R-E-S-P-E-C-T, find out what it means to mixing:

Testing novel emotional mediators of intergroup contact effects

Abstract

Although numerous studies have documented the robust effect of positive intergroup contact experiences in reducing prejudice and improving positive attitudes towards outgroups, intergroup contact theory is still expanding and developing. In contribution to this expansion, the current studies tackled four caveats extending the literature on widely studied angles of intergroup contact and bringing in the contribution of novel emotional mediators in contact effects. First, we examined whether contact experiences also related to social change indicators beyond prejudice, namely, attitudes towards personal and general mixing. Secondly, we included both positive and negative forms of intergroup contact in the majority of the studies we report. Thirdly, we introduced outgroup respect and understanding as novel emotional mediators of contact effects. Finally, we investigated variations of our hypothesized path models in several intergroup contexts across 6 countries and 21 studies (total N = 12,859), a) looking at interethnic and interreligious contact among advantaged and disadvantaged groups, b) tackling different forms of contact such extended contact, close friendships, and secondary transfer effects, and c) testing for longitudinal effects. We have shown evidence that positive experiences with outgroups are positively related to pro-mixing attitudes, via increased levels of outgroup respect and also outgroup understanding, the latter being observed in inter/ethnoreligious contexts. We discuss these findings in light of other recent advancements within the larger framework of intergroup contact research.

Keywords: intergroup contact, respect, understanding, mixing attitudes, social change

Since the 1950s, numerous studies have shown the robust effect of positive intergroup contact experiences in the reduction of prejudice and the improvement of positive attitudes towards outgroups (see the overwhelming meta-analytic support in Lemmer & Wagner, 2015; Pettigrew & Tropp, 2006; and Van Assche et al., 2023). This positive effect has been observed across a broad range of contexts (Pettigrew & Tropp, 2006), featuring various forms of intergroup contact (e.g., direct, extended, or imagined contact, Dovidio et al., 2011). Indeed, such indirect forms of intergroup contact have also been associated with reduced prejudice (Pettigrew et al., 2007; White et al., 2021), and secondary transfer effects of intergroup contact have been uncovered (Pettigrew, 2009). Still, the emotional underpinnings of contact effects have not been fully explored, and the role of contact in attitudes towards mixing between different groups is less clear (McKeown & Psaltis, 2017; Sengupta et al., 2023). Finally, it remains crucial to look at 'both sides' of contact (i.e., positive *and* negative experiences; Árnadóttir et al., 2018; Barlow et al., 2012; Reimer & Sengupta, 2023; Schäfer et al., 2021), as well as 'both sides' of a conflict, considering the long-neglected perspective of disadvantaged group members (Tropp & Pettigrew, 2005; Hässler et al., 2021). The current study aims to tackle these four caveats, by mainly introducing novel emotional mediators of contact effects alongside expanding the literature on established angles of intergroup contact.

The effect of intergroup contact on social change

Going beyond mere liking or prejudice and investigating the social change outcomes of contact is crucial (MacInnis & Hodson, 2019). This challenge is commonly tackled through measuring intentions that reflect the behavior (e.g., collective action, or attitudes towards mixing vs. segregation), and is said to improve our understanding of the broader societal impact of intergroup experiences. For instance, beyond decreasing prejudice, positive intergroup contact kept existing prejudicial attitudes from turning into undesirable behavioral tendencies among the advantaged group (Turkish participants in relation to Kurds, Syrian refugees, and LGBTI people, Bagci et al., 2020). Similarly, in addition to improving intergroup attitudes, both direct and extended forms of contact predicted positive intergroup behavioral intentions (Hutchison & Rosenthal, 2011; Turner & West, 2012; Vezzali et al., 2012), including stronger tendencies to approach outgroup members (Turner et al., 2013). Hence, intergroup contact can foster actual integration among different groups in society (Hewstone, 2009). Indeed, data from Northern Ireland showed that greater intergroup contact predicted more positive attitudes towards mixing with the outgroup in many different domains of life such as schools/where people live/work/do sports, and even regarding who they choose as marriage partners (Hewstone et al., 2006). The latter has been a particular topic of controversy in history indicating how mixing has been considered undesirable or even frowned upon and restricted (see "miscegenation" in the US, Cruz & Berson, 2001). In the present set of studies, we will further disentangle the link between contact and mixing attitudes which could be one of the indicators of social change in the long run, both at a personal (how much one would like to separate from outgroup members across several contexts) and general levels (how much one would wish for less segregation in society as a whole).

Mediators in intergroup contact effects

The findings discussed above suggest contact as an indispensable tool in the reduction of prejudice, the improvement of positive attitudes and affect towards outgroups, as well as social change outcomes. When it comes to *how* this change occurs, studies so far have investigated various mediators that explain the link between intergroup experiences and intergroup outcomes (Pettigrew & Tropp, 2008; Swart et al., 2011). Certain studies specifically investigated emotional mediators such as anger (Hayward et al., 2017), affective empathy, and intergroup anxiety (Swart et al., 2011; Turner et al., 2013) and showed that they can be even stronger mediators than cognitive ones such as outgroup knowledge (Pettigrew & Tropp, 2008). Some of these mediators such as outgroup threat (Aberson, 2019; Çakal et al., 2016; Hewstone et al., 2014; Schmid et al., 2014; Tausch et al., 2007a; 2007b) and outgroup trust (Çakal et al., 2021; Dhont & Van Hiel, 2011; McKeown & Psaltis, 2017; Pagotto et al., 2013; Turner et al., 2013) have been robustly shown to bridge contact and intergroup outcomes as underlying mechanisms. In the present study, we propose outgroup respect and understanding as novel mediators, reflecting affective processes in the link between contact and mixing attitudes, going beyond the classical explanations, particularly outgroup threat and trust.

Outgroup respect and understanding as contact mediators

Endorsing respect for the outgroup has been regarded as an important element of the improvement of intergroup relations (Janoff-Bulman & Werther, 2008). Respect positively predicted tolerance towards outgroups (Simon et al., 2019) and combatted biased evaluations of the outgroup's perspective during political disagreements (Eschert & Simon, 2019). Respect, as a construct, is comprised of both cognitive and affective components (Drummond, 2006), yet several studies in the broader literature referred to respect as an intergroup emotion (Leonard et al., 2011; Mackie et al., 2004; Mackie & Smith, 2015; Ray et al., 2008). Like showing respect, understanding the values and culture of the outgroup has also been considered an important aspect of recognition, and outgroup understanding was also regarded as an intergroup emotion in previous studies on the subject (López-Rodríguez et al., 2023). However, to our knowledge, this is the first study to ever investigate outgroup respect and understanding as emotional mediators in contact effects. Particularly, we hypothesize that outgroup respect and potentially outgroup understanding will mediate the relationships between positive and negative intergroup contact on the one hand, and personal and general pro-mixing attitudes on the other. These latter variables refer to preference for intergroup mixing in personal and general domains of life. Our personal mixing attitudes measure focused on participants' desire to mix with outgroups in their town, workplace, and school, whereas our general mixing attitudes measure focused on their desire for there to be more mixing in society as a whole.

In addition to the level of respect and understanding people feel for outgroup members, how much they feel that they receive such respect and understanding from outgroup members can also be an important explanatory mechanism underlying the relationship between contact and subsequent outcomes. Felt respect from the outgroup improved intergroup attitudes even in a high-conflict setting (i.e., in the context of the Israeli-Palestinian conflict, Nasie, 2023). Furthermore, Simon and Grabow (2014) found that, among

gay and lesbian participants, felt respect received from the Muslim outgroup was negatively associated with anti-Muslim attitudes. Similarly, felt understanding predicted outgroup evaluation (Livingstone et al., 2020a) and behavioral intentions, and this effect of feeling understood was also supported by experimental and meta-analytical evidence (Livingstone et al., 2020b). Therefore, we included felt respect and understanding in some of the studies in the current paper to explore their potential mediating role in the relationship between contact and mixing attitudes. With the inclusion of several additional mediators that tap emotional processes, we aim to dissect contact's role in personal and general mixing attitudes (preference for intergroup mixing in one's personal life and in society as a whole, respectively), while also trying to isolate the effects of outgroup respect and understanding in this process.

The Present Studies

Despite suggesting some well-established mechanisms in explaining how contact with outgroup members improves intergroup attitudes, intergroup contact theory is still expanding and developing. The current set of studies contributes to this expansion by tackling four caveats, mainly introducing the novelty of proposing outgroup respect and understanding as emotional mediators of contact effects, as well as adding to some of the widely studied aspects of intergroup contact and providing a thorough investigation of these with a large number of datasets. Firstly, we looked at positive *and* negative contact. Secondly, we went beyond liking as an outcome and examined whether contact experiences also related to attitudes towards personal and general mixing. Thirdly, we introduced outgroup respect and understanding as novel emotional mediators of contact effects, explaining additional variance above and beyond certain well-established mediators (e.g., outgroup threat and trust). In studies that featured these variables, we controlled for outgroup threat and trust as mediators, along with ingroup contact as an additional predictor. We did this to a) robustly test the mediating role of respect and understanding, and b) purify the effect of *intergroup* experiences from a general 'contact-oriented' personality. Fourthly, to test the robustness of the contact effects and the mediational paths that we suggest, we investigated variations of our hypothesized path models in several intergroup contexts across 6 countries, a) looking at interethnic contact among advantaged and disadvantaged groups (Study 1), b) testing various forms of contact including extended contact, secondary transfer effects, and close interethnic friendships (Study 2), c) extending our investigations to interreligious and ethnoreligious contact among both advantaged and disadvantaged groups (Study 3), and d) examining long-term effects by testing longitudinal effects of interreligious contact (Study 4, see Table 1 for an overview of all studies and samples, and Figure 0, Panel A for the conceptual model). We hypothesized that outgroup respect and understanding will emerge as additional emotional mediators explaining the link between contact experiences and attitudes towards mixing above and beyond established mediators like outgroup threat and trust. Given the substantially large number of previous studies focusing on respect, we are more confident in the role of outgroup respect and examine the role of understanding as a more exploratory path.

Analytic Strategy[1]

In each study, we conducted path analyses in Mplus to examine mediation effects by outgroup respect and understanding. We tested three different variations of these models featuring a higher number of mediators each time to see if the variables would still significantly mediate the paths even after controlling for other potential mediators. Across all studies, we followed the same analytical strategy where we first tested a basic model with outgroup respect and understanding alone as mediators, then included outgroup threat and trust to control for their mediating effects, and finally included all the other variables each study featured. In addition, at the end of Study 1, where each of the individual studies tackled direct forms of interethnic contact as the predictor, we performed a meta-analytical investigation on Studies 1a-1k, including the Pilot Study (Study l, Table 2). This extension allowed us to achieve a better overview of the total, direct, and indirect effects of direct interethnic contact on personal and general mixing attitudes, before moving on with other forms of contact in other contexts[2].

Based on the initial results obtained from a pilot study, we conducted a power analysis to determine the minimum sample size we needed to detect the hypothesized effects in our subsequent analyses. We performed an a priori analysis with a power of .80 and an alpha of .05. Using r = .22 (the typical contact effect in the literature; Pettigrew & Tropp, 2006; Van Assche et al., 2023) as a reference point, we identified that the minimum number of participants was N = 159. Therefore, we generally aimed to achieve a sample size of at least 159 respondents, and only made small exceptions for samples from underrepresented contexts or groups. It should be noted that in some of the studies with disadvantaged groups, we pooled the data coming from distinct groups into a single sample in order to obtain sufficient power. We elaborate more on this decision in the limitations section.

Pilot Study

We analyzed data from 62 White/European American participants from the US, focusing on their contact experiences with ethnic minority members. For the mediation analyses in the pilot study, we tested two different models: a basic model with outgroup respect and understanding as the only mediators, and a more extensive model controlling for the effects of outgroup threat and outgroup trust as additional mediators. In the basic model, outgroup respect mediated the relationship between positive intergroup contact and general mixing attitudes and this significant mediation persisted even when controlling for outgroup

[1] Some datasets reported in the present set of studies were part of a larger data collection including other variables as well. These samples have been used in Van Assche et al. (2023; Study 1b, 1c, 1d, 1i, 1j, 1k) and in Pollmanns and Van Assche (2024; Study 1j, 1k). Only the measures of direct positive and negative intergroup contact overlap between these studies and the present contribution. Other samples have been used in Acar and Van Assche (2024; Study 1e, 1f) and Van Assche et al. (2019; Study 3a), with no overlapping measures. Academic and non-academic publications based on the datasets used in Study 3c and 3d can be found here: https://www.ark.ac.uk/ARK/publications/overview.

[2] Considering the number of studies we report in this paper, we moved the Method sections of each study to the Supplementary Online Materials (SOM) file. This section includes detailed information about the participants and procedure, sampling strategy, and measures used in each study. The SOM also includes all means, standard deviations, correlation tables, and the figures showing the results on the more extensive models that we tested, as well as a comparison of contact effects for advantaged and disadvantaged groups in the internal meta-analysis.

threat and trust in the extended model (see Table 3 for an overview of the indirect effects). Also, there was a significant and negative direct effect of negative intergroup contact on personal mixing attitudes (Figure 0, Panel B). These initial findings, although limited, shed light on the possibility that these emotional mediators play a role in contact effects (see SOM pages 2-5, for the method section, correlation table, and the extended figures associated with the Pilot Study).

Study 1: Direct interethnic contact among advantaged and disadvantaged groups

In this section, we focused on both advantaged and disadvantaged group members in various settings. In Study 1a, we analyzed data from Turkish participants in relation to their interethnic contact with Kurds and Arabs. In Studies 1b through 1d, we analyzed data from the US, in relation to interethnic contact among the White population as the advantaged group (Study 1b) and Black (Study 1c) and Latinx (Study 1d) populations as two different disadvantaged groups. Using census data from the US which was representative in terms of gender, age, and ethnicity, in Studies 1e and 1f, we analyzed data from different groups in the US. Similarly, in Studies 1g and 1h, we included samples from different groups in South Africa. In Study 1i through 1k, we analyzed data from Flemish people in Belgium in relation to ethnic minorities. In those studies, containing disadvantaged groups, the target outgroups were the advantaged group members in their respective contexts.

Making a distinction between advantaged and disadvantaged groups was important because although the positive effect of contact was also detected among disadvantaged group members, it was generally shown to be weaker compared to the effect among advantaged groups (Binder et al., 2009; Lemmer & Wagner, 2015; Tropp & Pettigrew, 2005; but see Van Assche et al., 2023). This asymmetry in the effectiveness of contact has been explained by two mechanisms. One explanation was coined the “wallpaper effect”, whereby contact experiences are less transformative for disadvantaged group members due to such experiences occurring more frequently, as there are usually a higher number of (advantaged) outgroup members in their environments (Barlow et al., 2013). Another mechanism was the “counter-effect of negative contact”, put forward by Árnadóttir and colleagues (2022). They showed that negative contact can heighten social identity threat and hence hinder the fruitful effects of positive contact, unless this contact is of high-quality (e.g., friendships, see also Kanas et al., 2015). Considering these findings, the rather insufficient focus on disadvantaged groups remains an issue in the literature that we aimed to tackle as part of the current studies.

Study 1a

In this study, we analyzed data from 172 Turkish people in relation to their contact experiences with Kurds and Arabs. In the simplest model that we tested, we included positive and negative intergroup contact as predictors, outgroup respect and understanding as mediators, and personal mixing attitudes as the outcome. We showed that outgroup respect significantly mediated the relationship between positive intergroup contact and personal mixing attitudes. We then proceeded to add outgroup threat and trust as additional mediators and observed that outgroup respect was no longer a significant mediator, like the lack of mediation when we extended the model one last time by also controlling for the effects of

positive and negative ingroup contact (Table 3). No direct effects between positive and negative intergroup contact and personal mixing attitudes were observed (Figure 1, Panel A) (see also SOM, pages 6-11).

Study 1b

In Study 1b, we tested our hypotheses on 170 White/European Americans from the US focusing on their contact experiences with Black/African and Latinx/Hispanic Americans. In our most basic model, we showed that outgroup respect significantly mediated the link between positive intergroup contact and personal mixing attitudes, whereas outgroup understanding did not play a significant role. Secondly, we added typical mediators of outgroup threat and trust to the model to control for their effects and showed that the significant mediation by outgroup respect between positive intergroup contact and personal mixing attitudes persisted. Finally, we additionally controlled for the effects of positive and negative ingroup contact and demonstrated that the previously mentioned mediation by outgroup respect held in this final model as well (Table 3). Interestingly, even though the total effect of positive contact on personal mixing attitudes was positive, the direct effect was significant and negative (as was the direct path from negative contact to this outcome) (Figure 1, Panel B) (see also SOM, pages 12-17).

Study 1c

In Study 1c, we analyzed data from 172 Black/African Americans from the US in relation to their contact experiences with White/European Americans. In our simplest model, although personal mixing attitudes were negatively predicted by negative intergroup contact (Figure 1, Panel C), outgroup respect and understanding did not mediate the contact effects on this outcome. We proceeded to control for outgroup threat and trust, and later also for positive and negative ingroup contact, and did not detect any mediation effects not only via outgroup respect and understanding, but also not via outgroup threat or trust. This preliminary evidence supports the notion that contact effects may not be as robust among disadvantaged group members (see also SOM, pages 18-23).

Study 1d

We analyzed data from 172 Latinx/Hispanic Americans from the US concerning their contact experiences with White/European Americans. Although there was a positive effect of outgroup respect on personal mixing attitudes, there were no direct or indirect effects of contact in the model (Figure 1, Panel D). When we extended the model controlling for outgroup threat and trust, only outgroup threat negatively predicted personal mixing attitudes, however, there were no mediation effects. Similarly, the final extension with the inclusion of positive and negative ingroup contact also did not yield any mediation effects (see also SOM, pages 24-29).

Study 1e

This sample consisted of 460 White/European Americans reporting on their contact experiences with ethnic outgroup members. As this dataset only included the central measures of contact, outgroup respect and understanding, and mixing attitudes, we were not able to perform multiple path analyses and control for additional mediators. However, the simple model we tested showed that outgroup respect significantly mediated the link between positive intergroup contact and personal mixing attitudes. Therefore, the results of Study 1e supports outgroup respect’s prominent role in contact effects among a sample of

White/European American participants, as well as depicting a significant negative effect of negative intergroup contact on personal mixing attitudes (Figure 1, Panel E) (see also SOM, pages 30-32).

Study 1f

In Study 1f, we analyzed data from 152 Black, Native, Asian, Latinx, and Native Hawaiian or other Pacific Islander people from the US in relation to their contact experiences with ethnic outgroups. We followed a similar analytical method as in the other studies and we saw that outgroup respect did not emerge as a significant mediator in the link between contact and personal mixing attitudes. There was only a negative effect of negative intergroup contact on personal mixing attitudes. This lack of (in)direct effect of positive contact is in line with previous findings in the literature that depict weaker evidence for contact effectiveness among disadvantaged group members (see Figure 1, Panel F). Nonetheless, it is important to note that literature also points to negative contact intervening with the favorable impact of positive contact, unless the contact experience is of high-quality (Árnadóttir et al., 2022; Kanas et al., 2015). In this dataset, we utilized an item of simple day-to-day positive contact without indicating any deeper connection, which limits our ability to generalize our finding of weaker effects among disadvantaged group members to all forms of contact (see also SOM, pages 33-35).

Study 1g

We analyzed data from 231 White South Africans in relation to their contact experiences with Black/Coloured[3]/Indian/Asian South Africans. The results followed a similar pattern as in the previous studies and outgroup respect mediated the link between positive intergroup contact and general mixing attitudes. As in the previous studies, we extended the model by adding outgroup threat and trust as additional mediators to control for their effects and showed that the significant mediation by outgroup respect persisted. Finally, we extended the model one last time by also controlling for positive and negative ingroup contact as additional predictors, and felt respect, ingroup trust, and outgroup knowledge as additional mediators. In this final model as well, outgroup respect was found to be a significant mediator in the link between positive intergroup contact and general mixing attitudes, emerging as a robust underlying mechanism. In addition, there was a positive direct effect of positive intergroup contact on both personal and general mixing attitudes (Figure 1, Panel G) (see also SOM, pages 36-42).

Study 1h

In Study 1h, we sampled again from South Africa, this time from 146 Black/Coloured/ Indian/Asian South Africans in relation to their contact experiences with White South Africans, which allowed us to examine the effects in a disadvantaged sample from the same setting. We followed the same analytical strategy where we tested three different models each time adding the same additional variables as we did with the analyses on the White subsample and showed that outgroup respect did not emerge as a significant mediator in any of the paths. Similarly, none of the other mediators that we included as control variables were significant mediators in the links between the predictors and the outcomes. There were no

[3] The term “coloured” is used in South Africa to refer to people who have a mixed racial background.

direct effects of positive or negative intergroup contact on personal and general mixing attitudes either, again revealing non-existing or weaker effects of intergroup contact among disadvantaged group members – notably, this sample was slightly underpowered and various ethnic-cultural groups that may have different intergroup experiences were pooled under one category (Figure 1, Panel H) (see also SOM, pages 43-49).

Study 1i

In Study 1i, we collected data from 272 Flemish people in Belgium, concerning their contact experiences with ethnic minorities. Outgroup respect was again a significant mediator, underlying the links between positive intergroup contact and both personal and general mixing attitudes. This time, outgroup understanding also mediated the association between positive intergroup contact and general mixing attitudes. These effects persisted when we ran a more extensive model controlling for outgroup threat and trust. Later, we extended the model one last time additionally including positive and negative contact with the ingroup, ingroup respect, ingroup understanding, ingroup threat, and ingroup trust and demonstrated that outgroup respect was still, and actually the only, significant mediator in the links between positive intergroup contact and personal and general mixing attitudes. It also emerged as significant in the link between negative contact and personal mixing attitudes. There were also positive direct effects of positive intergroup contact on both personal and general mixing attitudes (Figure 1, Panel I) (see also SOM, pages 50-55).

Study 1j

In Study 1j, we tested our hypotheses on 235 Flemish people in Belgium, focusing on their direct contact experiences with immigrants. This study includes the same dataset as in Study 2a, which focused on indirect contact experiences. The results showed that outgroup respect mediated the relationship between positive contact and both personal and general mixing attitudes. However, outgroup understanding did not mediate any of the links. Importantly, outgroup respect remained a significant mediator of the link between direct positive contact and both personal and general mixing attitudes despite controlling for outgroup trust and symbolic and realistic threat[4]. In the final extension of this model (where we also controlled for direct positive and negative ingroup contact, ingroup respect, ingroup understanding, ingroup trust, and felt trust), outgroup respect was no longer a significant mediator in the link between direct positive contact and personal or general mixing attitudes (Table 3). There were also positive direct effects of positive contact and negative direct effects of negative contact on both outcomes (Figure 1, Panel J) (see also SOM, pages 56-62).

Study 1k

In Study 1k, 217 Flemish people in Belgium provided data regarding their contact experiences with Turkish immigrants. The results of our most basic model followed a similar

[4] In each sample, we ran a factor analysis on the combined outgroup threat scale to see if it yielded two separate components (symbolic and realistic threat, which emphasize perceived threat to the ingroup's values and tangible outcomes for the ingroup, respectively, Stephan & Stephan, 2000). If it did, we checked the correlation between the symbolic and realistic threat scales. In this case, it was only $r = .32$, $p < .001$, which deemed having two separate threat scales a better option.

pattern with the other studies and outgroup respect once again emerged as a significant mediator in the links between both positive and negative contact with Turkish people and both personal and general mixing attitudes (Table 3), whereas outgroup understanding did not mediate any of the paths. Outgroup respect was still a significant mediator, above and beyond other established variables like outgroup threat. In addition, positive contact had a direct positive effect on general mixing attitudes, whereas negative contact had direct negative effects on both personal and general mixing attitudes (Figure 1, Panel K) (see also SOM, pages 63-69).

Study 1l

In Study 1l, we performed an internal meta-analysis on the studies that we have reported up until this point (Studies 1a – 1k, including the Pilot Study), which were all based on direct form of interethnic contact. We reported the meta-analytic estimates of the total and direct effects, as well as the indirect effects through outgroup respect and understanding (see Table 2), in the links of positive and negative contact with personal and general mixing attitudes.

There were positive and significant total and direct effects of positive intergroup contact on both personal and general mixing attitudes, whereas there were negative and significant total and direct effects of negative intergroup contact on these outcomes. Outgroup respect emerged as a significant mediator in all these dyads. Outgroup understanding only significantly mediated the dyads of positive contact and general mixing attitudes and of negative contact with personal mixing attitudes.

These results support the literature by demonstrating robust total and direct effects of both types of direct intergroup contact. In addition, and more centrally to our hypothesis, outgroup respect was a significant mediator, as was understanding (albeit less consistent). Considering that the mediators we propose are the novel aspects of the current paper, we specifically focus on the indirect effects in the remaining studies, although we continue to test and report the direct effects in the figures.

Study 2: Indirect interethnic contact effects among advantaged groups

Like direct intergroup contact, various indirect forms of contact experiences were also shown to predict a range of intergroup outcomes including reduced prejudice and increased perceptions of outgroup variability (Dovidio et al., 2011; Paolini et al., 2004; White et al., 2021). Extended contact, which is defined as acquiring the knowledge that fellow ingroup members are friends with members of outgroups (Wright et al., 1997), is a prominent form of contact shown to improve intergroup attitudes (Vezzali et al., 2014). In addition to the meta-analytic support on its effectiveness on various intergroup outcomes (Zhou et al., 2019), it was shown to predict more positive behavioral intentions (Christ et al., 2010; Husnu et al., 2016), as we also focus on in this paper in the form of mixing attitudes. Another way intergroup outcomes are affected without direct contact with the immediate outgroup is through a process called “secondary transfer effect” where contact with one outgroup influences attitudes towards an unrelated outgroup (Hewstone et al., 2014; Lolliot, 2013; Pettigrew, 2009; Tausch et al., 2010). Therefore, while replicating the mediations by outgroup

respect and understanding, in addition to direct intergroup contact, in Study 2a, we also tested extended contact with immigrants as a predictor, whereas in Study 2b, we looked at secondary transfer effects of direct intergroup contact with refugees and homosexual people onto attitudes towards Turkish people. Our data-analytical approach was similar to Study 1, each time testing a more extensive path model.

Study 2a

Results of the path analyses with Extended Intergroup Contact

In Study 2a, we analyzed the same dataset included in Study 1j (N = 235 Flemish adults from Belgium), this time focusing on indirect contact experiences. The results largely followed the same pattern in the most basic model with direct intergroup contact. Outgroup respect significantly mediated the relationships of both extended positive and negative contact with both outcomes (Table 3), even when controlling for outgroup trust, symbolic, and realistic threat (for general, but not for personal mixing attitudes). Direct positive effects of positive extended contact and negative effects of negative extended contact were observed on both outcomes (Figure 2, Panel A.1).

Results of the path analyses with Closeness in Outgroup Friendships

Finally, we replaced the predictor with an intimate and ‘deep’ indicator of contact, namely, closeness in outgroup friendships. Similar relationships among the variables were observed. Outgroup respect, once again, mediated the associations between closeness in outgroup friendships and both personal and general mixing attitudes. However, in the most extensive model, including closeness in ingroup friendships as a second predictor, and additional mediators of ingroup respect, ingroup understanding, ingroup trust, and felt trust, the significant mediation by outgroup respect disappeared (Table 3). Closeness in intergroup friendships also had direct positive effects on both outcomes (Figure 2, Panel A.2) (see also SOM, pages 71-80).

Study 2b

Results of the path analyses on Direct intergroup contact with refugees

In Study 2b, we analyzed data from 217 Flemish people from Belgium, testing the secondary transfer effect of their contact experiences with refugees onto their attitudes towards Turkish immigrants. By replacing the predictor variables with positive and negative contact with refugees instead of Turkish people, we aimed to test whether we would observe transfer effects while replicating the finding that outgroup respect is an important mechanism. The results followed the same pattern as in the previous models where outgroup respect (towards Turkish people) significantly mediated the relationship between positive and negative contact with refugees and personal and general mixing attitudes (towards Turkish people). Put differently, even though the mediators and the outcomes related to Turkish people, contact experiences with refugees could transfer onto attitudes towards Turkish people. These results exactly replicated while controlling for other mediators. Direct positive effects of positive contact and negative effects of negative contact on both outcomes were also noted (Figure 2, Panel B.1).

Results of the path analyses on Direct intergroup contact with homosexual people[5]

The purpose of these additional analyses was to test whether the transfer effects shown above would still hold when contact experiences relate to an outgroup which is from a distant social category, outside the scope of ethnic categorizations. The most basic model featured positive and negative contact with homosexual people instead of Turkish people while all other variables were held constant. This time, the results were different from previously observed in the sense that outgroup respect only mediated the relationships between negative contact with homosexual people and personal and general mixing attitudes towards Turkish people. When the model was extended controlling for outgroup trust and outgroup threat, the significant mediation by outgroup respect disappeared. No direct effects were observed (Figure 2, Panel B.2). These results support the idea that transfer effects may occur when the two outgroups belong to a similar social category (in this case, Turkish people and refugees both constitute ethnic outgroups in the eyes of Flemish participants), whereas it is more difficult for such a transfer effect to occur when the two outgroups represent different social categories (i.e., ethnicity- versus sexual orientation-based outgroups) (see also SOM, pages 81-90).

Study 3: Cross-sectional interreligious contact among advantaged and disadvantaged groups

When it comes to the intergroup context, the effectiveness of contact has commonly been tested on interethnic attitudes; however, contact was also shown to decrease prejudice (Kanas et al., 2015) and improve attitudes towards mixing between groups in interreligious and ethnoreligious contexts (Hewstone et al., 2006; 2014), as well as towards sexuality-based outgroups (Herek & Capitanio, 1996). These previous findings point out the relevance of testing the proposed emotional processes underlying contact and mixing attitudes in a variety of contexts in relation to certain groups that are categorized across different domains. Therefore, in Studies 3a-3d, we tested our hypotheses on outgroup respect and understanding in interreligious/ethnoreligious contexts featuring contact between religiosity-based advantaged and disadvantaged groups. The inclusion of interreligious contact on top of interethnic contact in the previous studies allowed a broader generalization of our findings.

Study 3a

In this study, we tested our hypotheses on a sample of 170 Christians from Belgium, in relation to their contact experiences with Muslims. In this analysis, not outgroup respect, but outgroup understanding significantly mediated the relationship between positive intergroup contact and both personal and general mixing attitudes. When we extended the model by also controlling for the mediators of ingroup respect and understanding, as well as the predictors of positive and negative ingroup contact, this time outgroup respect emerged as a significant mediator in the relationship between positive intergroup contact and personal mixing attitudes, while the mediation by outgroup understanding disappeared. There was also a positive direct effect of positive contact on general mixing attitudes and negative direct effect of negative contact on personal mixing attitudes (Figure 3, Panel A) (see also SOM, pages 91-95).

[5] In this part of the analyses, the sample size was $N = 226$, since a different subset of the participants were removed from the dataset (non-heterosexual people instead of people with migration background).

Study 3b

In Study 3b, we again analyzed data from 184 Christians from Belgium focusing on their contact experiences with Muslims. Outgroup respect significantly mediated positive intergroup contact's effects on both mixing attitudes, whereas outgroup understanding mediated its effect on general mixing attitudes. When we extended the model by controlling for outgroup threat and trust, the mediating role of outgroup respect on both types of mixing attitudes persisted, whereas the mediation by outgroup understanding disappeared. We then proceeded to extend the model one last time by also controlling for positive and negative ingroup contact, ingroup respect, ingroup understanding, ingroup threat, and ingroup trust, and showed that outgroup respect was no longer a significant mediator in any of the links. A negative direct effect of negative contact on personal mixing attitudes was also noted (Figure 3, Panel B) (see also SOM, pages 96-101).

Study 3c

In Study 3c on ethnoreligious contact, we tested our hypotheses on a sample of 3769 Catholics from Northern Ireland regarding their contact experiences with Protestants. We tried to replicate our prior findings in interethnic settings and showed that both outgroup respect and understanding mediated the links between contact and personal and general mixing attitudes. We then extended the model by adding ingroup respect and understanding as additional mediators and showed that the mediations by outgroup respect and understanding persisted. We also noted positive direct effects of intergroup contact on both personal and general mixing attitudes (Figure 3, Panel C) (see also SOM, pages 102-106).

Study 3d

This time we analyzed data from 5525 Protestants from Northern Ireland in relation to their contact experiences with Catholics. We again tested the same two models as in Study 3c on the Protestant sample and showed that both outgroup respect and understanding again mediated the relationship between contact and both personal and general mixing attitudes. Even after controlling for ingroup respect and understanding, the significant role of outgroup respect and understanding persisted. There were also positive direct effects of intergroup contact on both outcomes (Figure 3, Panel D) (see also SOM, pages 107-110).

Study 4: Longitudinal effects of interreligious contact on advantaged and disadvantaged groups

In Study 4, we focused on interreligious contact between Catholics and non-religious (i.e., atheist, agnostic, and non-adhering) people in Chile and investigated how felt respect from the outgroup and outgroup understanding mediate the potential relationship between positive and negative intergroup contact and this time an attitudinal outcome of outgroup liking that does not imply behavioral intentions like the outcome of mixing attitudes. Catholics constitute the biggest religious group in Chile, whereas nonbelievers constitute the second biggest group in the country, which is why we chose to focus on these two categories, although in Study 3, we included two different religious groups. We analyzed data from two different timepoints with a 2-year rime lag and looked at the longitudinal mediations by felt

respect and understanding. So far, the longitudinal studies in the literature on the effects of contact showed that both direct and indirect forms of contact reduced prejudice and elicited improved attitudes towards ethnic outgroups which are sustained over time suggesting a causal effect of contact on subsequent intergroup outcomes (Binder et al., 2009; Lemmer & Wagner, 2015; Swart et al., 2011).

Study 4a

In this study, we collected data from 457 Catholics from Chile focusing on their contact experiences with atheists. Unlike the previous studies, this time we focused on the longitudinal mediation effects by investigating the influence of those variables measured at Time 1 on the outcome of outgroup liking on Time 2 (cf. Cole & Maxwell, 2003). We again tested three different models by adding a higher number of control variables each time. None of these models yielded any longitudinal indirect effects through felt respect or outgroup understanding. However, when we looked at the cross-sectional indirect effects from the same time-points, felt respect mediated the associations of both positive and negative contact with outgroup liking. Moreover, an indirect effect through outgroup understanding also emerged in the link between positive contact and outgroup liking. Finally, both mediators persisted as crucial mediators in this link, even in the extended models controlling for outgroup threat and trust, as well as certain ingroup related variables (see Figure 4, Panel A for the direct effects) (see also SOM, pages 111-114).

Study 4b

This Chilean sample consisted of 293 atheists, agnostics, and non-adhering people concerning their contact experiences with Catholics. We repeated the same analyses as in Study 4a and did not observe any longitudinal indirect effects by felt respect and outgroup understanding. Nevertheless, we again noted felt respect as a cross-sectional mediator in the relationship between positive contact and outgroup liking. This effect persisted when we controlled for outgroup threat and trust and disappeared when we also controlled for ingroup related variables in the final extension of the model. Finally, in this most extensive model, felt respect emerged as a significant mediator in the link between negative contact and outgroup liking (see Figure 4, Panel B for the direct effects) (see also SOM, pages 115-117).

General Discussion

In addition to decreasing prejudice towards outgroups across a broad range of contexts (Pettigrew & Tropp, 2006), intergroup contact was also shown to predict more positive behavioral intentions (Hutchison & Rosenthal, 2011; MacInnis & Hodson, 2019; Turner & West, 2012; Vezzali et al., 2012), such as stronger tendencies to approach outgroup members (Turner et al., 2013) and also more positive attitudes towards mixing with outgroup members across different domains of life (Hewstone et al., 2006). Hence, ample support suggests that contact has the potential to foster integration and reduce segregation in society (Hewstone, 2009).

In explaining how contact operated, various mediators have been proposed in the literature as underlying mechanisms (Pettigrew & Tropp, 2008; Swart et al., 2011). Some of

those studies attracted specific attention to emotional explanations driving intergroup outcomes following contact, portraying emotions as even stronger motivators than cognitive processes (Pettigrew & Tropp, 2008). Those emotions commonly studied in relation to contact effects include threat (Tausch et al., 2007a; 2007b) and outgroup trust (McKeown & Psaltis, 2017; Turner et al., 2013), anger (Hayward et al., 2017), affective empathy, and intergroup anxiety (Swart et al., 2011; Turner et al., 2013; Vezzali et al., 2010), whereas we proposed outgroup respect and understanding as novel emotional mediators of contact effects. Both outgroup respect (Simon et al., 2019) and understanding (López-Rodríguez et al., 2023) have been shown to yield positive intergroup outcomes. Since outgroup threat (Aberson, 2019; Çakal et al., 2016; Hewstone et al., 2014; Schmid et al., 2014; Tausch et al., 2007a; 2007b) and outgroup trust (Çakal et al., 2021; Dhont & Van Hiel, 2011; McKeown & Psaltis, 2017; Pagotto et al., 2013; Turner et al., 2013) particularly emerged as robust mediators in previous studies; we consistently controlled for their effects in order to have a better understanding of our findings.

Across 21 samples within four groups of studies, we analyzed data from six countries around the world (total N = 12,859). We looked at direct and indirect forms of contact in relation to interethnic and inter/ethnoreligious mixing attitudes, testing the mediations by outgroup respect and understanding, on both advantaged and disadvantaged groups, cross-sectionally and over time. The internal meta-analysis focusing on direct positive and negative interethnic contact (Study 1) indicated strong total (and direct) effects of both types of contact on both personal and general mixing attitudes. Importantly, it also showed outgroup respect as a significant mediator in these dyads, whereas outgroup understanding was a significant mediator in half of the dyads. In Studies 2-4, outgroup respect again was a significant emotional mediator in the links of positive indirect/interreligious contact with personal and general mixing attitudes in the majority (86%) of the models. For negative indirect/interreligious contact, outgroup respect was a significant mediator in 50% of the links. Outgroup understanding was also a mediator of positive indirect/interreligious contact effects (in 57% of the links), but not for negative indirect/interreligious contact (0% of the links).

Interestingly, the presence of indirect effects through outgroup respect did not seem to depend on the context (with 80% significance rate in both interethnic and interreligious contexts), whereas outgroup understanding was more frequently a mediator in inter/ethnoreligious (80%) than in interethnic (6%) contexts. Both emotional mediators, and especially outgroup respect, tended to persist even after controlling for typical mediators like outgroup threat and trust, as well as variables relating to the ingroup. In the final study, felt respect was also a strong mediator of interreligious contact effects (also after controlling for other mediators). Notably, this indirect effect was not found over time, echoing recent critiques on the causality of contact (Sengupta et al., 2023) and pointing towards potential third-variable explanations.

A few valuable nuances in our findings should be noted. First, significant mediations by outgroup respect emerged also with closeness in intergroup friendships and extended contact as predictors. Although positive contact was observed to be the more prominent

predictor, negative contact was also influential when the contact experiences were of extended form. Second, we tested secondary transfer effects and showed that although a secondary transfer effect on the mediation by outgroup respect was observed when the second outgroup was also from an ethnic category (attitudes towards Turkish people predicted by contact experiences with refugees), it was not present when the second outgroup was from an unrelated category such as a sexuality-based outgroup (attitudes towards Turkish people predicted by contact experiences with homosexual people). This finding is consistent with the lack of evidence for secondary transfer effects by Zingora and Graf (2019) on the attitudinal outcomes when the transfer was tested between two groups from different social domains (Roma and gay people). Third, we conducted separate meta-analyses on advantaged and disadvantaged groups and compared the magnitude of their effect sizes (reported in SOM, Study 1l, page 70). We showed that although almost every total and direct effect in the dyads of positive and negative contact with personal and general mixing attitudes were significantly stronger among advantaged groups, the effect sizes of the indirect effects through outgroup respect and understanding did not differ based on group status. This finding implies that although contact effects might be stronger among advantaged group members, the processes underlying these effects may be similar and equally powerful.

Finally, there are a few limitations of the current set of studies that we would like to mention. First, we were unable to make strong inferences about causality given our data. As pointed out by Fiedler and colleagues (2011), our cross-sectional mediation analyses do not allow us to achieve convictions about the causal relationships in our models, which signals the need to work with longitudinal designs that give a better indication about causality. Although we included two studies (4a and 4b), where we report longitudinal findings from Chile, we ideally would have had at least three measurement points (although we replicated our previous findings on outgroup respect when looking at cross-sectional associations). Notably, the 2-year time lag might have impeded the detection of any longitudinal effects, hence, future studies could collect data with time points that are closer to one another. Second, although two samples were representative in terms of gender, age, and ethnicity, we often relied on student and convenience adult samples, which were sometimes slightly underpowered, yielding in the collapsing of various groups into one subsample. Lumping several disadvantaged groups together may be warranted for statistical reasons, but this strategy may have obscured potentially larger contact effects. Most importantly, it fails to recognize the diversity within and between these groups, and the nature and complexity of (historical and current-day) intergroup dynamics between each respective group and the advantaged group(s) in society. We therefore recommend a stronger academic commitment to collecting data from (specific) disadvantaged groups. Third, in a few samples, we were constrained to use single-item measures, even though this weakness was tackled using long and previously validated scales in other samples (also for control variables, Pytlikzillig et al., 2016). Finally, the last study did not assess mixing attitudes, so we were restraint to focus on outgroup liking. Future research should thus investigate in greater detail the longitudinal effects of outgroup respect and understanding on mixing attitudes. Nonetheless, by showing the (cross-sectional) effects of contact via respect on outgroup liking, in addition to personal

and general mixing attitudes, we cross-validated the pivotal role of respect in the broader scheme of contact.

In conclusion, despite some limitations, with the present set of studies, we advance the field by 1) demonstrating the important role of novel emotional mediators of outgroup understanding and particularly respect in direct and indirect contact effects (even beyond the effects of typical mediators like outgroup threat and trust, as well as over time), 2) replicating our findings across the world including countries and contexts that have been underrepresented in psychological research so far (Thalmayer et al., 2021), and in interethnic as well as interreligious/ethnoreligious settings, 3) testing the effects among both advantaged and disadvantaged groups, 4) notwithstanding a few exceptions, consistently controlling for ingroup contact and ingroup-related mediators to isolate the effects of intergroup contact, and outgroup respect and understanding. Given the nature of the outcome variable we tackled, namely, attitudes towards mixing, we also tap behavioral intentions which have implications for fostering integration and combating segregation in society. The practical implications of this work are plentiful, and, based on our findings, we encourage local policy makers that aim to create cohesion and harmony in mixed communities to follow in the footsteps of Aretha Franklin and focus primarily on respect towards the other.

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Table 1

Overview of studies, including information on the country, sample size, sample, target outgroup(s), context, and type of contact.

	Country	Sample size	Sample	Target outgroup	Context	Type of contact
Pilot study	USA	62	White/European Americans	Ethnic minority members	Interethnic	Direct contact
Study 1. Direct interethnic contact among advantaged and disadvantaged groups						
	Country	Sample size	Sample	Target outgroup	Context	Type of contact
Study 1a	Turkey	172	Turkish	Kurds, Arabs	Interethnic	Direct contact
Study 1b	USA	170	White/European Americans	Black/African and Latinx/Hispanic Americans	Interethnic	Direct contact
Study 1c	USA	172	Black/African Americans	White/European Americans	Interethnic	Direct contact
Study 1d	USA	172	Latinx/Hispanic Americans	White/European Americans	Interethnic	Direct contact
Study 1e	USA	460	White/European Americans	Ethnic outgroups	Interethnic	Direct contact
Study 1f	USA	152	Black, Native, Asian, Latinx, Native Hawaiian or other Pacific Islander Americans	Ethnic outgroups	Interethnic	Direct contact
Study 1g	South Africa	231	White South Africans	Black, Coloured, Indian, Asian South Africans	Interethnic	Direct contact
Study 1h	South Africa	146	Black, Coloured, Indian, Asian South Africans	White South Africans	Interethnic	Direct contact
Study 1i	Belgium	272	Flemish people	Ethnic minorities	Interethnic	Direct contact
Study 1j[*]	Belgium	235	Flemish people	Immigrants	Interethnic	Direct contact
Study 1k[**]	Belgium	217	Flemish people	Turkish people	Interethnic	Direct contact
Study 1l	**Internal meta-analysis**					
Study 2. Indirect interethnic contact effects among advantaged groups						
	Country	Sample size	Sample	Target outgroup	Context	Type of contact
Study 2a	Belgium	235	Flemish people	Immigrants	Interethnic	Extended contact

						and closeness in intergroup friendships
Study 2b[***]	Belgium	217-226	Flemish people	Turkish people, refugees, and homosexual people	Interethnic and based on sexual orientation	Secondary transfer effects
Study 3. Cross-sectional interreligious contact among advantaged and disadvantaged groups						
	Country	Sample size	Sample	Target outgroup	Context	Type of contact
Study 3a	Belgium	170	Christians	Muslims	Interreligious	Direct contact
Study 3b[****]	Belgium	184	Christians	Muslims	Interreligious	Direct contact
Study 3c	Northern Ireland	3769	Catholics	Protestants	Ethnoreligious	Contact frequency
Study 3d	Northern Ireland	5525	Protestants	Catholics	Ethnoreligious	Contact frequency
Study 4. Longitudinal effects of interreligious contact on advantaged and disadvantaged groups						
	Country	Sample size	Sample	Target outgroup	Context	Type of contact
Study 4a	Chile	457	Catholics	Atheists	Interreligious	Direct contact
Study 4b	Chile	293	Atheists, agnostics, and non-adhering people	Catholics	Interreligious	Direct contact

Note. [*]Study 1j uses the same sample as Study 2a, focusing on direct contact.
[**] Study uses the same sample as Study 2b, focusing on direct contact.
[***]Study 2b uses two slightly different subsamples since we excluded immigrants when analyzing attitudes towards refugees (N = 217) and excluded non-heterosexual participants when analyzing attitudes towards homosexual people (N = 226).
[****]Study 3b uses a Christian subsample of the dataset reported in Study 1i.

Table 2

Meta-analytic effect size estimates of positive and negative intergroup contact on personal and general mixing attitudes

Cluster	Effects	*N*	*k*	β	SD_{β}	SD_{res}	90% conf. int.	80% cred. int.
Total set								
	Positive intergroup contact – Personal mixing attitudes	2461	12					
	Total effect			.31	.15	.14	[.23, .39]	[.14, .49]
	Direct effect			.09	.15	.13	[.02, .17]	[-.07, .26]
	Indirect effect through outgroup respect			.10	.07	.00	[.07, .14]	[.10, .10]
	Indirect effect through outgroup understanding			.00	.03	.00	[-.02, .02]	[.00, 00]
	Positive intergroup contact – General mixing attitudes	1163	6					
	Total effect			.38	.12	.11	[.28, .49]	[.24, 52]
	Direct effect			.22	.06	.00	[.17, .27]	[.22, .22]
	Indirect effect through outgroup respect			.10	.05	.00	[.06, .15]	[.10, .10]
	Indirect effect through outgroup understanding			.03	.03	.00	[.01, .06]	[.03, .03]
	Negative intergroup contact – Personal mixing attitudes	2461	12					
	Total effect			-.32	.16	.15	[-.40, -.23]	[-.50, -.13]
	Direct effect			-.21	.13	.12	[-.28, -.14]	[-.36, -.06]
	Indirect effect through outgroup respect			-.02	.04	.00	[-.05, .00]	[-.02, -.02]
	Indirect effect through outgroup understanding			-.01	.01	.00	[-.01, .00]	[-.01, -.01]
	Negative intergroup contact – General mixing attitudes	1163	6					
	Total effect			-.24	.15	.13	[-.36, -.12]	[-.41, -.07]
	Direct effect			-.09	.07	.02	[-.15, -.03]	[-.12, -.07]
	Indirect effect through outgroup respect			-.05	.06	.00	[-.11, .00]	[-.05, -.05]
	Indirect effect through outgroup understanding			.01	.01	.00	[-.01, .02]	[.01, .01]

Note. β = standardized effect size; SD_{β} = observed standard deviation of the effect size; SD_{res} = true residual variance; 90% Conf. int. = confidence interval (i.e., the range of values capture the true effect size 90% of the time when re-sampling the population); 80% Cred. int. = credibility interval (i.e., the range of values that includes the true effect size with 80% probability).

Table 3

Unstandardized estimates (standard errors in brackets) of the indirect effects via outgroup respect and understanding in the mediation models testing the associations of intergroup contact with mixing attitudes

The Pilot Study

Sample: White/Europeans Americans in the US. Additional mediators: outgroup threat and trust in Model 1b.

	Personal mixing attitudes			General mixing attitudes		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.05 (.07)	-.06 (.07)	-	.26** (.10)	.20* (.08)	-
Via understanding	.00 (.07)	-.01 (.07)	-	-.01 (.06)	-.02 (.06)	-
From negative contact	Model 1a	Model 1b		Model 1a	Model 1b	
Via respect	-.01 (.02)	-.01 (.03)	-	.04 (.08)	.03 (.06)	-
Via understanding	.00 (.05)	-.01 (.05)	-	.00 (.04)	-.02 (.04)	-

Study 1a

Sample: Turks in Turkey. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact in Model 1c

	Personal mixing attitudes			General mixing attitudes		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.17* (.07)	.08 (.05)	.10 (.06)	-	-	-
Via understanding	.00 (.01)	.00 (.01)	.00 (.01)	-	-	-
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.04 (.05)	.02 (.02)	.01 (.03)	-	-	-
Via understanding	-.03 (.02)	-.02 (.02)	-.02 (.03)	-	-	-

Study 1b

Sample: White/European Americans in the US. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact in Model 1c

	Personal mixing attitudes			General mixing attitudes		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.31*** (.08)	.18* (.07)	.19* (.08)	-	-	-
Via understanding	-.05 (.04)	-.04 (.03)	-.06 (.04)	-	-	-
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.04 (.06)	-.03 (.04)	-.03 (.05)	-	-	-
Via understanding	-.06 (.03)	-.04 (.03)	-.06 (.04)	-	-	-

Study 1c

Sample: Black/African Americans in the US. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact in Model 1c

	Personal mixing attitudes			General mixing attitudes		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.01 (.02)	.01 (.02)	.01 (.02)	-	-	-

Via understanding	.01 (.02)	.01 (.02)	.01 (.02)	-	-	-
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.01 (.02)	-.01 (.01)	.00 (.01)	-	-	-
Via understanding	.00 (.02)	.00 (.01)	-.01 (.02)	-	-	-

Study 1d

Sample: Latinx/Hispanic Americans in the US. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact in Model 1c

	Personal mixing attitudes			**General mixing attitudes**		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.04 (.04)	.02 (.03)	.01 (.03)	-	-	-
Via understanding	.00 (.01)	.00 (.01)	.00 (.01)	-	-	-
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.02 (.04)	-.01 (.03)	.02 (.03)	-	-	-
Via understanding	.00 (.01)	.00 (.01)	-.01 (.02)	-	-	-

Study 1e

Sample: White/European Americans in the US. Additional mediators: None.

	Personal mixing attitudes			**General mixing attitudes**		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.26*** (.06)	-	-	-	-	-
Via understanding	.00 (.03)	-	-	-	-	-
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.01 (.02)	-	-	-	-	-
Via understanding	.00 (.01)	-	-	-	-	-

Study 1f

Sample: Black, Native, Asian, Latinx, Native Hawaiian or other Pacific Islander Americans in the US. Additional mediators: None.

	Personal mixing attitudes			**General mixing attitudes**		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.14 (.09)	-	-	-	-	-
Via understanding	-.10 (.05)	-	-	-	-	-
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.01 (.01)	-	-	-	-	-
Via understanding	.00 (.02)	-	-	-	-	-

Study 1g

Sample: Whites in South Africa. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact, felt respect,

ingroup trust, and outgroup knowledge in Model 1c

	Personal mixing attitudes			General mixing attitudes		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.07 (.04)	.07 (.04)	.07 (.04)	.08* (.03)	.07* (.03)	.07* (.03)
Via understanding	.06 (.04)	.06 (.04)	.05 (.04)	.05 (.03)	.05 (.03)	.06 (.03)
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.06 (.05)	-.06 (.05)	-.06 (.05)	-.07 (.05)	-.06 (.04)	-.06 (.04)
Via understanding	-.01 (.04)	-.01 (.04)	-.02 (.05)	-.01 (.04)	-.01 (.04)	-.02 (.04)

Study 1h

Sample: Black, Coloured, Indian, and Asian people in South Africa. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact, felt respect, ingroup trust, and outgroup knowledge in Model 1c

	Personal mixing attitudes			General mixing attitudes		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.07 (.07)	.08 (.07)	.06 (.07)	.04 (.03)	.05 (.04)	.04 (.04)
Via understanding	-.01 (.02)	.05 (.04)	.08 (.06)	-.01 (.02)	.02 (.02)	.03 (.03)
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.06 (.06)	.06 (.07)	.10 (.08)	.03 (.03)	.04 (.04)	.06 (.04)
Via understanding	-.01 (.02)	-.12 (.07)	-.04 (.05)	-.01 (.02)	-.05 (.04)	-.02 (.02)

Study 1i

Sample: Flemish people in Belgium. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact, ingroup respect, ingroup understanding, ingroup threat, and ingroup trust in Model 1c

	Personal mixing attitudes			General mixing attitudes		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.08* (.04)	.06* (.03)	.09* (.04)	.08* (.03)	.06* (.03)	.07 (.04)
Via understanding	.00 (.03)	.00 (.03)	.02 (.03)	.08* (.03)	.07* (.03)	.06 (.03)
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.06 (.03)	-.05 (.03)	-.07* (.04)	-.06 (.03)	-.05 (.03)	-.06 (.04)
Via understanding	.00 (.01)	.00 (.01)	-.02 (.03)	.03 (.02)	.02 (.02)	.03 (.02)

Study 1j

Sample: Flemish people in Belgium. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact, ingroup respect, ingroup understanding, ingroup trust, and felt trust in Model 1c

	Personal mixing attitudes			General mixing attitudes		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.11** (.04)	.08* (.04)	.08 (.05)	.09** (.03)	.06** (.02)	.07 (.03)

Via understanding	-.01 (.03)	-.01 (.03)	-.02 (.03)	.03 (.02)	.02 (.02)	.01 (.02)
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.04 (.02)	-.02 (.02)	-.02 (.02)	-.03 (.02)	-.02 (.01)	-.02 (.02)
Via understanding	.00 (.01)	.00 (.01)	.00 (.01)	.00 (.01)	.00 (.00)	.00 (.01)

Study 1k

Sample: Flemish people in Belgium. Additional mediators: outgroup threat and trust in Model 1b, also felt respect and outgroup knowledge in Model 1c

	Personal mixing attitudes			**General mixing attitudes**		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.15*** (.04)	.09** (.03)	.10** (.04)	.19*** (.04)	.11*** (.03)	.12*** (.03)
Via understanding	.05 (.03)	.03 (.03)	.02 (.03)	.01 (.02)	-.01 (.02)	-.04 (.02)
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.17** (.05)	-.10* (.04)	-.11* (.05)	-.20*** (.06)	-.12* (.05)	-.13* (.05)
Via understanding	.01 (.01)	.01 (.01)	.00 (.01)	.00 (.01)	.00 (.01)	-.01 (.01)

Study 2a

Sample: Flemish people in Belgium. Additional mediators: outgroup threat and trust in Model 1b, also ingroup respect, ingroup understanding, ingroup trust, and felt trust in Model 1c, including closeness in ingroup friendships for the second part

	Personal mixing attitudes			**General mixing attitudes**		
From extended positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.06* (.03)	.04 (.02)	.04 (.03)	.05* (.02)	.03* (.02)	.03 (.02)
Via understanding	.01 (.02)	.00 (.01)	-.01 (.02)	.02 (.01)	.01 (.01)	.01 (.01)
From extended negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.06** (.02)	-.04 (.02)	-.04 (.03)	-.04* (.02)	-.03* (.01)	-.03 (.02)
Via understanding	.00 (.01)	.00 (.01)	.00 (.01)	-.01 (.01)	.00 (.01)	.00 (.01)
From closeness in outgroup friendships	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.06** (.02)	.04* (.02)	.04 (.02)	.05** (.02)	.03* (.01)	.03 (.02)
Via understanding	.00 (.02)	-.01 (.01)	-.01 (.01)	.01 (.01)	.01 (.01)	.00 (.01)

Study 2b

Sample: Flemish people in Belgium. Additional mediators: outgroup threat and trust in Model 1b, also felt respect and outgroup knowledge in Model 1c

	Personal mixing attitudes			**General mixing attitudes**		
From positive contact with refugees	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.13*** (.04)	.07* (.03)	.08* (.03)	.15*** (.03)	.09** (.03)	.10** (.03)
Via understanding	.03 (.02)	.02 (.02)	.01 (.02)	.01 (.02)	.00 (.01)	-.03 (.02)

From negative contact with refugees	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.15*** (.04)	-.08** (.03)	-.09** (.03)	-.18*** (.04)	-.11*** (.03)	-.12*** (.03)
Via understanding	.01 (.01)	.01 (.01)	.00 (.01)	.00 (.01)	.00 (.01)	-.01 (.01)
From positive contact with homosexual people	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.04 (.06)	.02 (.03)	.02 (.03)	.05 (.06)	.02 (.03)	.02 (.03)
Via understanding	.02 (.02)	.00 (.01)	.00 (.02)	.03 (.02)	.00 (.01)	-.02 (.02)
From negative contact with homosexual people	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.13* (.07)	-.06 (.04)	-.07 (.04)	-.15* (.07)	-.07 (.04)	-.07 (.04)
Via understanding	.03 (.03)	-.01 (.02)	-.01 (.03)	.04 (.02)	.00 (.02)	-.03 (.02)
Study 3a						
Sample: Christian people in Belgium. Additional mediators: positive and negative ingroup contact, ingroup respect and understanding in Model 1b						
	Personal mixing attitudes			**General mixing attitudes**		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.07 (.05)	.14* (.07)		.09 (.05)	.11 (.06)	
Via understanding	.08* (.04)	-.06 (.06)		.07* (.03)	-.03 (.04)	
From negative contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	-.05 (.05)	-.21 (.11)		-.06 (.04)	-.16 (.08)	
Via understanding	.00 (.03)	.04 (.07)		.00 (.02)	.02 (.04)	
Study 3b						
Sample: Christian people in Belgium. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact, ingroup respect, ingroup understanding, ingroup threat, and ingroup trust in Model 1c						
	Personal mixing attitudes			**General mixing attitudes**		
From positive contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.10* (.05)	.09* (.05)	.08 (.06)	.12* (.06)	.11* (.05)	.09 (.06)
Via understanding	.05 (.04)	.05 (.04)	.05 (.06)	.09* (.04)	.08 (.04)	.08 (.06)
From negative contact	Model 2a	Model 2b	Model 2c	Model 2a	Model 2b	Model 2c
Via respect	-.09 (.05)	-.08 (.05)	-.10 (.07)	-.11 (.06)	-.09 (.05)	-.11 (.06)
Via understanding	.01 (.02)	.01 (.02)	.03 (.04)	.02 (.02)	.02 (.02)	.04 (.04)
Study 3c						
Sample: Catholics in Northern Ireland. Additional mediators: ingroup respect and understanding in Model 1b						
	Personal mixing attitudes			**General mixing attitudes**		

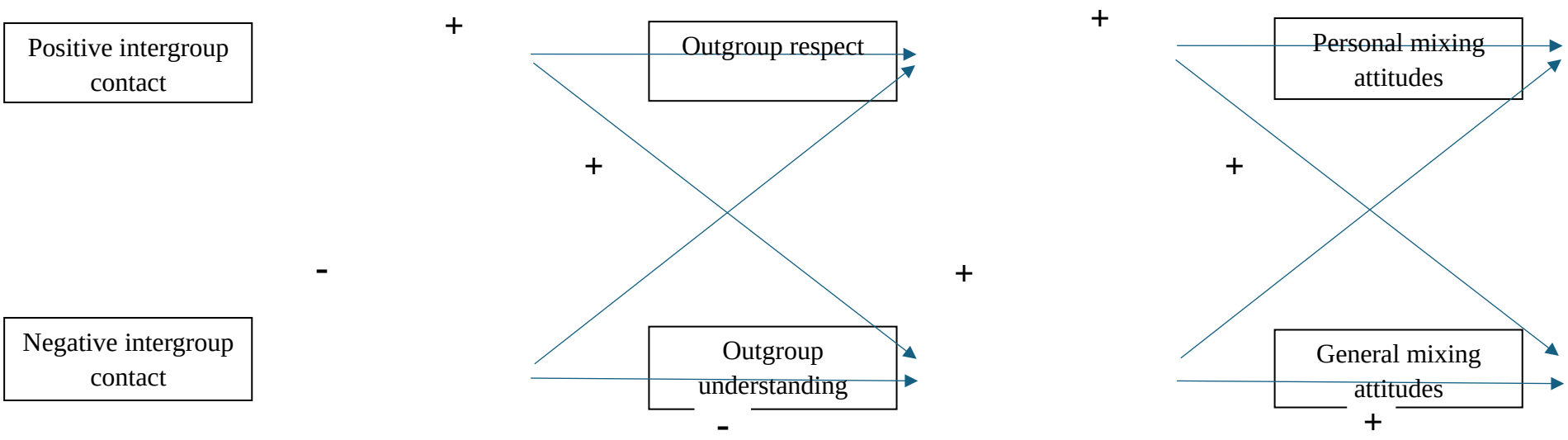
From contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.02*** (.01)	.03*** (.01)	-	.02*** (.01)	.03*** (.01)	-
Via understanding	.01** (.01)	.03*** (.01)	-	.02*** (.01)	.03*** (.01)	-
Study 3d						
Sample: Protestants in Northern Ireland. Additional mediators: ingroup respect and understanding in Model 1b						
	Personal mixing attitudes			**General mixing attitudes**		
From contact	Model 1a	Model 1b	Model 1c	Model 1a	Model 1b	Model 1c
Via respect	.07*** (.01)	.09*** (.01)	-	.07*** (.01)	.09*** (.01)	-
Via understanding	.01* (.00)	.01*** (.00)	-	.02*** (.01)	.03*** (.01)	-
Study 4a						
Sample: Catholics in Chile. Additional mediators: outgroup threat and trust in Model 1b, also positive and negative ingroup contact, felt respect from the ingroup, understanding of the ingroup, and ingroup threat and trust in Model 1c						
			Outgroup liking			
From positive contact	Model 1a		Model 1b		Model 1c	
Via felt respect	.00 (.01)		.00 (.00)		.00 (.00)	
Via understanding	.00 (.01)		.01 (.01)		.01 (.01)	
From negative contact	Model 1a		Model 1b		Model 1c	
Via felt respect	-.01 (.01)		.00 (.01)		.00 (.01)	
Via understanding	.00 (.01)		.00 (.01)		.00 (.01)	
Study 4b						
Sample: Atheists, agnostics, and non-adhering people in Chile. Additional mediators: outgroup threat and trust in Model 1b, also ingroup contact, felt respect from the ingroup, understanding of the ingroup, and ingroup threat and trust in Model 1c						
			Outgroup liking			
From positive contact	Model 1a		Model 1b		Model 1c	
Via felt respect	-.04 (.03)		-.05 (.03)		-.02 (.02)	
Via understanding	.00 (.01)		.00 (.01)		.00 (.01)	
From negative contact	Model 1a		Model 1b		Model 1c	
Via felt respect	.01 (.01)		.01 (.01)		.01 (.01)	
Via understanding	.00 (.01)		.00 (.01)		.00 (.01)	

Note. * p < .05, ** p < .01, *** p < .001.

Figure 0

Conceptual model of the basic model (Panel A) and model test in the Pilot Study (Panel B; Whites in the US)

Panel A


Positive intergroup contact
Negative intergroup contact
Outgroup respect
Outgroup understanding
Personal mixing attitudes
General mixing attitudes
+
+
-
+
-
+
+
+

Panel B

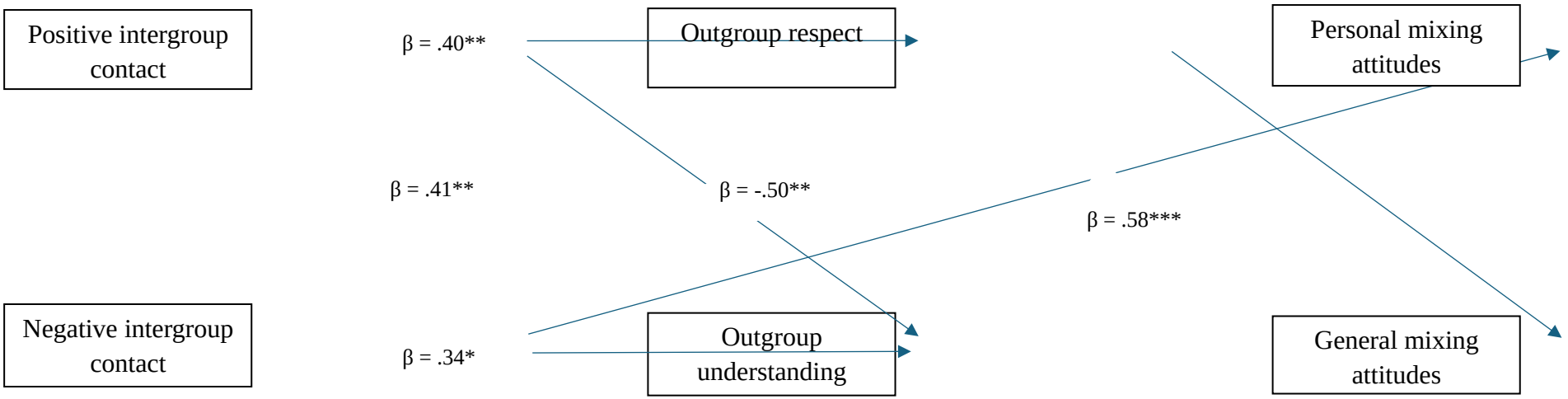
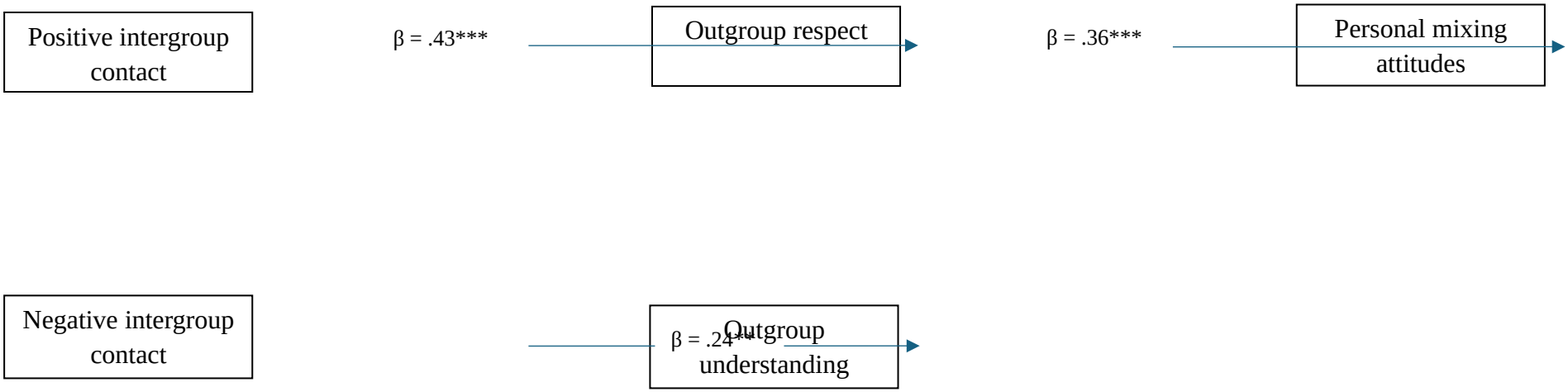

Positive intergroup contact
Negative intergroup contact
Outgroup respect
Outgroup understanding
Personal mixing attitudes
General mixing attitudes
β = .40**
β = .41**
β = -.50**
β = .34*
β = .58***

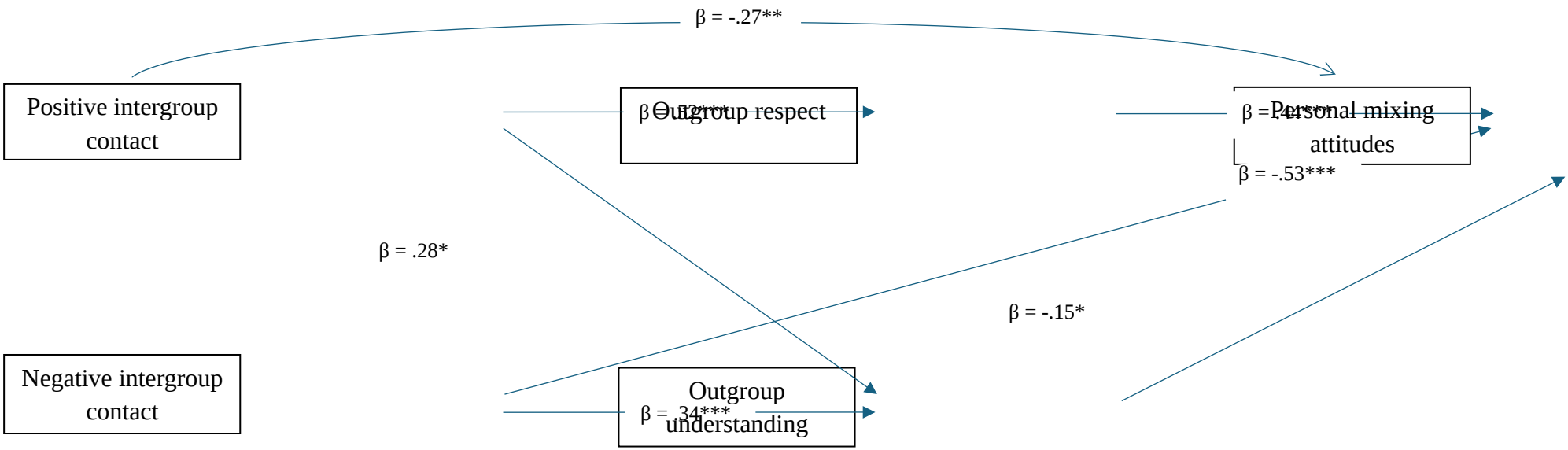
Figure 1

Model test in Study 1a (Panel A; Turks in Turkey), Study 1b (Panel B; White/European Americans), Study 1c (Panel C; Black/African Americans), Study 1d (Panel D; Latinx/Hispanic Americans), Study 1e (Panel E; White/European Americans), Study 1f (Panel F; Black, Native, Asian, Latinx, Native Hawaiian or other Pacific Islander Americans), Study 1g (Panel G; White South Africans), Study 1h (Panel H; Black, Coloured, Indian, Asian South Africans), Study 1i (Panel I; Flemish Belgians), Study 1j (Panel J; Flemish Belgians), Study 1k (Panel K; Flemish Belgians)

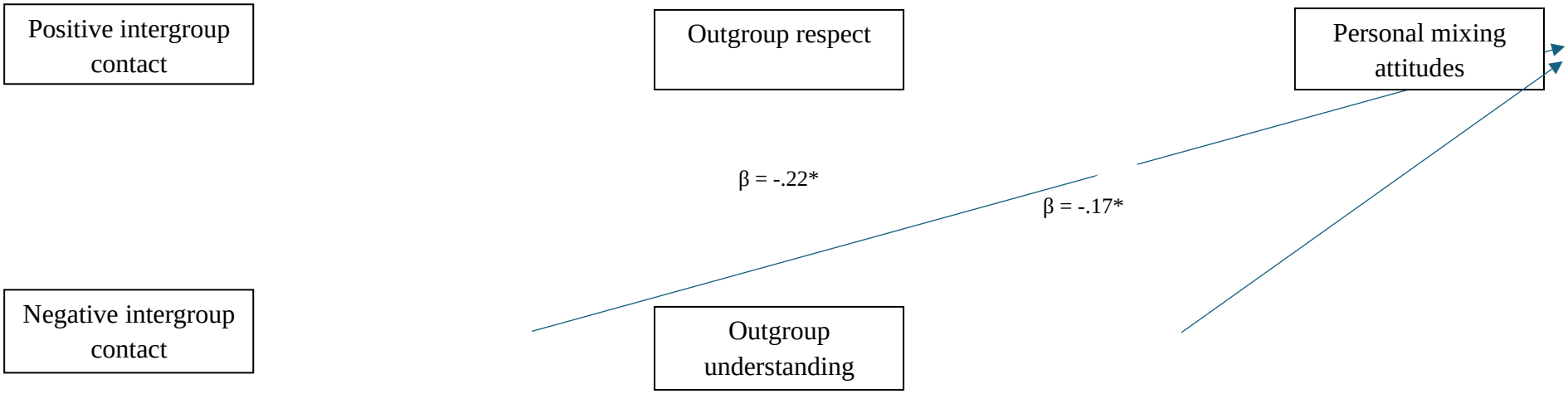
Panel A (Study 1a)



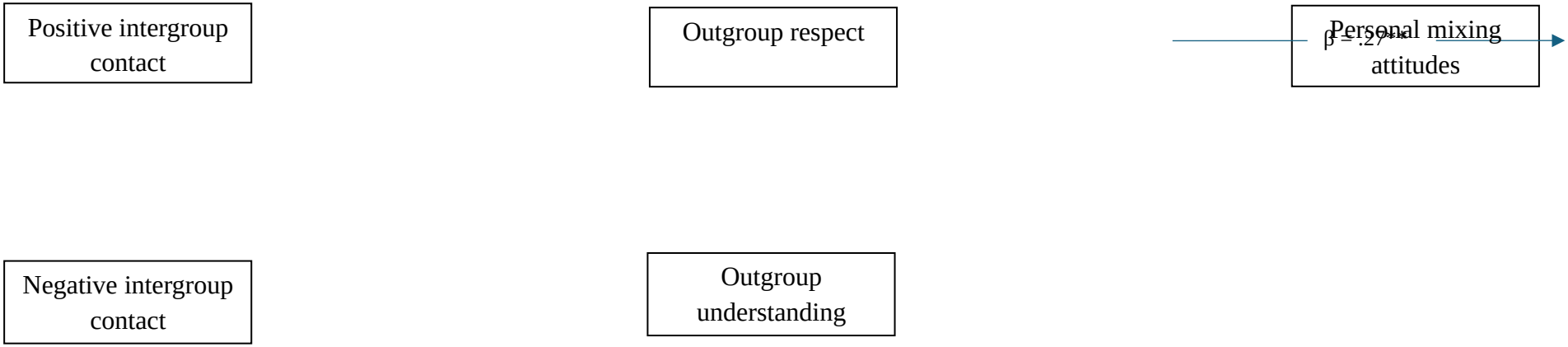
Panel B (Study 1b)



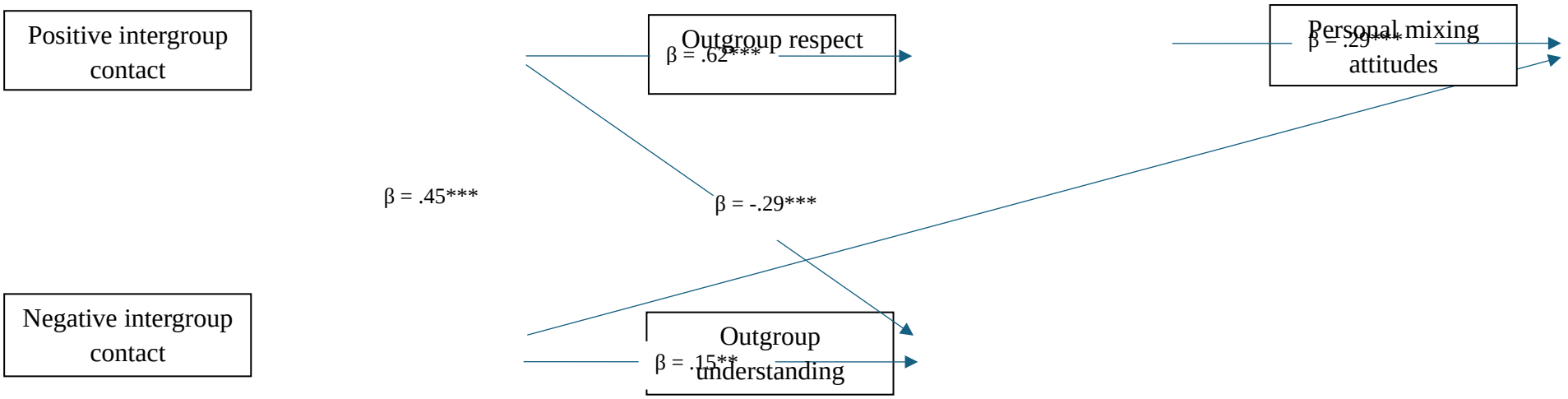
Panel C (Study 1c)



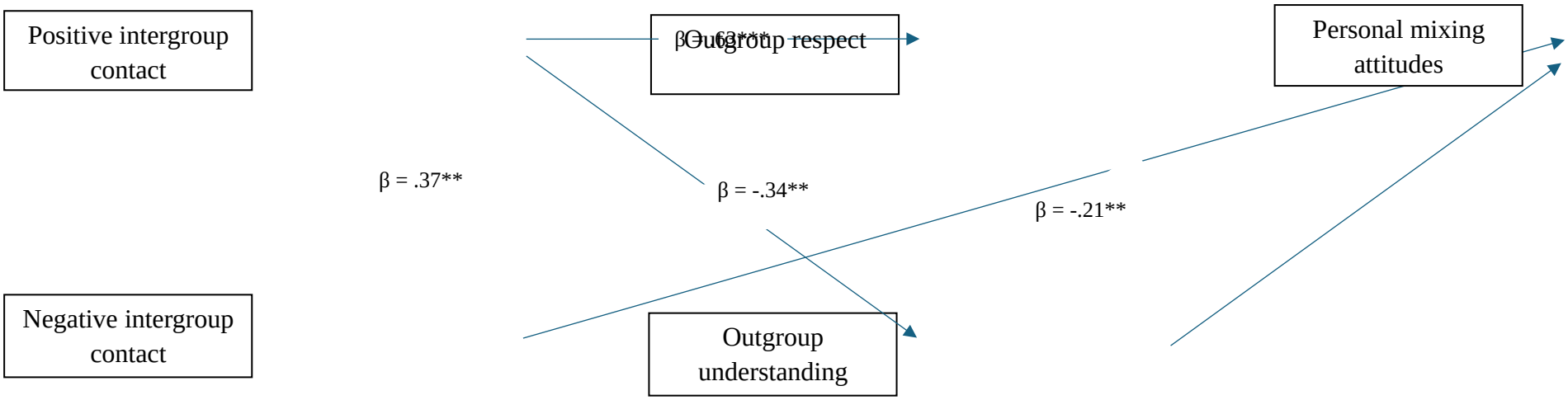
Panel D (Study 1d)



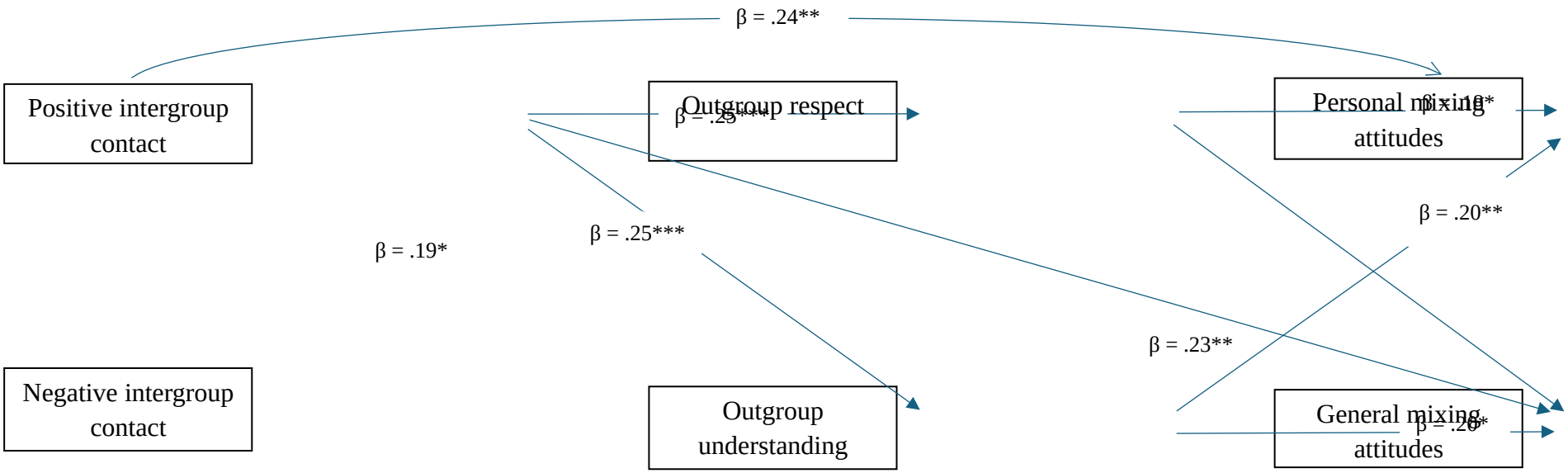
Panel E (Study 1e)



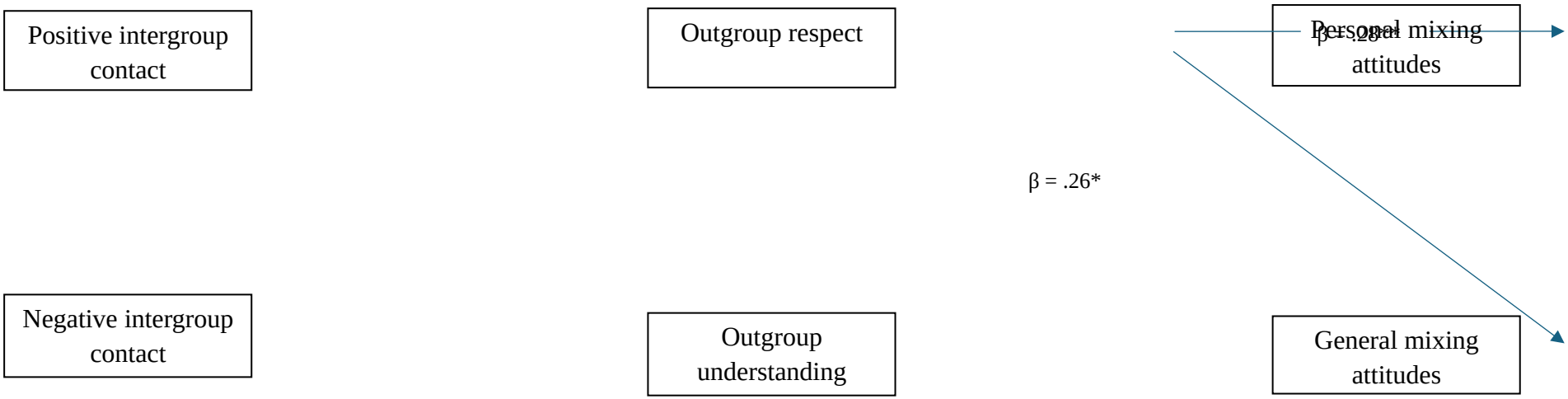
Panel F (Study 1f)



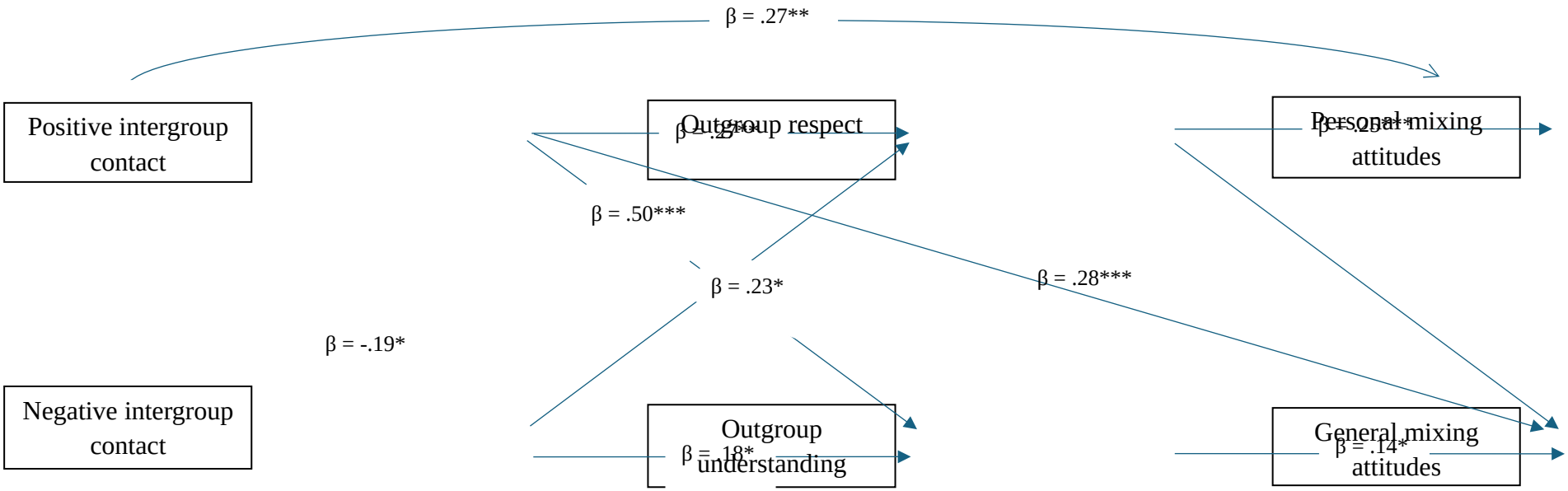
Panel G (Study 1g)



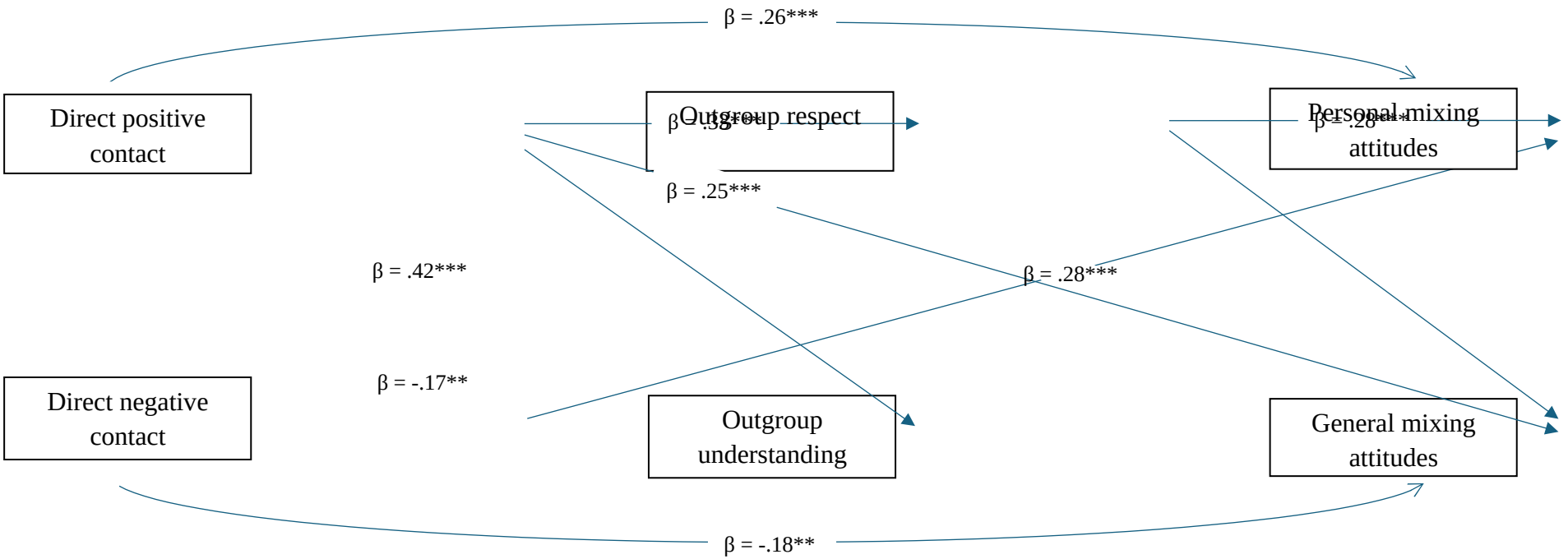
Panel H (Study 1h)



Panel I (Study 1i)



Panel J (Study 1j)



Panel K (Study 1k)

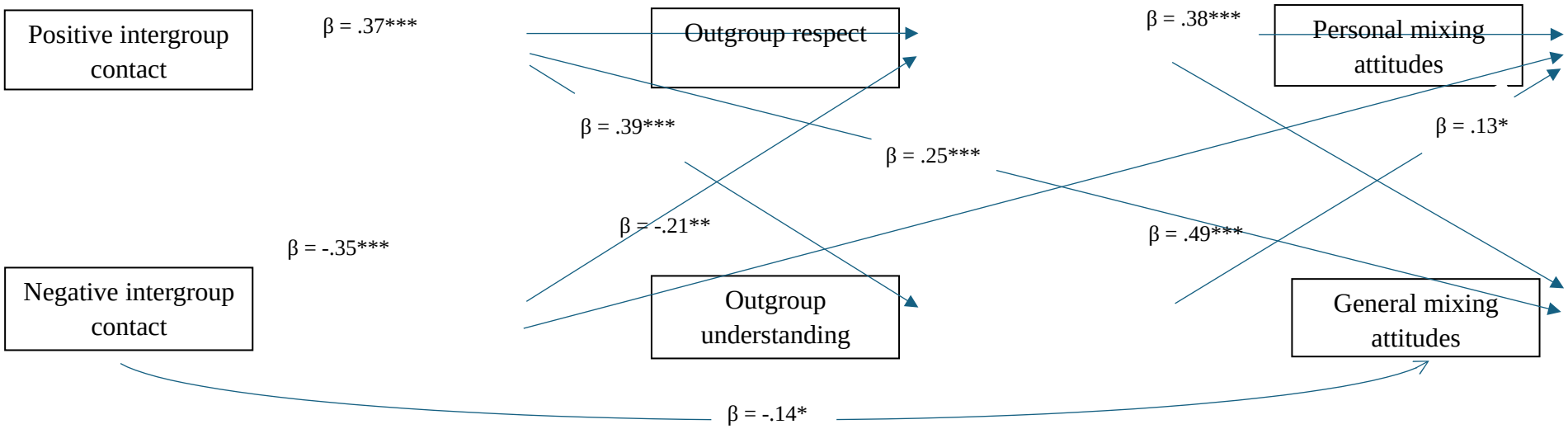
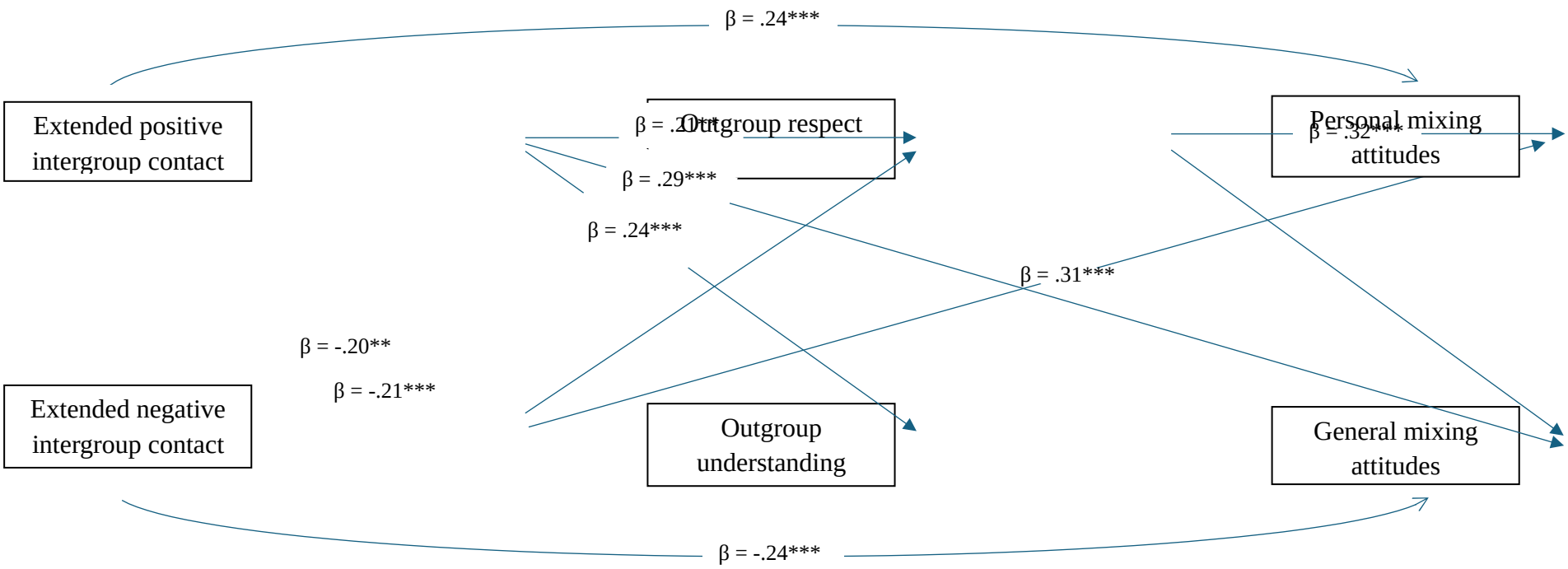


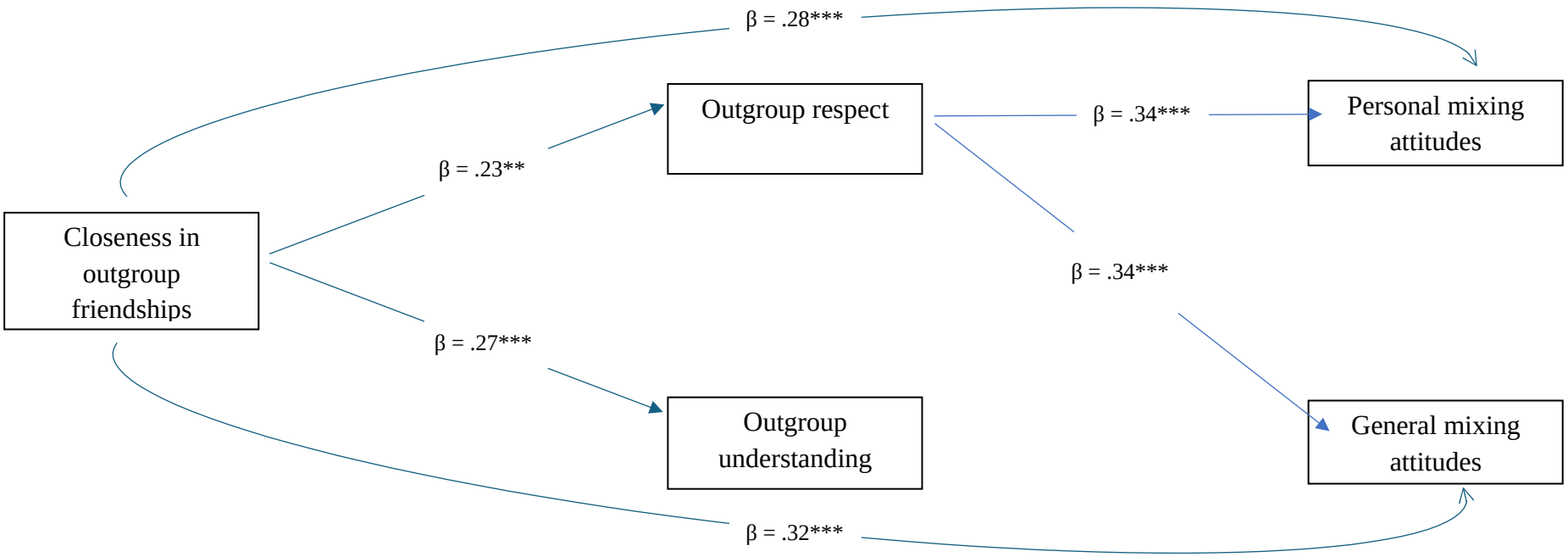
Figure 2

Model test in Study 2a using extended contact (Panel A.1; Flemish Belgians) and friendship closeness (Panel A.2; Flemish Belgians) and in Study 2b using contact with refugees (Panel B.1; non-immigrant Belgians) and contact with homosexual people (Panel B.2; heterosexual Belgians)

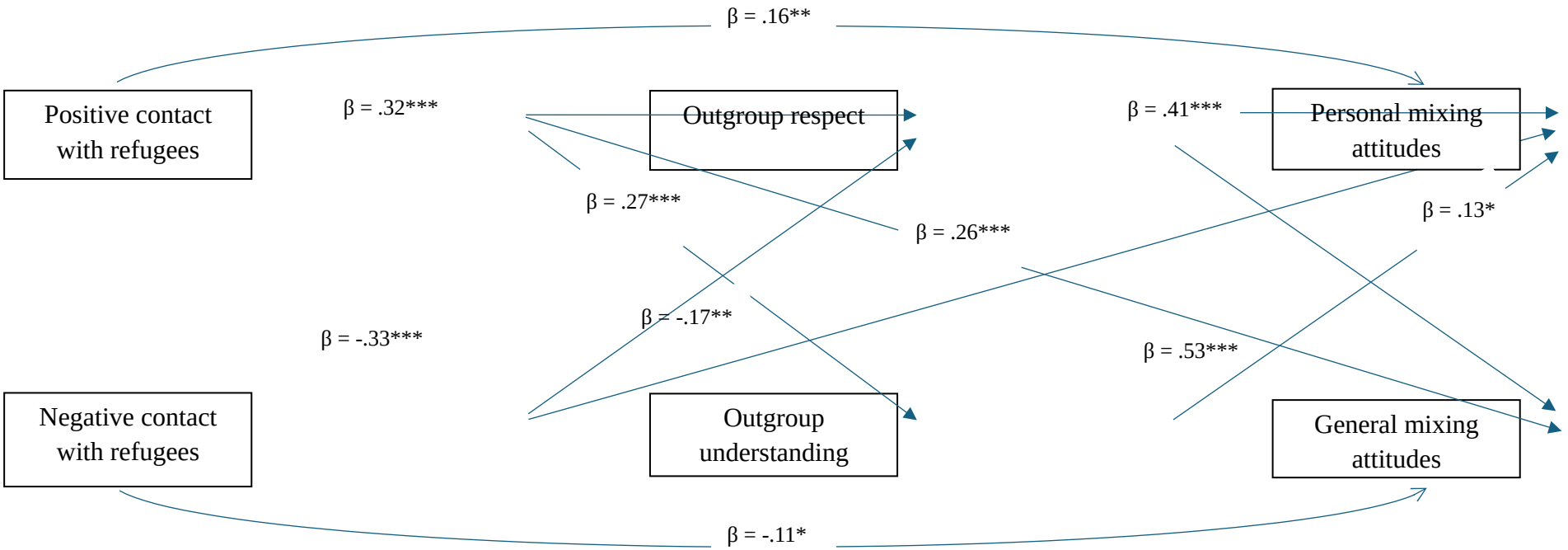
Panel A.1 (Study 2a)



Panel A.2 (Study 2a)



Panel B.1 (Study 2b)



Panel B.2 (Study 2b)

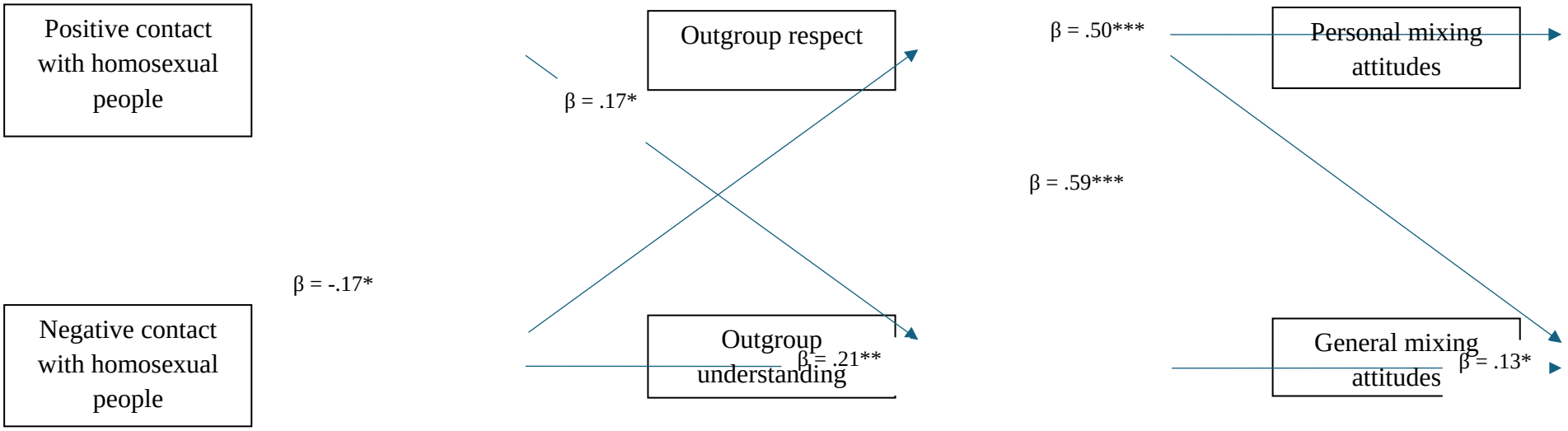
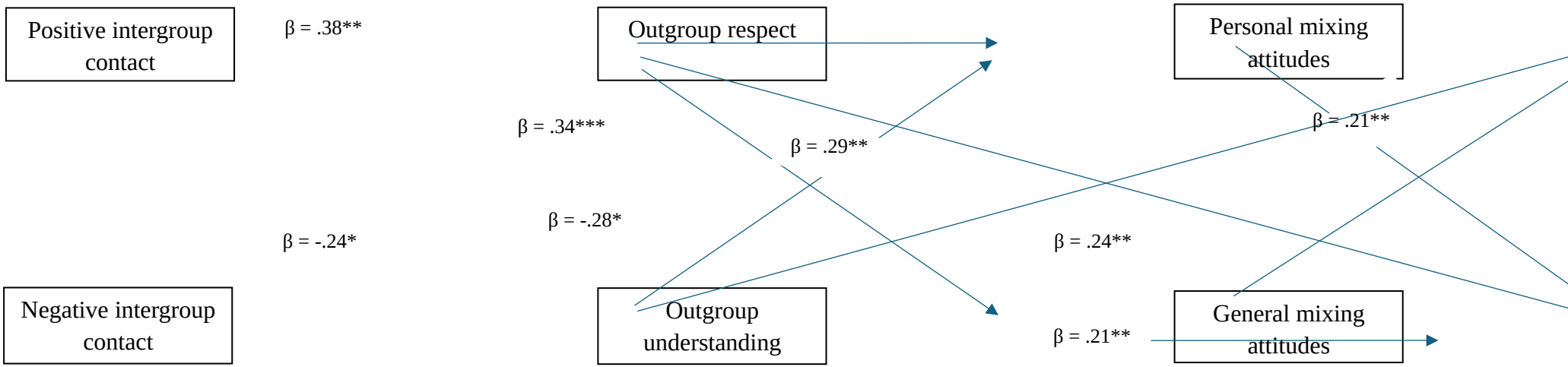


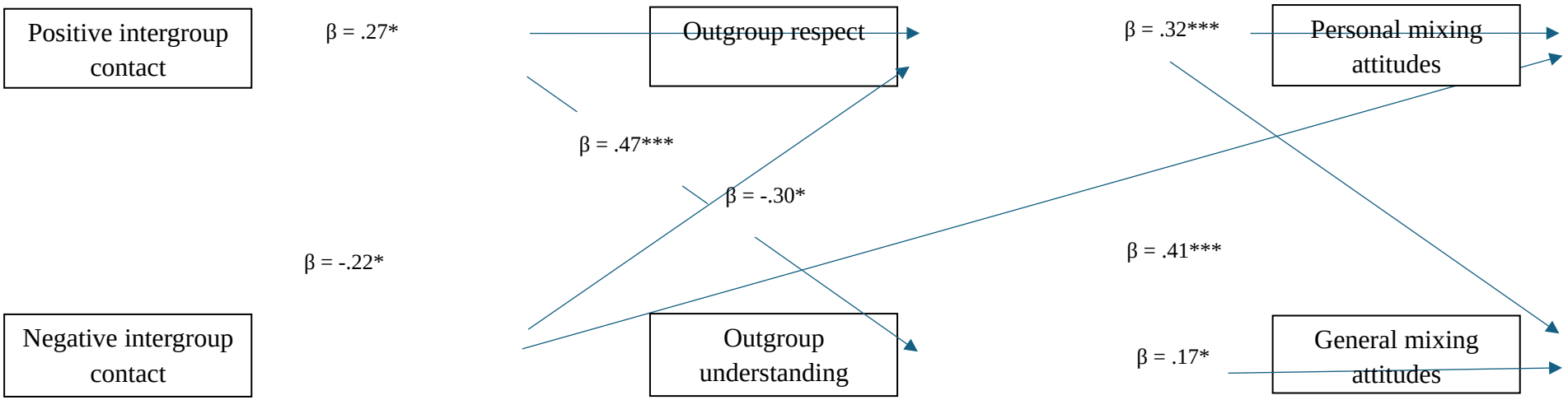
Figure 3

Model test in Study 3a (Panel A; Christian Belgians), Study 3b (Panel B; Christian Belgians), Study 3c (Panel C; Catholic Northern Irelanders), Study 3d (Panel D; Protestant Northern Irelanders)

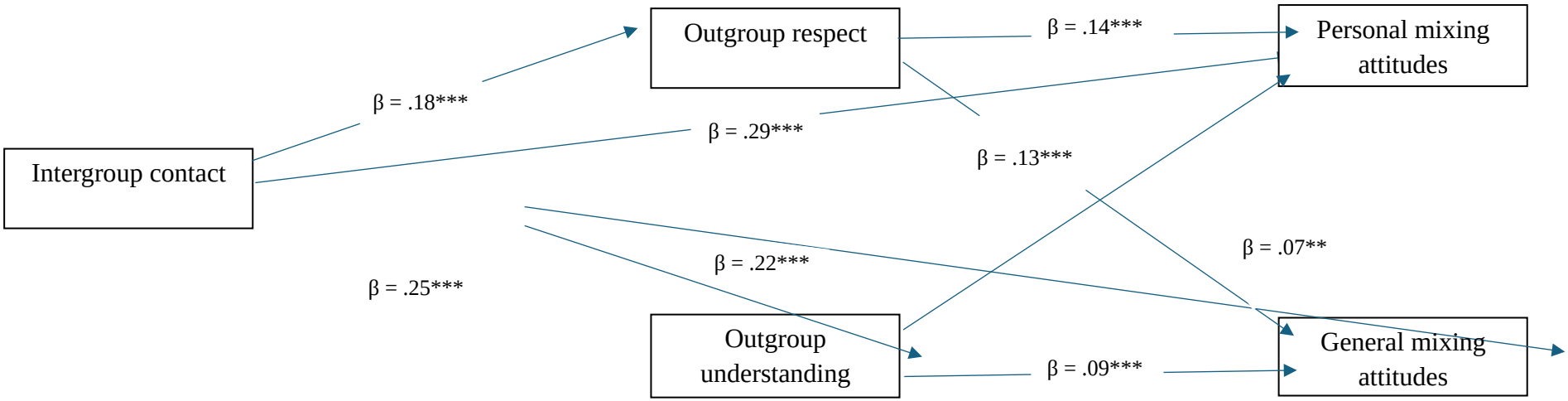
Panel A (Study 3a)



Panel B (Study 3b)



Panel C (Study 3c)



Panel D (Study 3d)

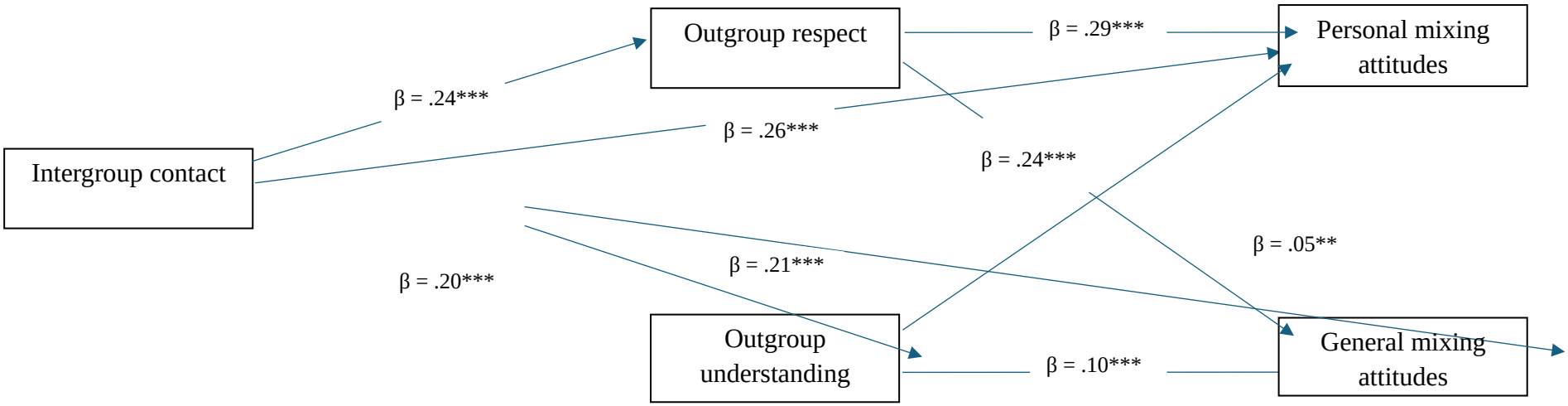
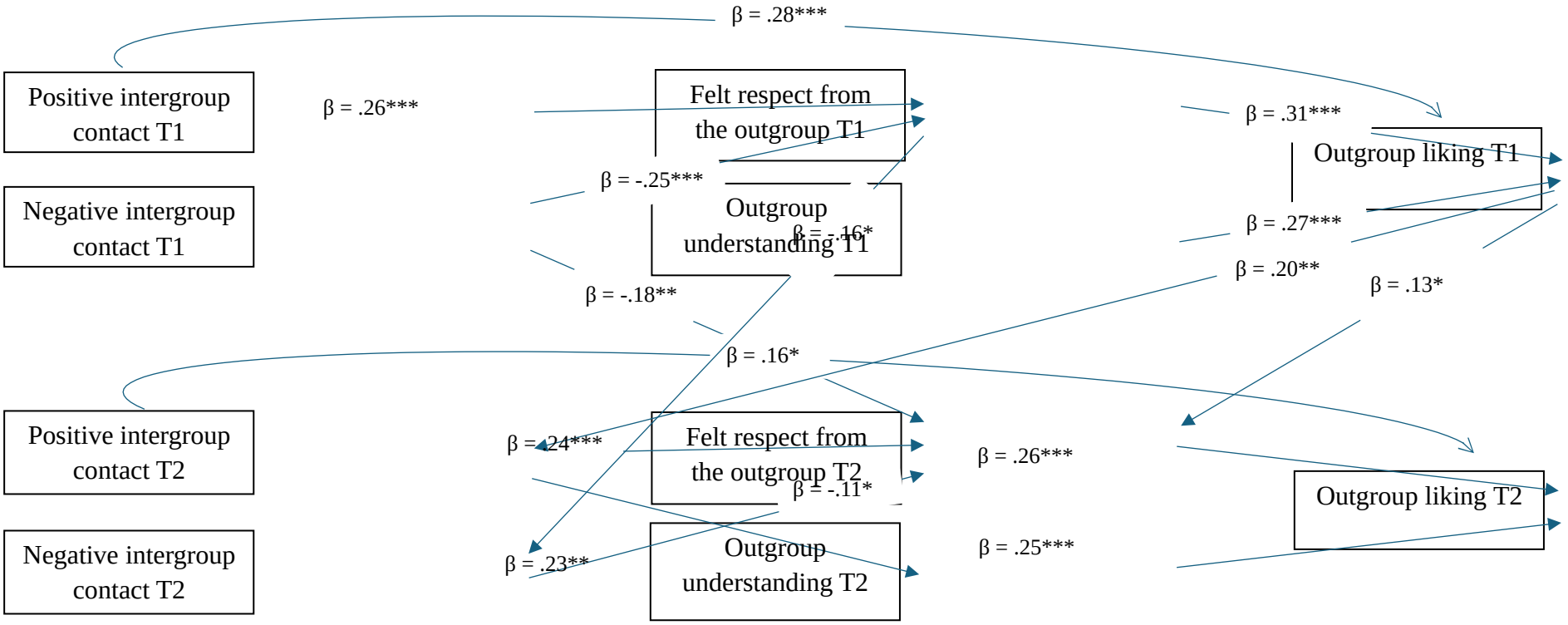


Figure 4

Longitudinal model test in Study 4a (Panel A; Catholic Chileans), Study 4b (Panel B; Atheists, agnostics, and non-adhering Chileans)

Panel A (Study 4a)



Panel B (Study 4b)

