.180	.006	.165	0.97
Contact R. T1 → Acceptance of Diversity T3	−.045	.054	−.148	.064	.408	−.038	0.17
Neg. Contact M. T2 → Threat from M. T3	**.184**	.068	.055	.326	.007	.157	0.96
Pos. Contact M. T2 → Threat from M. T3	−.084	.047	−.178	.003	.069	−.104	0.68
Contact R. T1 → Threat from M. T3	.033	.075	−.115	.179	.661	.021	0.09
Contact R. T1 → Attitude R. T3	−.058	.066	−.180	.078	.380	−.043	0.20
Attitude M. T2 → Attitude R. T3	.098	.083	−.062	.263	.243	.096	0.47
Accept. Diversity T2 → Attitude R. T3	**.130**	.067	−.001	.260	.053	.122	0.80
Threat from M. T2 → Attitude R. T3	.005	.052	−.100	.104	.922	.006	0.06
Direct Negative STE							
Neg. Contact M. T1 → Attitude R. T2	−.060	.057	−.169	.058	.298	−.055	0.27
Neg. Contact M. T2 → Attitude R. T3	−.129	.073	−.275	.008	.078	−.126	0.79
Indirect Negative STE							
Attitude generalization	−.016	.015	−.055	.007	.297	−.016	0.34
Multiculturalism	**−.020**	.012	−.039	−.002	.091	−.020	0.71
Perceived Primary Outgroup Threat	.001	.009	−.017	.020	.926	.001	0.02
Neg. Contact M. T1 → Attitude R. T2 → Attitude R. T3	−.024	.024	−.073	.021	.317	−.024	0.26
Direct Positive STE							
Pos. Contact M. T1 → Attitude R. T2	**.104**	.045	.018	.196	.022	.131	0.85
Pos. Contact M. T2 → Attitude R. T3	.019	.054	−.083	.132	.732	.026	0.09
Indirect Positive STE							
Attitude generalization	.018	.016	−.010	.055	.265	.025	0.41
Multiculturalism	**.017**	.010	.001	.040	.079	.024	0.74
Perceived Primary Outgroup Threat	−.001	.010	−.021	.020	.924	−.001	0.05
Pos. Contact M. T1 → Attitude R. T2 → Attitude R. T3	**.041**	.020	.009	.088	.036	.057	0.83

Note. N = 385. Neg. = Negative, Pos. = Positive, M. = Muslims, R. = Refugees, Accept. = Acceptance, STE = Secondary Transfer Effect. Significant coefficients are set in bold.

Table E2

Empirical Results of the Path Model depicted in Figure 5 for Intergroup Scenario B

Effect	Estimate	*SE*	95% CI		*p*	*β*	*Power*
			LL	*UL*			
Autoregressive effects							
Neg. Contact S.R. T1 → Neg. Contact S.R. T2	**.595**	.105	.389	.808	.001	.509	1.00
Neg. Contact S.R. T2 → Neg. Contact S.R. T3	**.604**	.097	.424	.800	.001	.593	1.00
Pos. Contact S.R. T1 → Pos. Contact S.R. T2	**.493**	.117	.294	.750	.001	.428	1.00
Pos. Contact S.R. T2 → Pos. Contact S.R. T3	**.556**	.070	.405	.682	.001	.581	1.00
Attitude S.R. T1 → Attitude S.R. T2	**.502**	.068	.363	.630	.001	.523	1.00
Attitude S.R. T2 → Attitude S.R. T3	**.633**	.078	.462	.777	.001	.580	1.00
Acceptance of Diversity T1 → Acceptance of Diversity T2	**.673**	.048	.573	.762	.001	.697	1.00
Acceptance of Diversity T2 → Acceptance of Diversity T3	**.811**	.041	.729	.889	.001	.799	1.00
Threat from S.R. T1 → Threat from S.R. T2	**.451**	.062	.324	.567	.001	.494	1.00
Threat from S.R. T2 → Threat from S.R. T3	**.633**	.052	.529	.733	.001	.639	1.00
Attitude R. T1 → Attitude R. T2	**.509**	.061	.389	.628	.001	.532	1.00
Attitude R. T2 → Attitude R. T3	**.549**	.065	.420	.675	.001	.578	1.00
Cross-lagged effects							
Neg. Contact S.R. T1 → Attitude S.R. T2	**−.260**	.113	−.497	−.050	.021	−.199	0.95
Pos. Contact S.R. T1 → Attitude S.R. T2	−.041	.139	−.340	.204	.769	−.028	0.08
Contact R. T1 → Attitude S.R. T2	.080	.060	−.040	.193	.178	.065	0.35
Neg. Contact S.R. T1 → Acceptance of Diversity T2	−.099	.078	−.241	.063	.203	−.072	0.36
Pos. Contact S.R. T1 → Acceptance of Diversity T2	.046	.109	−.176	.250	.674	.030	0.11
Contact R. T1 → Acceptance of Diversity T2	.082	.055	−.025	.191	.135	.062	0.41
Neg. Contact S.R. T1 → Threat from S.R. T2	**.386**	.097	.190	.572	.001	.253	1.00
Pos. Contact S.R. T1 → Threat from S.R. T2	**−.257**	.103	−.466	−.063	.012	−.154	0.86
Contact R. T1 → Threat from S.R. T2	**−.204**	.072	−.348	−.064	.005	−.142	0.94
Contact R. T1 → Attitude R. T2	**.142**	.064	.017	.270	.027	.098	0.75
Attitude S.R. T1 → Attitude R. T2	.035	.073	−.112	.176	.633	.031	0.11
Accept. Diversity T1 → Attitude R. T2	**.218**	.056	.108	.327	.001	.202	1.00
Threat from S.R. T1 → Attitude R. T2	.009	.054	−.097	.116	.865	.010	0.07
Neg. Contact S.R. T2 → Attitude S.R. T3	**−.238**	.097	−.440	−.056	.014	−.195	0.97

Pos. Contact S.R. T2 → Attitude S.R. T3	**.193**	.084	.021	.352	.022	.142	0.83
Contact R. T1 → Attitude S.R. T3	.042	.068	−.086	.184	.538	.031	0.14
Neg. Contact S.R. T2 → Acceptance of Diversity T3	−.059	.049	−.149	.042	.223	−.049	0.25
Pos. Contact S.R. T2 → Acceptance of Diversity T3	.015	.060	−.112	.125	.805	.011	0.06
Contact R. T1 → Acceptance of Diversity T3	.057	.052	−.048	.155	.271	.043	0.30
Neg. Contact S.R. T2 → Threat from S.R. T3	**.206**	.074	.066	.355	.005	.159	0.91
Pos. Contact S.R. T2 → Threat from S.R. T3	**−.172**	.083	−.352	−.021	.039	−.120	0.77
Contact R. T1 → Threat from S.R. T3	**−.171**	.068	−.303	−.034	.012	−.120	0.92
Contact R. T1 → Attitude R. T3	.107	.063	−.011	.237	.087	.077	0.58
Attitude S.R. T2 → Attitude R. T3	−.057	.092	−.243	.120	.541	−.050	0.21
Accept. Diversity T2 → Attitude R. T3	**.198**	.060	.081	.316	.001	.187	1.00
Threat from S.R. T2 → Attitude R. T3	−.035	.064	−.160	.094	.585	−.037	0.17
Direct Negative STE							
Neg. Contact S.R. T1 → Attitude R. T2	−.094	.092	−.270	.089	.304	−.061	0.24
Neg. Contact S.R. T2 → Attitude R. T3	**−.170**	.080	−.322	−.009	.033	−.135	0.80
Indirect Negative STE							
Attitude generalization	.015	.026	−.027	.087	.577	.010	0.11
Multiculturalism	−.020	.018	−.063	.008	.263	−.013	0.27
Perceived Primary Outgroup Threat	−.014	.026	−.071	.033	.598	−.009	0.12
Neg. Contact S.R. T1 → Attitude R. T2 → Attitude R. T3	−.052	.051	−.155	.046	.307	−.035	0.24
Direct Positive STE							
Pos. Contact S.R. T1 → Attitude R. T2	.053	.093	−.130	.234	.573	.031	0.10
Pos. Contact S.R. T2 → Attitude R. T3	**.157**	.077	.007	.310	.040	.113	0.71
Indirect Positive STE							
Attitude generalization	.002	.015	−.017	.053	.880	.001	0.01
Multiculturalism	.009	.023	−.035	.057	.692	.006	0.07
Perceived Primary Outgroup Threat	.009	.018	−.021	.055	.623	.006	0.06
Pos. Contact S.R. T1 → Attitude R. T2 → Attitude R. T3	.029	.051	−.070	.132	.573	.018	0.10

Note. $N = 396$. Neg. = Negative, Pos. = Positive, S.R. = Sinti & Roma, R. = Refugees, Accept. = Acceptance, STE = Secondary Transfer Effect. Significant coefficients are set in bold.