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MODELING THE DYNAMICS OF POSITIVE AND NEGATIVE CONTACT: THE ROLE OF AFFECTIVE VARIABLES, DEPROVINCIALIZATION, AND INDIVIDUAL DISPOSITIONS

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ABSTRACT

In recent years intergroup contact research has called for analyzing the effects of both positive and negative contact experiences on attitudes, affective variables, and intergroup appraisals and the possible explanatory role of individual differences in such effects. Relying on these research topics and to the related literature, we conducted five studies with different methodologies: three cross-sectional (N_{Study1}=347, N_{Study2}=307, N_{Study3}=374), one longitudinal (N_{Study4}=565), and one employing a diary method (N_{Study5}=365). Throughout these studies, we examined how positive and negative contact with various target groups (i.e., immigrant people, Muslim people, and gay people) are associated with several prejudice indexes (i.e., attitudes, islamophobia, prejudice toward the outgroup, subtle prejudice, and positive and negative emotions felt toward the outgroup). In studying these relationships, we investigated the mediational role of intergroup anxiety, empathy, and deprovincialization as well as the joint effect of positive and negative contact. In addition, we explored the role of prejudice- and prosociality-related dispositional variables (i.e., SDO, quiet ego, NFC, entitlement, and agreeableness) that in past research have been associated both to intergroup contact and to prejudice.

Results consistently showed that anxiety, empathy, and deprovincialization are robust mediators of both positive and negative contact effects on attitudes and prejudice. Moreover, we found consistent evidence for interactions between positive and negative intergroup contact in all the five studies. On one hand, positive contact buffered the detrimental effects of negative contact on outgroup attitudes and other dependent variables (*buffering* effect). On the other hand, negative contact enhanced the beneficial effects of positive contact (*facilitation* effect).

As regard to the effects of individual dispositions, they were associated with most of the intergroup outcomes. Particularly, SDO and quiet ego showed strong and opposite associations with outgroup evaluations, affective variables, and deprovincialization. The main effects of positive and negative contact were resistant to the influence of dispositional variables, and also controlling for socially desirable responding and socio-demographic variables (i.e., age, gender, level of education).

Furthermore, distinguishing between intra-individual variations and inter-individual variations in positive and negative contact (in Studies 4 and 5) we found that not only

having more positive and negative contact than other individuals was reliably associated to outgroup attitudes and prejudice, but also experiencing more positive and negative contact than usual had specific effects on outcome variables. These results highlight the importance of having frequent and positive contact interactions.

RIASSUNTO

Negli ultimi anni la ricerca sul contatto intergruppi ha esortato ad analizzare gli effetti di esperienze di contatto sia positive che negative su atteggiamenti, variabili affettive e valutazioni intergruppi e ad esplorare il possibile ruolo delle differenze individuali nello spiegare tali effetti. Sulla base di queste linee di ricerca e della letteratura ad esse correlata, abbiamo condotto 5 studi impiegando diverse metodologie: 3 studi correlazionali ($N_{Studio1}$=347, $N_{Studio2}$=307, $N_{Studio3}$=374), uno studio longitudinale ($N_{Studio4}$=565), ed uno studio in cui è stato somministrato un diario giornaliero ($N_{Studio5}$=365). Attraverso tali studi, abbiamo analizzato in che modo il contatto positivo e negativo con gruppi target diversi (i.e., persone immigrate, persone musulmane e persone omosessuali) si associa a vari indici di pregiudizio (i.e., atteggiamento, islamofobia, pregiudizio verso l'outgroup, pregiudizio sottile, ed emozioni positive e negative nei confronti dell'outgroup). Nello studio di queste relazioni, abbiamo indagato il ruolo mediatore di ansia intergruppi, empatia e deprovincializzazione, così come l'effetto congiunto del contatto positivo e negativo. Inoltre, abbiamo esplorato il ruolo di alcune variabili di differenza individuale legate al pregiudizio e alla prosocialità (i.e., SDO, quiet ego, NFC, entitlement e amicalità), che in ricerche precedenti hanno mostrato associazioni significative sia con il contatto che con il pregiudizio.

I risultati hanno mostrato in modo consistente che ansia, empatia e deprovincializzazione sono mediatori degli effetti del contatto sia positivo che negativo su atteggiamento e pregiudizio. Inoltre, abbiamo trovato ampie conferme dell'interazione tra contatto positivo e negativo in tutti i cinque studi. Da un lato, il contatto positivo ha un effetto di protezione contro la dannosità del contatto negativo (effetto buffer). Dall'altro, gli effetti benefici del contatto positivo sono potenziati dalla presenza di contatti negativi (effetto di facilitazione).

Per quanto riguarda gli effetti delle variabili disposizionali, esse erano associate alla maggior parte delle variabili intergruppi. In particolare, SDO e quiet ego hanno mostrato di avere associazioni forti e di segno opposto con gli indici di valutazione dell'outgroup, le variabili affettive e la deprovincializzazione. Gli effetti principali del contatto positivo e negativo si sono dimostrati resistenti all'influenza delle variabili disposizionali ed anche controllando per l'effetto della desiderabilità sociale e per le caratteristiche demografiche

dei partecipanti (i.e., età, genere e livello di istruzione). Inoltre, distinguendo tra le variazioni intra- ed inter-individuali del contatto positivo e negativo (negli Studi 4 e 5), abbiamo trovato che non solo avere più contatti positivi e negativi delle altre persone era significativamente associato ad atteggiamento e pregiudizio, ma anche avere più esperienze di contatto del solito aveva effetti specifici sulle variabili finali. Questi risultati evidenziano l'importanza di avere interazioni frequenti e positive.

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CHAPTER I

RECENT ADVANCEMENTS IN INTERGROUP CONTACT RESEARCH

Intergroup contact theory

Originally proposed by Allport (1954), the contact hypothesis has gradually become one of the most influential theoretical framework in prejudice reduction research. According to Allport, favourable encounters between people belonging to different groups can improve intergroup attitudes and relations. In particular, intergroup contact would be more likely to reduce prejudice if four conditions were met: there should be equal status among the individuals who meet, the contact situation should require cooperation and have to involve compatible goals between groups, and contact should be supported by institutions.

A large body of research has studied the contact hypothesis confirming the power of positive intergroup contact to reduce prejudice and foster more harmonious intergroup relations (Brown & Hewstone, 2005; Pettigrew & Tropp, 2006). A strong evidence for the contact hypothesis comes from a large meta-analysis conducted by Pettigrew and Tropp (2006), which covered 515 studies (including 713 independent samples), based on a total of over 250,000 participants. Results showed that positive contact was significantly associated with lower levels of prejudice, suggesting that contact is an effective tool for reducing prejudice.

Moreover, the authors found that Allport's optimal contact conditions were not necessary for contact to reduce prejudice but, when present, they lead to greater prejudice reduction. Additionally, Pettigrew and Tropp found that the size of the contact effect varied as a function of many moderating factors, including contact setting, target group, measures, and majority vs minority group status. Indeed, the effect of contact was greater: in laboratory and recreational than in educational and residential settings; for target groups based on sexual-orientation and ethnicity than for those based on physical or mental handicap; for 'affective' measures (of emotions and feelings) than for 'cognitive'

measures (of beliefs and stereotypes); and for majority-status than for minority-status groups.

How does intergroup contact reduce prejudice?

Multiple mechanisms have been proposed to explain how positive intergroup contact can reduce prejudice. A particularly important mediating mechanism involves emotional and affective factors, with evidence showing that intergroup contact may operate by reducing negative affective reactions (i.e., intergroup anxiety, threat) toward outgroup members and the group as a whole, or by increasing positive affective ties (i.e., empathy, trust). Pettigrew and Tropp (2008), in another meta-analysis, revealed that, although also cognitive processes can contribute to the effects of intergroup contact, affective factors seem to be much more influential. Specifically, Pettigrew and Tropp (2008) concluded that anxiety and empathy appears to be a more important link between contact and reduced prejudice than increased knowledge of the outgroup.

Another possible mediator of the contact-prejudice relationship that did not received much attention is deprovincialization, defined by Pettigrew (1997) as a less ingroup-centric worldview fostering openness to other cultures and outgroups. In particular, Pettigrew refers to the possibility that intergroup contact broadens our experience, letting us be aware that there are other cultural standards to interpret the world, and this process can promote more acceptance and positive attitudes towards other groups.

In the next paragraphs, we will review the literature concerning intergroup emotions and deprovincialization with a particular focus on the studies that provide evidence for their mediational role of in the relationship between contact and prejudice.

Intergroup anxiety

Intergroup anxiety has been defined as an arousal that stems from the anticipation of negative consequences for the self during future interactions with outgroup members (Stephan, 2014; Stephan & Stephan, 1985).

Stephan and Stephan (1985) argued that people have feelings of nervousness and discomfort when anticipating encounters with members of different social groups because

they hold a series of negative expectations, including fear of embarrassment, rejection, ridicule, or simply misunderstanding. Notably, intergroup anxiety leads to narrowed focus of attention, which can in turn determine bias in information processing, resulting in greater stereotyping, more homogeneous perceptions of outgroup members and confirmation of negative expectations (Islam & Hewstone, 1993; Wilder & Simon, 2001). For all these reasons, intergroup anxiety has negative implications for intergroup relations, for instance fostering contact avoidance (e.g., Plant & Devine, 2003) and defensive behavioral responses that may poison contact experiences (Stephan & Stephan, 1985). However, clinical evidence suggests that progressive and repeated exposure to anxiety-producing stimuli can effectively decrease perceived levels of anxiety (e.g., Barlow, 1988).

One of the major effects of intergroup contact is an increase in the possessed information about a given outgroup member; such information is capable of shaping emotions and evaluations of the group as a whole (Zagefka et al., 2017), thus revising distorted beliefs and reducing anxiety and other negative feelings toward the outgroup (Paolini, Harris, & Griffin, 2016). Indeed, in a study by Blascovich, Mendes, Hunter, Lickel, and Kowai-Bell (2001) it was found that participants who had less prior contact with outgroup members showed higher threat-style physiological responses during intergroup interactions than those who had more past contact experiences. Furthermore, a large body of evidence has shown that positive contact experiences is associated to a reduction in intergroup anxiety (Islam & Hewstone, 1993; Paolini, Hewstone, Cairns, & Voci, 2004; Voci & Hewstone, 2003) and more favorable attitudes toward outgroups (Brown & Hewstone, 2005; Pettigrew & Tropp, 2006).

A first test of the mediational role of intergroup anxiety has been conducted by Islam and Hewstone (1993). The authors considered intergroup contact between Muslims and Hindus in Bangladesh. Results showed that quantity and quality of contact with members of the other religious group (Muslims or Hindus) were associated with better outgroup attitudes and increased perceived outgroup variability and these effects were partially mediated by reduced intergroup anxiety. In another study, conducted in northern Italy, Voci and Hewstone (2003) examined intergroup contact between Italian university students and immigrant people and its associations with various measures of outgroup evaluation (i.e., outgroup attitudes, subtle prejudice, and outgroup variability). They also

assessed intergroup anxiety and category salience during contact. Results showed that intergroup contact was associated with increased outgroup variability, better outgroup attitudes and less subtle prejudice; the last two effects were mediated by intergroup anxiety. Moreover, contact was more effective in reducing anxiety and improving outgroup evaluations when category salience was high.

Empathy

Empathy, which has been defined as an emotional response congruent with the perceived welfare of another person (Batson et al., 1997), proved to be one of the most important affective variables involved in contact experiences (e.g., Brown & Hewstone, 2005; Pettigrew & Tropp, 2008).

This affective response is often stimulated by perspective taking, a cognitive process that helps the perceiver to see the world through the other person's eyes and deeply understand his or her condition. Thus, empathy is generally regarded as encompassing both an affective and a cognitive component (e.g., Davis, 1994; Stephan & Finlay, 1999). Stephan and Finlay (1999; see also Davis, 1994) further distinguished between two forms of affective empathy: reactive empathy, which refers to emotions felt in reaction to the other's plight, and parallel empathy, which refers to emotions similar to those experienced by the other person. When the other person belongs to a stigmatized group and suffers because of his or her disadvantaged condition, reactive empathy typically includes emotions such as sympathy, tenderness, and compassion (Batson et al., 1997), while parallel empathy may include a variety of emotions ranging from sadness to anger and indignation (Dovidio et al., 2004).

Indeed, perspective taking and empathy in general have a number of positive consequences for intergroup relations, such as weakening stereotype endorsement and ingroup bias (Galinsky & Moskowitz, 2000) and promoting helping and prosocial behaviors (Batson, 2010). Research has shown that experiencing empathy for a member of a stigmatized group can lead to increased caring for that member, and to improved attitudes toward the stigmatized group as a whole (Batson & Ahmad, 2009). Other studies have shown that positive contact increases empathic feelings towards outgroup members, which in turn are associated with improved attitudes toward the outgroup (Capozza, Vezzali, Trifiletti, Falvo, & Favara, 2010; Harwood, Hewstone, Paolini, & Voci, 2005;

Pagotto, Voci, & Maculan, 2010; Turner, Tam, Hewstone, Kenworthy, & Cairns ,2013), acknowledging empathy as a key mediator of contact (Pettigrew & Tropp, 2008; Swart, Hewstone, Christ, & Voci, 2011). This suggests that cross-group contact increases the ability to see things from an outgroup member's point of view and, as a result, positive affect felt toward known members can be extended to the whole outgroup. Consistent with this, Harwood et al. (2005) found that perspective taking developed during interactions with one's own grandfather was associated with better evaluations of the elderly in general. Similarly, Pagotto et al. (2010) found that contact between hospital workers and foreigner patients increased empathy towards those patients, which in turn was related to more positive outgroup attitudes. Additional evidence comes from a 3-way longitudinal study conducted by Swart et al. (2011) in South Africa, in which cross-group friendship, empathy, anxiety, and various intergroup outcomes (i.e., outgroup attitudes, perceived group variability, and negative action tendency) were measured. Results showed that cross-group friendships were positively associated with outgroup attitudes and perceived outgroup variability and were negatively associated with negative action tendencies via empathy. Intergroup anxiety mediated only the relation between cross-group friendships and perceived outgroup variability.

Deprovincialization

The deprovincialization hypothesis has been proposed by Pettigrew (1997, 1998) to denote a less ingroup-centric worldview fostering a common sense of belonging and openness to other cultures. According to Pettigrew, intergroup contact broadens our experience, allowing us to be open toward other cultural standards and worldviews, while not necessarily disparaging those of the ingroup. In this broad sense, deprovincialization does not simply represent an abandonment of ethnocentrism, but a widening of social perceptions and appraisals (Pettigrew, 2011; Pettigrew & Tropp, 2013): the process of knowing the traditions, norms, and customs of other groups conveyed by intergroup contact can result in a less "provincialized" view of the world and in a growing acceptance of other peoples and cultures (Pettigrew, 2011).

The deprovincialization hypothesis as conceptualized by Pettigrew (1997, 1998, 2011) has not yet received a clear empirical test. Some of the studies on this topic adopted a narrower operationalization of deprovincialization, conceptualizing the phenomenon as

ingroup reappraisal, and inferring its presence from less positive ingroup attitudes or low levels of ingroup identification (e.g., Pettigrew, 2009; Tausch et al., 2010). For instance, Pettigrew (2009) measured deprovincialization as (reverse-scored) ingroup identification, and found that intergroup contact between German people and immigrants predicted less ingroup identification, which in turn was associated with more positive evaluations of immigrants and other outgroups not directly involved in the contact situation (i.e., gay and homeless people). Green, Visintin, and Sarrasin (2018) found that positive encounters between Swiss citizens and immigrants in Switzerland were related to more permeable national ingroup boundaries (i.e., to more deprovincialization), as measured by questions regarding important criteria for being truly Swiss.

However, the process described by Pettigrew (1997, 2011) seems to go beyond a mere change in the way individuals view their ingroups. In particular, Pettigrew suggested that deprovincialization involved a transformation in how individuals interpret and manage the world in general. Verkuyten, Thijs, & Bekhuis (2010) found that contact opportunity with ethnic minorities in a classroom in Netherlands was related to more ingroup distancing, due to increasing support for multiculturalism. These findings suggest that a deprovincialized view promotes an increased knowledge and understanding of cultural differences. According to Lolliot et al. (2013), a multicultural view of the world can be related to a reappraisal of the ingroup's standpoint and should lead to greater tolerance and inclusion of minority groups and cultures, hence representing deprovincialization.

Brewer (2008) extended the notion of deprovincialization, interpreting the construct in broader terms. The author suggested that intergroup contact may lead individuals to cognitively represent their ingroups in a more complex manner, considering the interconnections between their multiple group memberships (i.e., social identity complexity, see Roccas & Brewer, 2002). The hypothesis of social identity complexity was tested in two studies, respectively conducted in Germany and Northern Ireland (Schmid, Hewstone, & Tausch, 2014). When considering contact between Germans and Turks, Schmid et al. found that Germans' positive contact with Turks was related to greater social identity complexity. In a second study, considering contact between Catholics and Protestants in Northern Ireland, the authors found that social identity complexity explained the positive relationship between intergroup contact with the

religious-based outgroup (i.e. Protestants or Catholics) and favorable attitudes not only toward the religious-based outgroup, but also toward other minorities (i.e., Asian, Black, and gay people).

Despite the heterogeneity of measures and conceptualizations, findings across various studies showed consistent evidence that deprovincialization is of primary relevance for intergroup relations. For instance, Verkuyten, Martinovic, and Smeekers (2014) found that deprovincialization, operationalized as cultural relativism and perspective taking (or anti-parochialism), was associated with more acceptance of immigrants' cultural rights. Using the same measure for deprovincialization, and corroborating these findings, Verkuyten and Martinovic (2015) found that people who more strongly endorsed cultural relativism felt they were part of an overarching national community and were more inclined to recognize discrimination of immigrants, while being more willing to protest against it. Although the existing evidence for the beneficial influence of various constructs labeled as deprovincialization on intergroup relations, we believe that the deprovincialization phenomenon, as originally conceived by Pettigrew (1997, 2011), is still understudied, and its potential underestimated.

Positive and Negative intergroup contact

Pettigrew and Tropp (2008) pointed out that past research on intergroup contact suffered from a positive bias, as researchers focused their attention on the effect of positive encounters, ignoring almost totally the effect of negative episodes of contact, which could as well play a key role in shaping intergroup relations (Pettigrew & Tropp, 2006, 2011; see also Pettigrew, 2008). In everyday life, people can experience different types of interactions with outgroup members, and while some of these encounters are experienced as positive and pleasant, others can be perceived as negative and threatening. The fact of acknowledging that positive and negative contact experiences may have joint effects on intergroup appraisals has raised the attention toward the specific effects of negative contact experiences.

Most findings across different studies suggest that positive and negative contact are two independent phenomena that are just slightly and negatively correlated (e.g., Aberson, 2015, Pettigrew & Tropp, 2011), and exert opposite effect on the outcome

variables. While positive contact typically reduces prejudice, negative encounters facilitate intergroup hostility. However, a small number of research papers considered the effect of positive and negative contact simultaneously, frequently reporting contradictory results.

A first line of research suggested that negative contact may have a stronger effect on outgroup attitudes than positive contact (Barlow et al., 2012; Dhont & Van Hiel, 2009; Paolini, Harwood, & Rubin, 2010). One of the first proofs of this hypothesis came from Barlow et al. (2012) which studied the frequency of positive and negative contacts of White Americans with Black Americans and their effects on multiple measures of prejudice. Results showed that, despite positive contact was more frequent than negative contact, the latter was a more robust predictor than positive contact of both modern and old-fashioned racism, as well as avoidance. To explain this *valence asymmetry effect* (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001), Barlow et al. (2012) relied on earlier findings by Paolini et al. (2010), who found that negative experiences of contact led to more awareness of group membership (during contact) compared to the positive ones, resulting in an easier generalization of the unpleasant contact experience to the overall evaluation of the outgroup. Corroborating these findings, Dhont and Van Hiel (2009) asked to a sample of Belgian adults to assess the frequency of friendly and positive contacts, as well as of conflictual and unpleasant interactions with immigrants, and showed that the impact of negative contact on racism was stronger than that of the positive one.

Another research conducted by Techakesari and colleagues (2015) examined the relationship between positive and negative contact experiences and prejudice across three different samples and studies. In Study 1, Techakesari et al. (2015) examined positive and negative contact experiences of White Americans with Black Americans and their effect on prejudice. The authors found that including negative contact in the regression model weakened the effect of positive contact and that more negative contact experiences led to higher levels of old-fashioned and modern prejudice. The authors replicated their findings in a second study considering contact between Hong Kong Chinese and Mainland Chinese, suggesting that the effects of negative contact on prejudice may be culturally invariant. However, this hypothesis was not supported by their third study conducted in Thailand and investigating contact between Buddhist Thais and Muslim Thais. Results of

this study showed that even when negative contact was considered, positive contact was still directly associated with lower levels of prejudice.

Despite these results suggesting that negative contact is a more stable predictor of intergroup attitudes than positive contact, other studies show a prevalence of positive contact experiences over negative ones (Graf, Paolini, & Rubin, 2014) and, in some cases, also a positive contact prominence in determining outgroup evaluations (Pettigrew, Wagner, & Christ, 2007). For instance, when Pettigrew and colleagues (2007) examined the effects of Germans' positive and negative contact with foreigners on anti-Muslim prejudice, they found that the effect of positive contact in reducing outgroup prejudice was stronger than the effect of negative contact. Bekhuis, Ruiter and Coenders (2013), while studying positive and negative intergroup contact among high school students and their peers of different ethnicity in the classroom context, found that the two types of contact had similar impact on outgroup attitudes. Likewise, Visintin, Green, Pereira, and Miteva (2017) found that the effects of Bulgarians' positive and negative contact with Roma people on prejudice and policy support were not statistically different in their sizes. Positive contact, instead, was a stronger predictor of positive emotions than negative contact.

Pagotto and Voci (2013) studied the effects of positive versus negative direct and mass-mediated contact with immigrants amongst Italian participants and showed that positive episodes of direct contact had a greater overall impact on attitudes than negative ones. Finally, Aberson (2015) examined positive and negative intergroup contact between White Americans and African Americans and found that negative contact was a stronger predictor of cognitive dimensions of prejudice (i.e., stereotypes) than positive contact, but the effects of positive and negative contact on affective dimensions of prejudice (i.e., positive and negative feelings) were similar in strength.

The interaction between positive and negative contact

Recent research has explored the possibility that positive and negative contact may interact with each other in a way that positive contact can change the effect of negative contact and vice versa. In particular, there is evidence in the literature that positive past intergroup contact experiences can act as a protective factor against the

detrimental effect of negative contact (Paolini et al., 2014) and that previous negative contact experiences can enhance the effect of positive contact (Birtel & Crisp, 2012).

Paolini et al. (2014) manipulated positive and negative television-mediated portrayals of two Latino media characters (a Latina illegal immigrant and a Latino US citizen border-patrolman), and they measured the typicality of outgroup members and past contact quantity and quality with illegal immigrants. In the negative portrayal condition, White American respondents reported higher category salience than those in the positive portrayal condition. Nevertheless, negative contact did not predict higher category salience among participants with positive prior contact with illegal immigrants, underlining a buffering effect of positive contact experiences. The same pattern emerged in two other experiments, in which Paolini et al. (2014) manipulated the valence of imagined contact experiences by asking participants (White Americans in Study 3, Turkish Cypriots in Study 4) to mentally visualize a positive or a negative interaction with an outgroup member (an illegal immigrant stranger and a Greek Cypriot respectively). They measured category salience as well as past contact experiences quality and quantity. Again, a buffering effect of positive contact emerged: imaging a negative experience with an outgroup member led to higher category salience than visualizing a positive interaction, but only in participants who had less positive past contact. This buffering effect could be explained using the "perceived fit principle" derived from the self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). People generally have negative expectations about the outgroup and their interactions with its members, thus experiences of negative contact with outgroup members may be perceived as more consistent with these negative expectations (better perceived fit), increasing awareness of group memberships and leading to an easier generalization from contact to outgroup evaluations. Positive contact, on the contrary, fits the negative outgroup schema less well, producing weaker effects on outgroup evaluations because group category salience remains low. However, repeated experiences of positive contact could gradually reduce the negative stereotypes associated to the outgroup, decreasing the perceived fit of negative interactions and, thus, their association with group category salience.

Birtel and Crisp (2012), conducted three experiments in which participants imagined various contact interactions with outgroup members before reporting their attitudes or future contact intentions. Across all three experiments, they found that

respondents who first imagined a negative interaction and then imagined a positive interaction with the outgroup members reported more positive attitudes and greater future contact intentions than those who imagined two consecutive positive interactions. Compared to previous findings by Paolini et al. (2014), these results suggest that prior negative contact can increase the effect of subsequent positive contact (*facilitation* effect). The authors interpreted their results in terms of a psychotherapeutic approach to anxiety reduction, according to which patients first face anxiety-provoking stimuli that activate the fear memory; once fear memory is activated, they can modify it through corrective positive information (Foa & Kozak, 1986). Conceiving the stigmatized group as a type of phobic stimulus, the activation of negative thoughts and feelings associated with that stimulus (i.e., negative contact experience) before introducing positive thoughts (i.e., positive contact) is maximally effective at attenuating negative perceptions of the outgroup. Another possible explanation can be found in the literature on negativity effects in general. Fiske (1980) proposed that the impact of a given stimulus (either positive or negative) is determined by its distance from the psychological neutral point (i.e., "extremity hypothesis"). In particular, the more extreme a stimulus' valence is, the more processing it will receive, and thus the larger will be the weight of this information for the individual. In the case of intergroup contact, it is conceivable that the psychological neutral point of expectations regarding an outgroup member would be generally quite negative. This is consistent with the perceived fit explanation of the buffering effect proposed by Paolini et al. (2014). However, in contrast to the perceived fit principle, the extremity hypothesis suggests that the negative outgroup neutral point could enhance the extremity of positive contact experiences and their impact on outgroup evaluations.

Consistent with this research stream, Árnadóttir, Lolliot, Brown, and Hewstone, (2018) considered positive and negative intergroup contact between a majority group of Icelandic adults and a minority group of Polish living in Iceland and their associations with various intergroup outcomes (i.e., outgroup orientations, outgroup trust, crime estimates, and perceived cultural differences). Results showed that the interaction between positive and negative contact was significantly associated with outgroup orientation, outgroup trust and crime estimates. The decomposition of these interactions provided evidence for both a buffering and a facilitation effect. On one hand, for

participants that reported more positive contact experiences, negative direct contact was not associated with outgroup orientation or outgroup trust (i.e., *buffering* effect) while for participants who did not have the benefit of the buffering of positive prior experiences with the outgroup, negative contact was significantly associated with less favorable outgroup orientation and lower levels of outgroup trust. On the other hand, positive contact was more strongly associated with positive outgroup orientation and outgroup trust, and more negatively associated with crime estimates when participants reported more frequent negative contact experiences, supporting the hypothesis that negative interactions may enhance the benefits of positive contact experiences (i.e., *facilitation* effect).

CHAPTER II

A MISSING PIECE OF THE PUZZLE: THE ROLE OF INDIVIDUAL DIFFERENCES

Research has consistently shown that individual differences in cognitive ability and personality factors can have an influence on various aspects of individuals' life, such as mortality, divorce, and occupational attainment, as well as situational factors (e.g., socioeconomic status; Ashton, 2013; Roberts, Kuncel, Shiner, Caspi, & Goldberg, 2007). Considering that individual dispositions has been recognized to play a key role for a wide range of important social outcomes, it is conceivable that they may also influence intergroup interactions and perceptions. For instance, people differ in their beliefs, ideologies, cognitive styles, and motives, and they necessarily bring these differences into the intergroup context (Hodson, 2009; Hodson, Costello, & MacInnis, 2013; Hodson & Dhont, 2015).

However, there has been relatively little integration of personality and situational factors in studying prejudice and, in particular, in intergroup contact research (Hodson, 2009; Hodson, Turner, & Choma, 2017). This was in part probably due to the strong interest in intergroup contact among social identity researchers, who dismissed person-based factors (e.g., Reynolds, Turner, Haslam, & Ryan, 2001). Conversely, other authors have claimed that an integration between personality characteristics and situational determinants is needed in order to provide a more complete understanding of prejudice and of the strategies to reduce it (Jackson & Poulsen, 2005).

In this chapter, we will examine some person-based predictors of prejudice, such as ideological variables (e.g., social dominance orientation), personality traits (e.g., psychological entitlement, agreeableness), cognitive styles (e.g., need for closure) and hypo-egoic dispositions (e.g., quiet ego), reporting evidence for their associations with intergroup contact and prejudice and thus acknowledging their important impact in intergroup interactions and perceptions.

Social dominance orientation (SDO)

Social dominance orientation (SDO) has been conceptualized within the Social Dominance theory (Sidanius & Pratto, 1999) as a personality variable that refers to a general attitudinal orientation toward intergroup relations, reflecting whether an individual generally prefers such relations to be equal, versus hierarchical, that is, ordered along a superior-inferior dimension (Pratto, Sidanius, Stallworth, & Malle, 1994). People who are more social-dominance oriented tend to favor hierarchy-enhancing ideologies and policies, such as nationalism, patriotism, political conservatism, support for death penalty and torture, and for restrictive immigration policies. They also tend to reject hierarchy-attenuating ideologies and policies like, for example, humanitarian practices, and the extension of civil rights to gays and other minorities (Sidanius & Pratto, 1999). A large body of evidence have also shown that people higher in SDO are more sexist, racist (e.g., toward Blacks, Aboriginals, Indians, Arabs, Asians), prejudiced against a range of different minority groups such as immigrants, lesbians, gay men, feminists, housewives, and physically disabled people (e.g., Duckitt, 2001, 2006; Duckitt, Wagner, du Plessis, & Birum, 2002; Pratto et al., 1994; Van Hiel & Mervielde, 2002; Whitley, 1999).

People higher in SDO has been found to score lower on the big five factor agreeableness, they are more likely to value power, strive for dominance, they are less warm, sympathetic, concerned with others, and tender-minded than people lower in SDO (Heaven & Bucci, 2001; Pratto et al., 1994). Accordingly, Duckitt (2001) has proposed that people higher (vs. lower) in SDO are more likely to view the world as a competitive jungle, leading to a competitive/dominance driven prejudice. Consistent with this hypothesis, Duckitt (2006) has found that the relation between SDO and prejudice is mediated by perceptions that one must compete with outgroups for outcomes and resources.

It appears clear that people high in SDO are supposed to react in a negative way to intergroup contact, because of their perception of outgroups as threatening, and are also likely to experience more intergroup anxiety and less empathy, making them more inclined to avoid intergroup encounters (Hodson, 2008; Pratto et al., 1994). However, in recent years some authors have proposed that more prejudice-prone individuals might

benefit from positive intergroup contact, because contact is an intervention that improve intergroup attitudes by attenuating the factors that feed prejudice (Hodson, 2011, Hodson et al., 2013). Supporting this possibility, Hodson (2008) found that White inmates that scored higher in social dominance orientation (SDO) showed substantially less intergroup bias when they had also more positive intergroup contact experiences. Moreover, among prisoners higher in SDO, intergroup contact was associated with less bias, and this relationship was in part explained by higher empathy for Black inmates. Dhont and Van Hiel (2009), in a sample of Belgium students, also showed that those higher in SDO reported less anti-immigrant prejudice as a function of more positive contact. In a recent study, Kteily, Hodson, Dhont, and Ho (2019) tested the effectiveness of contact quality on several prejudice outcomes controlling for a wide range of individual differences characterized by prejudice proneness (i.e., SDO, RWA, NFC, and ethnic identification). Results showed that more positive contact with African Americans uniquely predicted more tolerant attitudes toward the outgroups, confirming the power of positive contact in improving intergroup relations. Furthermore, for most of the prejudice measures, contact quality was effective among White Americans not only for individuals lower in SDO, but also among people high in SDO.

Quiet Ego

Bauer and Wayment (2008) proposed the construct of quiet ego, conceived as a self-identity that transcends egoism and, at the same time, does not ignore self-interest. As stated by Wayment, Bauer, and Sylaska (2015), a quiet ego is present when "the volume of the ego is turned down so that it might listen to others as well as the self in an effort to approach life more humanely and compassionately" (p. 1000).

A quiet ego is characterized by four interconnected facets: detached awareness, inclusive identity, perspective-taking, and personal growth (Wayment & Bauer, 2018). These four characteristics all contribute to a general orientation of balance and growth toward the self and others. Detached awareness allows individuals to be mindful of their surroundings, to focus on the present moment without judgments or preconceived ideas about how people and events should be. An inclusive identity embraces other people and the natural world within a broad self-definition, increasing cooperation and compassion.

Through perspective taking, individuals reflect on other people's viewpoints, thus nurturing empathy and altruism. All these qualities are embedded in the perception of, and commitment to, a personal growth, a process of individual development in the long-term. The multifaceted nature of quiet ego is reflected also in the instrument developed for its assessment by Wayment et al. (2015). In particular, the 14 items of the Quiet Ego Scale (QES) were taken from preexisting instruments: the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), the Allo-Inclusive Identity scale (Leary, Tipsord, & Tate, 2008), the perspective taking subscale of the Interpersonal Reactivity Index (IRI; Davis, 1983), and the personal growth subscale of the Psychological Well-Being scale (PWB; Ryff, 1989).

Different studies have shown that a quiet ego is associated with values and motives that balance the concerns between the self and others. For instance, a quiet ego has been found to be related to higher levels of self-esteem, life satisfaction, resilience, and, at the same time, to more frequent prosocial attitudes and behaviors, flexible thinking, and open-minded thinking (Wayment & Bauer, 2017; Wayment et al. 2015). Moreover, individuals characterized by a quiet ego showed to be particularly capable of facing stress in adversity and difficult moments of life (Wayment, Huffman, & Irving, 2018), using more frequently compassionate goals – which involve supporting others and contributing to their well-being – than self-image goals (Wayment, West & Craddock, 2016). As quiet ego implies the concern for both the self and others, it is conceivable to expect that it could have a beneficial effect also on intergroup relations. This hypothesis has been confirmed in a study conducted by Boin and Voci (2019), who examined the associations between quiet ego and various intergroup outcomes (i.e., intergroup anxiety, empathy and trust toward the outgroup, and outgroup attitudes). Results showed that quiet ego was positively associated with empathy, trust, and attitudes toward the outgroup and negatively related to intergroup anxiety.

The Need for Closure (NFC)

Proposed by Webster and Kruglanski (1994), the construct of need for closure has been defined as the desire for "an answer on a given topic, any answer, [. . .] compared to confusion and ambiguity" (p. 1049). Kruglanski and Webster (1996) proposed that

need for closure may activate two tendencies: the urgency and the permanency tendency. The urgency tendency is the inclination to reach a closure quickly, to accept the first answer available, while the permanency tendency reflects the desire to maintain an already achieved closure, to "freeze" past knowledge.

Although need for closure may vary as a function of the situation, it can also be considered has a stable individual difference. Indeed, in order to measure need for closure as a stable individual disposition, Webster and Kruglanski (1994) developed the Need for Closure Scale (NFCS). The authors identified five facets that broadly represent the construct of need for closure: preference for order and structure; affective discomfort caused by ambiguity; decisiveness of judgments and choices; desire for predictability; and closed-mindedness.

Recent research has examined how need for closure may influence the way people see groups and, in particular, the potential effect of NFC on group stereotyping and prejudice. Roets and Van Hiel (2011a) posited that, although NFC theory has originated from a literature outside the one on prejudice, it presents some similarities with the "prejudice-prone personality" proposed by Allport in 1954. For instance, in his seminal work on "The nature of prejudice", Allport (1954) stated that prejudice-prone individuals prefer a clearly structured world, they are intolerant to ambiguity and they have a particular need for order, especially social order. The description given by Allport closely resembles the concept of NFC. Consistent with this correspondence, different studies have demonstrated a substantial relationship between dispositional NFC and various measures of explicit prejudice, such as blatant, subtle, and modern prejudice (Roets & Van Hiel, 2006, 2011b; Van Hiel, Pandelaere, & Duriez, 2004), and also implicit measures of racism (Cunningham, Nezlek, & Banaji, 2004). Furthermore, Cornelis and Van Hiel (2006) investigated the impact of cognitive style on conservative beliefs and racism, and found that NFC, in particular the preference for order and predictability facet, was the most important determinant of authoritarianism-based conservatism and racism.

Moreover, Roets and Van Hiel (2011b) found a strong correlation between NFC and essentialist beliefs about race and they experimentally demonstrated that the association between NFC and various forms of racism can be explained to some extent by increased levels of essentialist thinking. Furthermore, NFC has been linked to other targets of prejudice, such as groups based on sexual identities. In particular, Roets, Van

Hiel, and Dhont (2012) conducted a research to investigate the antecedents of ambivalent sexism (i.e., hostile and benevolent forms) in both men and women toward own and other gender. The authors found that NFC was strongly and positively associated with sexism toward both women and men among both women and men. Interestingly, individuals high in NFC are disposed to stereotyping and prejudiced attitudes not only toward members of the opposite sex, but also toward their own gender group. These findings suggest that, at least for some social categories, the effects of NFC on prejudice may go beyond simple in-group favoritism and out-group derogation. Dhont, Roets, and Van Hiel (2011), across five studies, four correlational and one experimental, found that for individuals higher in NFC intergroup contact was strongly related to various measures of outgroup evaluation (e.g., subtle, modern, and blatant racism and outgroup attitudes). Moreover, intergroup anxiety was shown to mediate the moderating effect of NFC in the relation between intergroup contact and modern and blatant racism. The authors suggest that a possible explanation of this relationships is that intergroup contact reduces feelings of uncertainty and anxiety, and increases familiarity with outgroups, thereby meeting high NFC individuals' motivational need for certainty and predictability (Dhont et al., 2011).

Psychological entitlement

Psychological entitlement has been defined as an individual trait characterized by pervasive and enduring feelings of deservingness for more goods, services, or special treatment than others, with or without any dutifully earned right to those benefits (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004). In a series of studies, Campbell et al. (2004) showed that individuals who had high levels of psychological entitlement took more candy from a bowl that were destined to children in a developmental laboratory, rated themselves as deserving higher salaries than their coworkers in a hypothetical organization, made competitive choices in a commons dilemma, and reported behaving selfishly in romantic relationships. Moreover, Zitek, Jordan, Monin, and Leach (2010) found that individuals high in entitlement were more willing to engage in selfish behaviors and less willing to engage in helpful behaviors than people low in entitlement. Finally, Witte, Callahan, and Perez-Lopez (2002) found that entitlement was

particularly associated with measures of anger in response to various threatening or frustrating situations.

The basis of self-worth in entitled individuals is the need for superiority and dominance. As they care about maintaining their grandiose self-views, they tend to respond with aggression, conflict, and hostility against those who threaten it (Kernis, Grannemann, & Barclay, 1989; Rhodewalt, Madrian, & Cheney, 1998; Zeigler-Hill, 2006). Moreover, entitled persons tend to seek autonomy and control, they don't want to depend on others in any way (Rose & Anastasio, 2014). The problem is that entitled individuals are seeking autonomy and distance from others but, at the same time, they are depending on the external judgement and evaluation of other people to confirm their enhanced self-image. Rose and Anastasio (2014) found that entitled individuals exhibit a puzzling combination of dependence upon others and desire for independence. Moreover, entitlement, by definition, is a construct that implies the presence of "others". To feel that you are deserving more than others, it means that is necessary that there is an "other" deserving less. The pattern of findings in the literature suggests that thinking that one is deserving more than others results in a disposition to a negative view of others, resulting in worse interpersonal outcomes. Exline, Baumeister, Bushman, Campbell, and Finkel (2004) found that narcissistic entitlement was linked to lower levels of forgiveness, while Exline and Zell (2009) found that the combination of psychological entitlement and self-affirmation predicted higher levels of unforgiveness. Results are available also concerning the association between entitlement and intergroup relations. In particular, Anastasio and Rose (2014) showed that psychological entitlement was associated to negative attitudes towards personally relevant outgroups. Across three studies, they found that undergraduates students who reported high levels of entitlement exhibit also more prejudice toward gay and lesbian people and African Americans. Moreover, they disliked rival students, but not students from a non-rival school. Consistent with these findings, Boin and Voci (2019), in a study conducted in Italy, found that psychological entitlement was associated with lower trust toward immigrant people and higher intergroup anxiety, as well as less positive attitudes toward this outgroup.

Agreeableness

There is consensus among personality psychologists from different perspectives that personality can be described by a factorial model that identifies five major dimensions: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness (McCrae & Costa, 1987; Digman & Takemoto - Chock, 1981). As a personality dimension, agreeableness is less frequently studied empirically and less well developed theoretically relative to the other four factors. Conceptually, agreeableness is often defined in terms of social motivation, in particular the desire to maintain positive interpersonal relations with others (Graziano & Tobin, 2013). Costa, McCrae, and Dye (1991) have identified six facets of agreeableness: trust, defined as the tendency to attribute benevolent intent to others; straightforwardness, such as directness and frankness in dealing with others; altruism, that is selflessness and concern for others; compliance, that is the tendency to defer to others instead of fighting; modesty, or humility, such as having a low focus on the self; and tender-mindedness, which refers to the tendency to be guided by feelings, particularly those of sympathy, in making judgments and forming attitudes. Indeed, agreeable persons seek to create and sustain harmony. They are benevolent and trusting and rely on others' good intentions. In contrast, persons with low agreeableness tend to be disbelieving, skeptical and demanding in their general attitude towards life.

Agreeableness has been linked to prosocial behaviors such as helping and empathy. Across a series of four studies, Graziano, Habashi, Sheese, and Tobin (2007) explored the associations between prosocial motives, helping, empathy, and personality. Results showed that individuals high in agreeableness were generally more likely to help others than their peers. Agreeableness is also related to differential reactions to others. Indeed, Graziano, Bruce, Sheese, and Tobin (2007) examined agreeableness as a predictor of reactions toward various social groups and found that agreeableness was negatively associated with prejudice. Specifically, individuals high in agreeableness reported more positive reactions to most groups, including traditional targets of prejudice (e.g., homosexuals, Jews, Hispanics) relative to their peers. Taken together, these findings suggest that agreeableness is linked to more positive reactions to others, including those who are considered targets of prejudice (Graziano & Habashi, 2010).

Jackson and Poulsen (2005) examined the relation between the five personality factors and prejudice. In two American university samples, the authors assessed contact and attitudes towards Black Americans (Study 1) and Asian Americans (Study 2). Results showed that both openness and agreeableness were related to positive and negative attitudes toward African Americans and Asian Americans and these relationships were mediated by intergroup contact. In particular, higher openness and agreeableness predicted more positive contact experiences with the relevant outgroup, which in turn predicted more favorable attitudes towards the target outgroup.

CHAPTER III

EFFECTS OF POSITIVE AND NEGATIVE CONTACT EXPERIENCES: THE ROLE OF AFFECTIVE VARIABLES, DEPROVINCIALIZATION AND INDIVIDUAL DISPOSITIONS

Aims and overview of the studies

The aim of the present work was to further examine the relationship between positive and negative intergroup contact and prejudice. Across five studies, three cross-sectional, one longitudinal (Study 4), and one employing a diary method (Study 5), we investigated the effect of positive and negative contact experiences on various prejudice indexes. We also wanted to test the effects of positive and negative contact taking into account different target groups. Hence, we considered intergroup contact between Italian adults and two ethnic minority groups (i.e., immigrant people in Study 1 and 4, Muslim people in Study 2), and contact between heterosexual people and gay people (Study 3).

In particular, we expected that positive contact would be related to lower levels of prejudice and intergroup anxiety, higher levels of empathy and deprovincialization, and better outgroup attitudes (H1), while negative contact would be associated with increased prejudice and intergroup anxiety and worse outgroup attitudes, empathy, and deprovincialization (H2).

In the first four studies, intergroup anxiety, empathy, and deprovincialization were considered as mediators, hypothesizing that they play a key role in explaining the contact-prejudice relationship. Specifically, we predict that positive contact would be associated with reduced prejudice and more positive outgroup attitudes via increased empathy and deprovincialization and reduced intergroup anxiety. On the contrary, negative contact should be negatively related to outgroup attitudes and positively associated with prejudice through more intergroup anxiety and less empathy and deprovincialization (H3).

In all the five studies, we also tested the possibility that positive and negative contact would not only have independent effects on intergroup outcomes, but that they would also interact with each other (H4) as suggested by previous research (Árnadóttir et al., 2018; Birtel & Crisp, 2012; Paolini et al. 2014). In particular, we predict that: positive contact should moderate the effects of negative contact such that the detrimental effect of

negative contact on outgroup evaluations is diminished when positive contact is more frequent (H4a or "*buffering*" hypothesis). Negative contact should moderate the effects of positive contact such that the effect of positive contact is enhanced when negative contact is more frequent (H4b or "*facilitation*" hypothesis).

In addition, we explored the role of individual differences that in past research have been associated with both contact and prejudice. In particular, we considered social dominance orientation (SDO), quiet ego, need for closure (NFC), psychological entitlement, and agreeableness. In all the studies, we tested whether the effects of positive and negative contact on intergroup outcomes are still present controlling for individual dispositions. We hypothesized that individual dispositions would have a role in these relationships, but that the main effects of positive and negative contact on prejudice would be resistant to their influence (H5). Finally, we controlled for the effect of socio-demographic variables (i.e., age, gender, and level of education) as well as social desirability.

Although some of these effects has been investigated in previous studies, as far as we know this is the first time that research has examined all these processes simultaneously, considering a wide range of outgroups and intergroup outcomes, and employing different methodologies. Moreover, for the first time in the contact literature, by considering time variations through the longitudinal design and the daily diary method, we separated between-individual (i.e., the effect of experiencing more contact than other individuals) from within-individual (i.e., the effect of experiencing more contact than usual for a person) variations of positive and negative contact. In particular, we examined how between-individual and within-individual variations in positive and negative contact would be associated with variations in anxiety, empathy, deprovincialization, outgroup evaluations (Study 4), and emotions felt toward outgroup members (Study 5).

Study 1

Introduction

The first study aimed to investigate the associations of positive and negative intergroup contact with attitudes towards immigrants in Italy. We also aimed to test if this relationship can be explained by intergroup anxiety, empathy felt toward outgroup members, and deprovincialization.

Following previous findings by Árnadóttir et al. (2018), we also looked at the joint effects of positive and negative contact, testing if these two experiences can interact with each other. In particular, we expect the effects of negative contact to be attenuated by more positive contact experiences (i.e., *buffering* hypothesis) and the effects of positive contact to be enhanced by the presence of more negative contact experiences (i.e., *facilitation* hypothesis)

In addition, we examined the association between individual dispositions relevant for both intergroup contact and prejudice (i.e., SDO, quiet ego, psychological entitlement, need for closure) and outgroup attitudes, through their associations with positive and negative contact, intergroup emotions and deprovincialization. In the investigation of these relationships, we controlled for the effects of age, gender, and for two types of socially desirable responding (i.e., self-deceptive enhancement and impression management).

Participants

Participants were 347 Italians, aged between 16 and 65 years (M_{age} = 28.93, *SD*= 11.22); 140 were males, and 204 females, three did not report their gender. They completed the questionnaire individually and were recruited through the social network of two research collaborators.

Concerning their employment, 3.6 % were manual or office workers, 23.8% were retailers, employees or teachers in primary schools, 12.5% were professionals, teachers in secondary schools or academics, while 3.9% were housekeepers or unemployed. Finally, 56.1 % were students (5.5% did not indicate the occupation).

Method

Positive and negative intergroup contact. To measure positive and negative contact experiences, we asked participants about their encounters with immigrants they knew using the items chosen by Fuochi et al. (2019). For positive contact: "How many immigrants do you know and see in a positive way?", "How often do you meet immigrants you know and perceive it as positive?"; for negative contact: "How many immigrants do you know and see in a negative way?", "How often do you meet immigrants you know and perceive it as negative?". Participants responded on a five□ point scale (quantity of contact: *0 = none*; *1 = 1-2*; *2 = 3-5*; *3 = 5-7*; *4 = more than 7*; frequency of contact: *0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often*). The Spearman-Brown coefficient was acceptable for both positive (ρ = .64) and negative (ρ = .66) contact.

Intergroup anxiety. To measure anxiety we asked participants to imagine being the only Italian, in Italy, among unknown immigrants of their own gender, and to rate on a scale from 0 (*not at all*) to 4 (*very much*) six emotional reactions (e.g., calm [R], embarrassed; Voci & Hewstone, 2003). Items were averaged to form a reliable composite score (Cronbach's α = .92).

Empathy for the outgroup. Participants were asked to think about discrimination and difficulties experienced by immigrants living in Italy, and to rate 10 emotional reactions (e.g., sorrow, emotional closeness) on a scale from 0 (*not at all*) to 4 (*very much*; Pagotto & Voci, 2013). A reliable composite score was computed by averaging the ten items (α = .94).

Deprovincialization. We measured deprovincialization using a 6-item scale developed by Boin, Fuochi, and Voci (2019) that assesses Cultural Deprovincialization. Participants responded on a scale from 0 (= *does not describe me at all*) to 4 (= *describes me very well*). Items were averaged to form a reliable composite score (α = .84).

Outgroup attitudes We measured attitudes toward immigrants in Italy by asking participants to evaluate immigrant people on four adjectives (positive, unfavorable[R], friendly, negative[R]), from 0 = *not at all* to 4 = *very much* (Voci & Hewstone, 2003). Higher scores on this measure represented more positive attitudes toward the outgroup (α = .81).

Social dominance orientation (SDO). We used the 16-item SDO scale (Sidanius & Pratto, 1999) in its Italian version (Aiello, Chirumbolo, Leone, & Pratto, 2005). Responses were provided on a 7-point scale (from 1 = *strongly disagree* to 7 = *strongly agree*; α = .85).

Quiet ego. To measure quiet ego, we used the 14 items of the Quiet Ego Scale (Wayment et al., 2015), in its Italian version (Boin & Voci, 2019). Participants rated each item using a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale showed good internal reliability (α = .76).

Psychological entitlement. The Italian version of the 9-item Psychological Entitlement scale (Campbell et al., 2004) was used (Boin & Voci, 2019). Participants rated each item on a 7-point response scale (from 1 = *strong disagreement* to 7 = *strong agreement* (α = .85).

Need for closure (NFC). To measure need for closure we used the 15-item short version of the Need for Closure Scale (Roets & Van Hiel, 2011). The Italian version of the items was taken from the Italian validation by Mannetti, Pierro, Kruglanski, Taris and Bezinovic (2002). Participants rated each item on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The reliability of the scale was good (α = .85).

Social desirability. We used the 16-item Italian version by Bobbio and Manganelli (2011) of the Balanced Inventory of Desirable Responding (BIDR; Paulhus, 1998). The BIDR allows the measurement of two different kinds of social desirability: self-deceptive enhancement (an involuntary description of the self as better than reality) and impression management (related to a conscious and voluntary effort to give a positive image of the self). Participants rated the 16 items on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The reliability of the self-deceptive enhancement subscale was good (α = .87), while that of impression management was acceptable (α = .65).

Results

Preliminary analyses

Descriptive statistics and correlations between variables are reported in Table 1.1. We conducted a one sample t-test to test if the mean scores of the measures were significantly different from the midpoint of their response scales. Frequency of positive contact was slightly higher than the midpoint of the response scale while negative contact was significantly lower. As regards intergroup emotions, appraisals and outgroup evaluations, participant levels of intergroup anxiety were under the midpoint of the scale while levels of empathy, deprovincialization and outgroup attitudes were above the mean score of the scale.

Considering individual dispositions, participants' levels of SDO, entitlement, and self-deception were lower than the midpoint of the scale while levels of quiet ego were significantly higher. Finally, levels of NFC and impression management did not differ significantly from the mean point of the response scale.

Positive and negative contact were not correlated, suggesting that they represent two distinct constructs. Positive and negative contact were both related to intergroup emotions, deprovincialization, and outgroup attitudes: positive contact was positively linked to empathy, deprovincialization, and attitudes toward immigrants, and negatively associated with intergroup anxiety, while negative contact presented an opposite pattern of correlations.

Regarding individual dispositions, SDO was linked to all the intergroup variables. It had a negative association with positive contact, empathy, deprovincialization, and attitudes, and a positive correlation with negative contact and intergroup anxiety. Quiet ego had very similar, but opposite associations: it was negatively related to negative contact and anxiety, but positively associated with positive contact, empathy, deprovincialization, and outgroup attitudes. Need for closure was negatively linked to positive contact, empathy, deprovincialization, and outgroup attitudes; it was also positively related to intergroup anxiety. Finally, psychological entitlement was not related to contact measures, but it was negatively associated with empathy, deprovincialization, and outgroup attitudes, and positively associated with intergroup anxiety.

Considering social desirability, self-deception was positively associated with SDO, quiet ego, NFC, and psychological entitlement. Impression management had a positive relation with quiet ego and a negative association with NFC.

Table 1.1. *Descriptive Statistics and Correlations between Variables.*

	M (SD)	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1. Positive Contact (0-4)	2.29 (1.02) ***											
2. Negative Contact (0-4)	1.21 (0.94) ***	.03										
3. Anxiety (0-4)	1.81 (0.92) ***	- .41***	.19***									
4. Empathy (0-4)	2.42 (0.94) ***	.45***	- .22***	- .38***								
5. Deprovincialization (0-4)	3.25 (0.73) ***	.45***	- .36***	- .51***	.59***							
6. Outgroup attitudes (0-4)	2.75 (0.73) ***	.48***	- .35***	- .56***	.58***	.66***						
7. SDO (1-7)	2.23 (1.00) ***	- .30***	.36***	.40***	- .60***	- .67***	- .56***					
8. Quiet Ego (1-5)	3.68 (0.51) ***	.23***	- .12*	- .31***	.46***	.53***	.37***	- .36***				
9. NFC (1-6)	3.53 (0.80)	- .17**	- .00	.29***	- .13*	- .23***	- .12*	.09	- .14*			
10. Entitlement (1-7)	2.95 (1.15) ***	- .07	.10	.17**	- .20***	- .27***	- .18*	.30***	- .11*	.42***		
11. Self-deception (1-6)	3.37 (0.94) **	-.04	.09	.06	-.06	-.11	-.07	.17**	.18**	.28***	.32***	
12. Impression management (1-6)	3.58 (0.81)	.06	-.07	-.09	.06	.09	.09	-.07	.24***	-.12*	-.10	.09

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure. Differences from midpoint: response scale ranges are reported in parentheses; *$p < .05$, **$p < .01$, ***$p < .001$.

Mediation analyses

To assess the hypothesized relationships between variables, we tested a path model with observed variables (Mplus 7; Muthén & Muthén, 2012) where positive and negative contact were the predictors; anxiety, empathy, and deprovincialization were the mediators; and attitudes towards immigrants was the outcome variable. Direct paths from the predictors to the outcome variables were estimated, as well as correlations between the predictors, and between the mediators.

As reported in Table 1.2, positive contact was positively associated with empathy and deprovincialization, and negatively with intergroup anxiety. Negative contact had opposite associations with the mediators: it was positively associated with anxiety and negatively associated with empathy and deprovincialization. Turning to the relationships between the mediators and the outcome variable, both empathy and deprovincialization were positively associated with attitudes toward immigrants, while intergroup anxiety was negatively associated with attitudes (see Figure 1.1). Moreover, significant direct effects were also present: outgroup attitudes were positively related to positive contact and negatively related to negative contact.

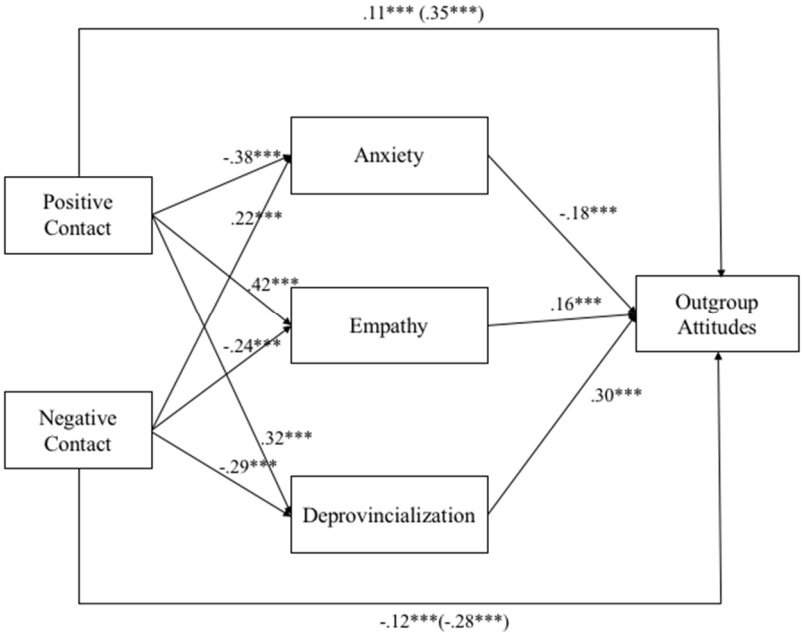

Figure 1.1. *Indirect effects of Positive and Negative Contact on Outgroup Attitudes via Anxiety, Empathy and Deprovincialization. Unstandardized coefficients are reported. Direct effect from Positive and Negative contact to Outgroup Attitudes are reported in parentheses. ***p < .001*

Table 1.2. *Path Model of the Effects of Positive and Negative Intergroup Contact on Attitudes towards Immigrants via Anxiety, Empathy, and Deprovincialization.*

	Anxiety				*Empathy*				*Deprovincialization*				*Outgroup attitudes*			
	b	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*
Intercept	2.41	0.12		<.001	1.74	0.12		<.001	2.86	0.09		<.001	1.60	0.19		<.001
Positive Contact	-0.38	0.04	-.41	<.001	0.42	0.04	.46	<.001	0.32	0.03	.44	<.001	0.11	0.03	.16	<.001
Negative Contact	0.22	0.05	.22	<.001	-0.24	0.05	-.24	<.001	-0.29	0.03	-.38	<.001	-0.12	0.03	-.15	<.001
Anxiety													-0.18	0.03	-.23	<.001
Empathy													0.16	0.04	.21	<.001
Deprovincialization													0.30	0.05	.30	<.001
R^2	.22***				.27***				.34***				.58***			

Note. ***p <.001.

We then applied bootstrapping procedures using 10,000 resamples to test the significance of indirect effects. As shown in Table 1.3, positive direct contact had a positive indirect association with attitudes toward immigrants via empathy, anxiety, and deprovincialization, while negative contact had a negative indirect association with attitudes via empathy, anxiety, and deprovincialization

Table 1.3. *Unstandardized Total and Indirect Effects, and Bootstrap Point Estimates [95% Bootstrap Confidence Intervals] of the Effects of Positive and Negative Intergroup Contact on Attitudes towards Immigrants via Anxiety, Empathy, and Deprovincialization.*

Predictor	*Mediators*	*Effects on Outgroup attitudes*
Positive Contact		TE = .35*** TIE = .23***
	Anxiety	IE = 0.07 [0.039, 0.103]
	Empathy	IE = 0.07 [0.039, 0.105]
	Deprovincialization	IE = 0.10 [0.061, 0.140]
Negative Contact		TE = -.28*** TIE = -.17***
	Anxiety	IE = -0.04 [-0.063, -0.020]
	Empathy	IE = -0.04 [-0.066, -0.020]
	Deprovincialization	IE = -0.09 [-0.132, -0.053]

Note. TE= Total effect of predictor on criterion variable; TIE = Indirect effect of predictor on criterion variable, IE= Indirect effect of predictor on criterion variable through the mediators. ***p <.001. Bootstrap Confidence intervals (CIs) excluding zero indicate a significant indirect effect (p < .05).

Interaction between positive and negative contact

Before creating their interaction terms, positive and negative contact were centered to zero, to avoid problems of multicollinearity (Cronbach, 1987). The interaction between positive and negative contact was then added to the model amongst predictors. As reported in Table 1.4, a significant interaction between positive and negative contact emerged for outgroup attitudes, empathy for the outgroup, and deprovincialization, but not for intergroup anxiety.

Table 1.4. *Associations between Positive and Negative Intergroup Contact and Attitudes towards Immigrants via Anxiety, Empathy, and Deprovincialization, Including the Interaction between Positive and Negative contact.*

	Outgroup attitudes				*Anxiety*				*Empathy*				*Deprovincialization*				*Outgroup attitudes*			
	b	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*
Intercept	2.75	0.03		<.001	1.81	0.04		<.001	2.42	0.04		<.001	3.24	0.03		<.001	1.70	0.19		<.001
Positive Contact	0.35	0.03	.48	<.001	-0.38	0.04	-.42	<.001	0.43	0.04	.46	<.001	0.33	0.03	.45	<.001	0.11	0.03	.15	<.001
Negative Contact	-0.26	0.03	-.34	<.001	0.20	0.05	.20	<.001	-0.20	0.05	-.20	<.001	-0.24	0.03	-.31	<.001	-0.12	0.03	-.15	<.001
Positive Contact* Negative Contact	0.07	0.03	.10	.026	-0.07	0.04	-.08	.131	0.12	0.04	.13	.006	0.16	0.03	.23	<.001	-0.01	0.03	-.01	.705
Anxiety																	-0.18	0.03	-.23	<.001
Empathy																	0.16	0.04	.21	<.001
Deprovincialization																	0.30	0.05	.30	<.001
R^2			.37***				.23***				.28***				.39***				.58***	

Note. ***p <.001.

Table 1.5. *Moderation Analysis: Results of the Interaction between Positive and Negative Contact*

Predictor	*Moderator*	*Outcome variable*	*Interaction effect*	*High levels of moderator*	*Low levels of moderator*
Negative Contact	Positive Contact	Outgroup Attitudes	0.07 (0.03) *	-0.19 (0.05) ***	-0.33 (0.04) ***
Negative Contact	Positive Contact	Empathy	0.12 (0.04) **	-.09 (0.07)	-0.31 (0.05) ***
Negative Contact	Positive Contact	Deprovincialization	0.16 (0.03) ***	-0.08 (0.05)	-0.40 (0.04) ***
Positive Contact	Negative Contact	Outgroup Attitudes	0.07 (0.03) *	0.41 (0.04) ***	0.28 (0.04) ***
Positive Contact	Negative Contact	Empathy	0.12 (0.04)* *	0.54 (0.06)***	0.32 (0.06) ***
Positive Contact	Negative Contact	Deprovincialization	0.16 (0.03) ***	0.48 (0.04) ***	0.18 (0.04) ***

Note: Interaction terms are unstandardised regression coefficients. Numbers in parentheses are standard errors. High moderator = 1 standard deviation (SD) above the mean; Low moderator = 1 standard deviation (SD) below the mean. *$p < .05$, **$p < .01$, ***$p < .001$.

We decomposed these interactions, adopting the procedure proposed by Jaccard, Wan, and Turrisi (1990; see also Aiken & West, 1991) and relying on the package pequod (Mirisola & Seta, 2016) in R (R Core team, 2018).

When considering positive contact as the moderator and negative contact as the predictor, the results (Table 1.5) showed that negative contact was associated with a worsening of empathy and deprovincialization only when positive contact was low. When positive contact was high, negative contact was not related to empathy and deprovincialization. Negative contact was also less negatively associated with outgroup attitudes when positive contact was high. These results suggest that more frequent experiences of positive contact can counteract the detrimental effect of negative contact (i.e., a *buffering effect*). Simple slopes are reported in Figure 1.2.

When considering negative contact as the moderator, we found that positive contact was associated with more positive outgroup attitudes, more empathy and deprovincialization when negative contact was high. This is consistent with a *facilitation* effect, according to which more experiences of negative contact facilitate the association between high levels of positive contact and positive attitudes. Simple slopes are reported in Figure 1.3.

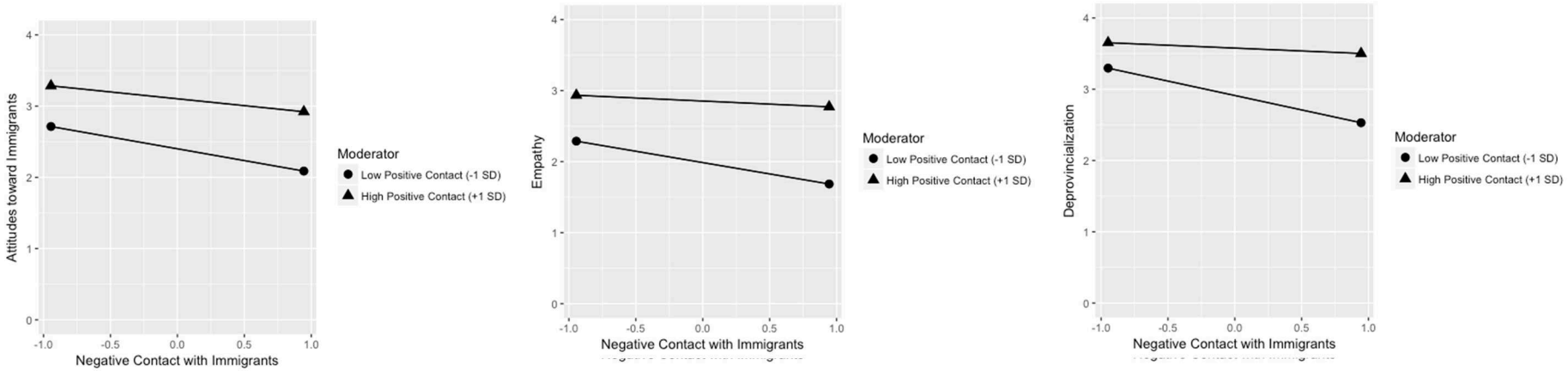

Figure 1.2. *Buffering Role of Positive Contact in the Association between Negative Contact and Attitudes towards Immigrants, Empathy, and Deprovincialization.*

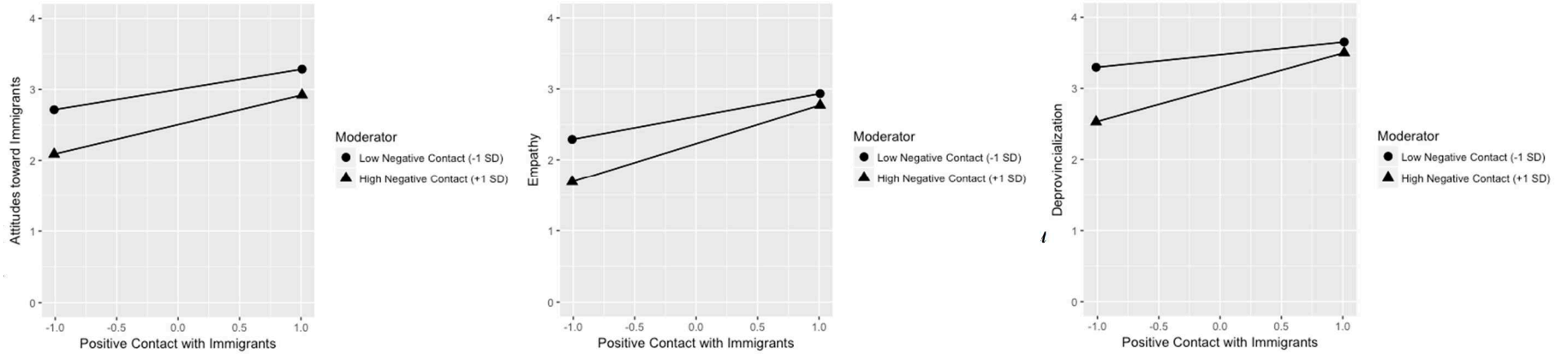

Figure 1.3. *Facilitating Role of Negative contact in the Association between Positive Contact and Attitudes towards Immigrants, Empathy and Deprovincialization*

Mediated moderation

Following the procedure proposed by Muller, Judd, and Yzerbyt (2005), we tested the simultaneous presence of the interaction between positive and negative contact and the mediation of intergroup anxiety, empathy, and deprovincialization in the association between contact and outgroup attitudes. In our model, a mediated moderation could be present if: (a) the moderation of the residual direct effect of contact on attitudes is lower than the moderation of the overall effect of contact on attitudes; (b) the interaction between positive and negative contact has a significant relation with anxiety, empathy, and/or deprovincialization.

As already shown in Table 1.4, the interaction between positive and negative contact was significantly related with outgroup attitudes when the mediators were not included in the model, while it was no longer significant when they were included amongst the predictors; moreover, the product between positive and negative contact was related to empathy and deprovincialization. This pattern of results is consistent with the presence of a mediated moderation process such that the effect of intergroup contact on empathy and deprovincialization is moderated by the valence of contact experience, and empathy and deprovincialization mediated the relation between contact and outgroup attitudes.

Mediation analyses with individual dispositions

To examine the effects of individual dispositions on outgroup attitudes, we tested a path model with observed variables in which SDO, quiet ego, psychological entitlement, and NFC were the predictors, positive and negative contact were entered as mediators at level 1, anxiety, empathy and deprovincialization were entered as mediators at level 2, and outgroup attitudes was the outcome.

As reported in Table 1.6, quiet ego was positively associated with positive contact, while SDO and NFC had a negative association with it; positive contact, in turn, was associated with more empathy, deprovincialization, and less intergroup anxiety, as well as with more positive outgroup attitudes. The only individual disposition associated with negative contact was SDO; negative contact, in turn, had a negative relation with deprovincialization and was positively linked to intergroup anxiety. Besides these effects

on contact, SDO and NFC were also positively related to intergroup anxiety, and positively associated with deprovincialization; SDO was also negatively related to empathy. Quiet ego, in contrast, was positively related to empathy and deprovincialization, and negatively linked to anxiety. Psychological entitlement was unrelated to intergroup variables. Interestingly, individual variables were correlated with outgroup attitudes (Table 1.1), but their effects were non significant when contact, emotions and deprovincialization were included in the model, suggesting a sequential mediation process. Supporting this possibility, as shown in Table 1.6 results showed that empathy and deprovincialization were positively linked with attitudes towards immigrants, while intergroup anxiety was negatively related to them, similarly to the findings reported in Table 1.2.

Bootstrapping procedures using 10,000 resamples were applied to test significance of indirect effects. Results are reported in Table 1.7 and confirmed the two-step mediation process. SDO had a negative indirect association with outgroup attitudes, first through positive contact, and then via anxiety, empathy, and deprovincialization. The negative indirect effect of SDO on outgroup attitudes via negative contact and then deprovincialization was also significant. Quiet ego was positively related to outgroup attitudes, first via positive contact, and then via anxiety and empathy. Finally, NFC was negatively related to outgroup attitudes through positive contact and then anxiety, empathy and deprovincialization.

Table 1.6. *Path Model of the Effects of SDO, Quiet Ego, Psychological Entitlement and NFC on Attitudes towards Immigrants via Positive and Negative Intergroup Contact, Anxiety, Empathy, and Deprovincialization.*

	Positive Contact		*Negative Contact*		*Anxiety*		*Empathy*		*Deprovincialization*		*Outgroup attitudes*	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
SDO	-0.27***	0.06	0.34***	0.05	0.20***	0.05	-0.39***	0.04	-0.29***	0.03	-0.07	0.04
Quiet ego	0.27*	0.11	0.00	0.10	-0.23*	0.09	0.43***	0.08	0.40***	0.05	-0.03	0.06
NFC	-0.21**	0.07	-0.04	0.07	0.26***	0.06	-0.01	0.05	-0.10**	0.03	0.04	0.04
Entitlement	0.08	0.05	0.01	0.05	-0.03	0.04	-0.02	0.04	-0.02	0.02	0.04	0.03
Positive Contact					-0.26***	0.04	0.25***	0.04	0.17***	0.03	0.12***	0.03
Negative Contact					0.11*	0.05	-0.05	0.04	-0.14***	0.03	-0.11**	0.03
Anxiety											-0.19***	0.03
Empathy											0.14**	0.04
Deprovincialization											0.28***	0.06
R^2	.14***		.13***		.33***		.50***		.63***		.59***	

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure. *$p < .05$, **$p < .01$, ***$p < .001$.

Table 1.7. *Unstandardized Total and Indirect Effects, and Bootstrap Point Estimates [95% Bootstrap Confidence Intervals] of the Effects of Individual dispositions on Attitudes towards Immigrants via Positive and Negative Intergroup Contact, Anxiety, Empathy, and Deprovincialization.*

Predictor	*Mediator I*	*Mediator II*	*Effects on Outgroup attitudes*
SDO			TE = -.37*** TIE = -.30***
	Positive Contact	Anxiety	IE = -0.01 [-0.025, -0.006]
		Empathy	IE= -0.01 [-0.019, -0.003]
		Deprovincialization	IE = -.01 [-0.025, -0.007]
	Negative Contact	Deprovincialization	IE = -0.01 [-0.027, -0.006]
Quiet Ego			TE = .25*** TIE = .28***
	Positive Contact	Anxiety	IE = 0.01 [0.000, 0.018]
		Empathy	IE = 0.01 [-0.001, 0.013]
NFC			TE = -.07 TIE = -.12***
	Positive Contact	Anxiety	IE = -0.01 [-0.021, -0.001]
		Empathy	IE = -0.01[-0.015, 0.000]
		Deprovincialization	IE = -0.01 [-0.021, -0.002]

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure. TE= Total Effect of predictor on criterion variable; TIE = Indirect effect of predictor on criterion variable, IE= Indirect effect of predictor on criterion variable through the mediators. ***p <.001. Only the significant paths are reported. Bootstrap Confidence intervals (CIs) excluding zero indicate a significant indirect effect ($p < .05$). Bootstrap CIs with one of the limits equal to zero indicate an indirect effect significant at $p = .05$.

The sequential mediation model allowed us to test the indirect effects of contact on outgroup attitudes via the mediators, controlling for the effect of SDO, quiet ego, psychological entitlement and NFC. The comparison between the results of Tables 1.3 and 1.8 showed that, for positive contact, all the indirect effects through anxiety, empathy, and deprovincialization were still significant. Regarding negative contact, however, the indirect effects through anxiety and deprovincialization held when controlling for individual dispositions, while the indirect effect via empathy was no longer significant.

Table 1.8 *Unstandardized Total and Indirect Effects, and Bootstrap Point Estimates [95% Bootstrap Confidence Intervals] of the Effects of Positive and Negative Intergroup Contact on Attitudes towards Immigrants via Anxiety, Empathy, and Deprovincialization controlling for SDO, Quiet Ego, Psychological Entitlement, and NFC.*

Predictor	*Mediators*	*Effects on Outgroup attitudes*
Positive Contact		TE = .35*** TIE = .18***
	Anxiety	IE = 0.07 [0.031, 0.103]
	Empathy	IE = 0.05 [0.014, 0.080]
	Deprovincialization	IE = 0.07 [0.033, 0.104]
Negative Contact		TE = -.23*** TIE = -.09***
	Anxiety	IE = -0.03 [-0.05, -0.002]
	Deprovincialization	IE = -0.05 [-0.083, -0.022]

Note. TE= Total Effect of predictor on criterion variable; TIE = Indirect effect of predictor on criterion variable; IE= Indirect effect of predictor on criterion variable through the mediators. ****p* <.001. Only the significant paths are reported. Bootstrap Confidence intervals (CIs) excluding zero indicate a significant indirect effect ($p < .05$).

Interaction between positive and negative contact in the model with individual dispositions

We repeated the same analyses reported in Table 1.4, including SDO, quiet ego, psychological entitlement, and NFC to test if the interaction between positive and negative contact was still present when controlling for these variables. Results (Table 1.9) showed that, except for deprovincialization, the interactions between positive and negative contact disappeared. This result may be due to the strong associations of SDO and quiet ego with intergroup emotions and outgroup attitudes. Indeed, SDO and quiet ego had a very similar but opposite association with all the variables: SDO was negatively linked to attitudes, empathy and deprovincialization, while quiet ego was positively related to them. Moreover, NFC had a negative relation with deprovincialization and a positive association with intergroup anxiety. It is possible that these associations absorbed the interaction effects reported in Table 1.4, with the exception of the strongest one, namely that involving deprovincialization.

Controlling for demographic variables and socially desirable responding

The analysis reported in Table 1.9 was repeated adding age, gender and social desirability as control variables. Results were the same as the those reported in Table 1.9, although some coefficients were slightly reduced. Moreover, women exhibited more intergroup anxiety and more favorable outgroup attitudes than men.

Table 1.9 *Associations between Positive and Negative Intergroup Contact on Attitudes towards Immigrants via Anxiety, Empathy and Deprovincialization, including the interaction between Positive and Negative contact and controlling for SDO, Quiet Ego, Psychological Entitlement, and NFC.*

	Outgroup Attitudes		*Anxiety*		*Empathy*		*Deprovincialization*		*Outgroup Attitudes*	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
SDO	-0.24***	0.04	0.19***	0.05	-0.38***	0.05	-0.27***	0.03	-0.07	0.04
Quiet ego	0.18**	0.06	-0.23*	0.09	0.43***	0.08	0.40***	0.05	-0.03	0.06
NFC	-0.04	0.04	0.26***	0.06	-0.02	0.05	-0.11**	0.03	0.04	0.04
Entitlement	0.04	0.03	-0.02	0.04	-0.02	0.04	-0.02	0.02	0.04	0.03
Positive Contact	0.25***	0.03	-0.26***	0.04	0.25***	0.04	0.19***	0.03	0.12***	0.03
Negative Contact	-0.17***	0.03	0.10*	0.05	-0.04	0.04	-0.12***	0.03	-0.11**	0.03
Positive Contact*Negative Contact	0.03	0.03	-0.03	0.04	0.04	0.04	0.12***	0.02	-0.01	0.03
Anxiety									-0.19***	0.03
Empathy									0.14**	0.04
Deprovincialization									0.29***	0.06
R^2	.49***		.33***		.50***		.65***		.59***	

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure. *$p < .05$, **$p < .01$, ***$p < .001$

Discussion

In the first Study, we found support for most of our hypotheses. Consistent with H1, positive contact was associated with more empathy and deprovincialization, better outgroup attitudes, and less intergroup anxiety. Conversely, negative contact was related to more intergroup anxiety, less empathy and deprovincialization, and worse outgroup attitudes, providing support for H2.

An indirect association between both positive and negative contact and outgroup attitudes via anxiety, empathy, and deprovincialization also emerged, supporting H3. In particular, positive contact had a beneficial influence on outgroup attitudes through increased empathy and deprovincialization and less intergroup anxiety. Negative contact was associated with worse outgroup attitudes via increased intergroup anxiety and less empathy and deprovincialization.

Moreover, corroborating H4, for all dependent variables (except for intergroup anxiety) we found a significant interaction between positive and negative contact. The decomposition of these interactions provided support for both the *buffering* (H4a) and the *facilitation* hypotheses (H4b). Specifically, we found that the detrimental effect of negative contact experiences on outgroup attitudes, empathy, and deprovincialization was attenuated by more frequent positive contact. Furthermore, positive contact was more strongly associated with positive outgroup attitudes, empathy, and deprovincialization when participants had more frequent negative contact experiences. All these effects are consistent with previous findings (Árnadóttir et al., 2018). Interestingly, a mediated moderation also emerged as the effect of intergroup contact on empathy and deprovincialization was moderated by the valence of contact experience, and empathy and deprovincialization mediated the relationship between contact and outgroup attitudes.

As regards to the role of individual dispositions, we found that SDO and quiet ego had similar but opposite associations with intergroup outcomes. SDO was positively associated with negative contact and intergroup anxiety and was negatively linked to empathy and deprovincialization. On the contrary, quiet ego was positively linked to positive contact, empathy, and deprovincialization and negatively related to intergroup anxiety. Need for closure was positively associated with intergroup anxiety and

negatively related to positive contact and deprovincialization. No association were found between psychological entitlement and the outcomes.

Furthermore, a two step mediation process from SDO, quiet ego, and NFC was found. In particular, SDO was negatively and indirectly related to outgroup attitudes, first through less positive contact, and then via anxiety, empathy, and deprovincialization. SDO had also a negative indirect effect on outgroup attitudes via more negative contact and then less deprovincialization. Quiet ego was positively associated outgroup attitudes, first via more positive contact, and then via less anxiety and more empathy. Finally, NFC was negatively related to outgroup attitudes through positive contact and then anxiety, empathy and deprovincialization.

The sequential mediation model enabled us to test the indirect effects of contact on outgroup attitudes via the mediators, controlling for the effect of SDO, quiet ego, psychological entitlement and NFC, thus testing H5. The mediational role of anxiety, empathy and deprovincialization in the relationship between positive contact and outgroup attitudes was still present, but the indirect association between negative contact and attitudes through empathy was no longer significant. Moreover, when SDO, quiet ego, NFC and entitlement were included in the moderation model, the effect of the interaction between positive and negative contact held only for deprovincialization. There is the possibility that the interaction effects were absorbed by the strong associations of SDO and quiet ego with intergroup emotions and outgroup attitudes. In the next study we focused on these two dispositional variables to deeply understand their effects on intergroup outcomes.

Finally, we acknowledge that the results of this first study may be limited to the particular target group and to the measure of outgroup evaluation employed (i.e., outgroup attitudes). Thus, to extend our findings, in the next Study we considered intergroup contact with a different target group (i.e., Muslim people) and we added another outcome variable, namely islamophobia, a specific measure of prejudice toward Muslim people.

Study 2

Introduction

The aim of the second study was to generalize the previous findings, investigating the associations of positive and negative intergroup contact with outgroup evaluations considering a different outgroup. In particular, in this Study we examined the relationship between positive and negative intergroup contact experiences with attitudes towards Muslim people in Italy. We also wanted to extend findings of Study 1, adding another outcome variable (i.e., islamophobia).

Moreover, relying on the findings of Study 1, in this study we decided to focus on two individual dispositions that had the strongest influence on four measures of interest, namely contact, emotions, deprovincialization, and attitudes: SDO and quiet ego. In addition, we included as control variables age, gender, level of education, religious affiliation and two types of socially desirable responding (i.e., self-deceptive enhancement and impression management).

Participants

Participants were 306 Italians, aged between 18 and 81 years (M_{age} = 26.97, *SD*= 11.72); 68 were males, and 238 females. They completed the questionnaire individually and were recruited through the social network of one research collaborator.

Regarding occupations, 2.7% were manual or office workers; 9.2% were retailers, employees or teachers in primary schools; 7.9% were professionals, teachers in secondary schools or academics, while 4.2% were housekeepers or unemployed. Finally, 67.6% were students, and 8.5% did not indicate their occupation. For this sample, we also collected respondents' educational level: 0.3% of participants had attended primary or basic school, 2.3% secondary school; 59.8% high school and, finally, 37.6% had a university degree. Considering that the target group was both an ethnic and a religious group, we also asked participants to report their religious affiliation: 46,1% were Catholic Christians, 53,9% were non-believers or had other religious affiliations.

Method

Unless otherwise noted, we used the same measures as in Study 1, changing only the outgroup.

Positive and negative intergroup contact. We again measured positive contact and negative contact with two items each: "How many Muslim people do you know and see in a positive way?", "How often do you meet Muslim people you know and perceive it as positive?"; "How many Muslim people do you know and see in a negative way?", "How often do you meet Muslim people you know and perceive it as negative?". Participants responded on a five□point scale (quantity of contact: *0 = none*; *1 = 1-2*; *2 = 3-4*; *3 = 5-7*; *4 = more than 7*; frequency of contact: *0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often*). The Spearman-Brown coefficient was adequate for both positive (ρ =.69) and negative (ρ =.78) contact.

Intergroup anxiety. Participants again rated on a scale from 0 (*not at all*) to 4 (*very much*) how they felt about "Muslim people" with reference to six emotional reactions (e.g., calm [R], embarrassed). Items were averaged to form a reliable composite score (Cronbach's α = .92).

Empathy for the outgroup. Participants were again asked to think about discrimination and difficulties experienced by Muslim people living in Italy, and to rate 10 emotional reactions (e.g., sorrow, emotional closeness) on a scale from 0 (*not at all*) to 4 (*very much*). A reliable composite score was computed by averaging the ten items (α = .95).

Deprovincialization. Participants completed the same 6-item scale, responding on a scale from 0 (= *does not describe me at all*) to 4 (= *describes me very well*). Items were averaged to form a reliable composite score (α = .84).

Outgroup attitudes. Participants evaluated Muslim people on the same four adjectives (positive, unfavorable[R], friendly, negative[R], from 0= *not at all* to 4= *very much*). Higher scores on this measure represented more positive attitudes toward the outgroup (α =.90).

Islamophobia. We measured islamophobia with 12 new items taken from the Islamophobia Scale (IS) by Lee, Gibbons, Thompson, and Timani (2009). The items assessed individuals' fear-related attitudes toward Muslim people and the religion of Islam and were adapted for the Italian context. Participants responded on a scale from 1

(=*strongly disagree*) to 5 (=*strongly agree*). The scale showed good internal reliability (α =.91).

Social dominance orientation (SDO). Responses were again provided on a 7-point scale (from 1 = *strongly disagree* to 7 = *strongly agree*; α = .92).

Quiet Ego. Participants again rated each item using a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale showed good internal reliability (α =.82).

Social desirability. Participants again completed the 16-item Italian version by Bobbio and Manganelli (2011) that measures two different kinds of social desirability: self-deceptive enhancement and impression management. Participants rated the 16 items on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The reliability of both the self-deceptive enhancement (α = .76) and the impression management (α = .71) subscales was good.

Results

Preliminary analyses

Means, standard deviations, and correlations between measures are presented in Table 2.1. A one sample t-test was conducted to test if the mean scores of the measures were significantly different from the midpoint of their response scales. Frequency of negative contact was significantly below the midpoint of the response scale while positive contact did not differ significantly from the midpoint.

Participants' levels of intergroup anxiety and islamophobia were significantly lower than the midpoint of the scale while levels of empathy, deprovincialization and outgroup attitudes were higher than the mean score of the scale. Levels of quiet ego, self-deception and impression management were higher than the midpoint of the scale while levels of SDO were significantly lower than the mean score of the scale.

Considering the correlations between variables, consistent with Study 1, positive and negative contact were not related. Positive contact was positively associated with empathy, deprovincialization and outgroup attitudes, and negatively related to intergroup anxiety and islamophobia. Conversely, negative contact had a positive association with anxiety and islamophobia, and was negatively associated with deprovincialization, empathy and attitudes. Also in this study, SDO and quite ego had similar but opposite

associations with all the intergroup variables. SDO was negatively associated with positive contact, empathy, deprovincialization and attitudes, and had a positive relation with anxiety and islamophobia. On the contrary, quiet ego was positively linked to positive contact, empathy, deprovincialization and outgroup attitudes, and it was negatively associated with anxiety and islamophobia. Finally, self-deception was positively related only to SDO while impression management was positively related to empathy, deprovincialization, outgroup attitudes and quiet ego, and negatively associated with negative contact, islamophobia and SDO.

Table 2.1. *Descriptive Statistics and Correlations between Variables*

	M (SD)	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*
1. Positive Contact (0-4)	1 .91 (1.05)										
2. Negative Contact (0-4)	0.95 (1.06)***	.02									
3. Anxiety (0-4)	1.83 (1.04)**	- .32***	.36***								
4. Empathy (0-4)	2.32 (1.03)***	.31***	- .33***	- .46***							
5. Deprovincialization (0-4)	3.27 (0.75)***	.35***	- .44***	- .56***	.58***						
6. Outgroup attitudes (0-4)	2.79 (0.97)***	.40***	- .50***	- .59***	.64***	.66***					
7. Islamophobia (1-5)	2 .18 (0.85)***	- .41***	.38***	.60***	- .64***	- .67***	- .72***				
8. SDO (1-7)	2.11 (1.03)***	- .24***	.39***	.42***	- .57***	- .64***	- .56***	.63***			
9. Quiet Ego (1-5)	3 .67 (0.58)***	.35**	- .21***	- .34***	.57***	.58***	.44***	- .44***	- .45***		
10. Self-deception (1-6)	3.34 (0.87)**	- .03	.03	- .11	- .05	.02	- .02	.05	.15**	.07	
11. Impression management (1-6)	4.26 (0.91)***	.10	- .12*	- .08	.22***	.20***	.16**	- .14*	- .15*	.30***	.10

Note. SDO denotes Social Dominance Orientation. Differences from midpoint: response scale ranges are reported in parentheses; $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

Mediation analyses

To test the hypothesized mediation of intergroup anxiety, empathy and deprovincialization in the relationship between positive and negative contact and prejudice indexes, we tested a path model with observed variables using Mplus 7 (Muthén & Muthén, 2012). Positive and negative contact were entered as predictors; anxiety, empathy, and deprovincialization were entered as mediators; and outgroup attitudes and islamophobia were entered as criterion variables. Direct paths from the predictors to the outcome measures were also estimated, as well as correlations between the predictors, and between the mediators. Results are reported in Table 2.2.

Positive contact had a positive relation with empathy and deprovincialization, and a negative association with intergroup anxiety. On the contrary, negative contact was positively associated with anxiety and negatively associated with empathy and deprovincialization. Regarding the associations between the mediators and the criterion variables, empathy and deprovincialization were positively related to outgroup attitudes and negatively associated with islamophobia. Conversely, intergroup anxiety was negatively associated with outgroup attitudes and positively linked with islamophobia. In this study, positive and negative contact had direct effects on the outcome measures: positive contact was associated with more positive outgroup attitudes and less islamophobia, while negative contact was linked to more negative attitudes and more islamophobia (see Figure 2.1).

To test for the indirect effects, we used bootstrapping procedures with 10,000 resamples. Results of the analysis showed that both for positive and for negative contact, the indirect effects of anxiety, empathy and deprovincialization on outgroup attitudes and islamophobia were all significant, confirming the hypothesized mediation model (see Table 2.3).

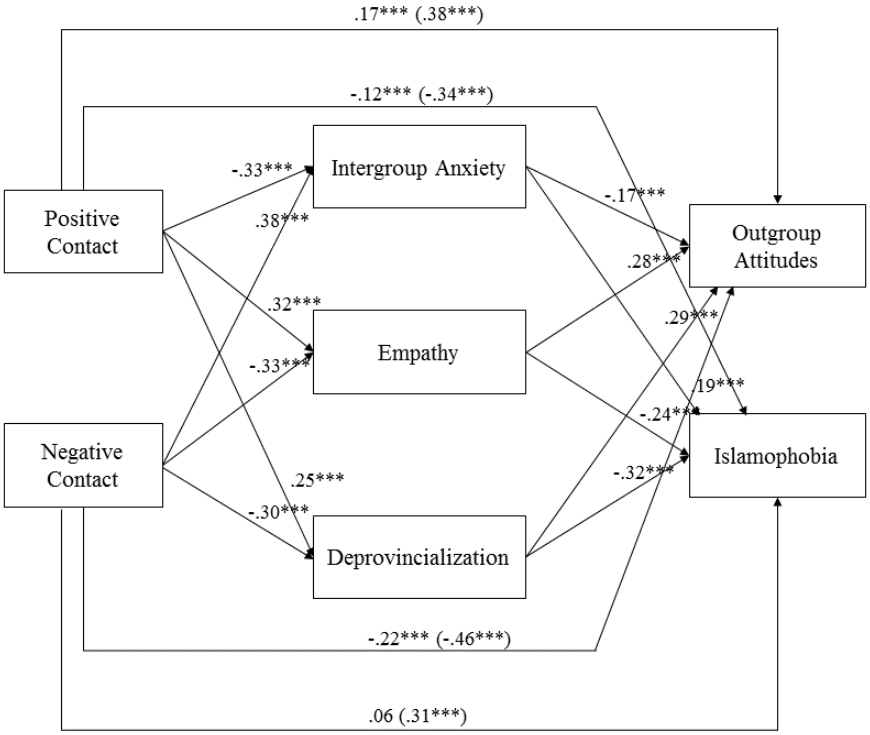

Figure 2.1. *Indirect effects of Positive and Negative contact on Outgroup Attitudes and Islamophobia, via Anxiety, Empathy and Deprovincialization. Unstandardized coefficients are reported. Direct effect from Positive and Negative contact to Outgroup Attitudes are reported in parentheses. ***p < .001.*

Table 2.2. *Path Model of the Effects of Positive and Negative Intergroup Contact on Attitudes towards Muslim people and Islamophobia, via Anxiety, Empathy, and Deprovincialization.*

	Anxiety				*Empathy*				*Deprovincialization*				*Outgroup attitudes*				*Islamophobia*			
	b	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*P*
Intercept	2.11	0.12		<.001	2.03	0.12		<.001	3.07	0.08		<.001	1.38	0.25		<.001	3.61	0.22		<.001
Positive Contact	-0.33	0.05	-.33	<.001	0.32	0.05	.32	<.001	0.25	0.03	.36	<.001	0.17	0.04	.18	<.001	-0.12	0.03	-.15	<.001
Negative Contact	0.38	0.05	.38	<.001	-0.33	0.05	-.34	<.001	-0.30	0.03	-.43	<.001	-0.22	0.04	-.24	<.001	0.06	0.03	.08	.071
Anxiety													-0.17	0.04	-.18	<.001	0.19	0.04	.23	<.001
Empathy													0.28	0.04	.29	<.001	-0.24	0.04	-.30	<.001
Deprovincialization													0.29	0.07	.22	<.001	-0.32	0.06	-0.28	<.001
R^2	.25***				.22***				.31***				.63***				.60***			

Note. ***p <.001

Table 2.3. *Unstandardized Total and Indirect Effects, and Bootstrap Point Estimates [95% Bootstrap Confidence Intervals] of the Effects of Positive and Negative Intergroup Contact on Attitudes towards Muslim people and Islamophobia, via Anxiety, Empathy, and, Deprovincialization.*

Predictor	*Mediators*	*Effects on Outgroup attitudes*	*Effects on Islamophobia*
Positive Contact		TE = .38*** TIE = .22***	TE = -.34*** TIE = -.22***
	Anxiety	IE = 0.06 [0.026, 0.096]	IE = -.06[-0.105, -0.033]
	Empathy	IE = 0.09 [0.049, 0.136]	IE = -.08 [-0.127, -0.042]
	Deprovincialization	IE = 0.08 [0.038, 0.122]	IE = -0.08 [-0.128, -0.045]
Negative Contact		TE = -.46*** TIE = -.24***	TE = .31*** TIE = .25***
	Anxiety	IE = -0.06 [-0.108, -0.029]	IE = 0.07 [0.039, 0.113]
	Empathy	IE = -0.09 [-0.136, -0.053]	IE = 0.08 [0.046, 0.125]
	Deprovincialization	IE = -0.09 [-0.146, -0.044]	IE = 0.10 [0.053, 0.149]

Note. TE= Total effect of predictor on criterion variable; TIE = Indirect effect of predictor on criterion variable, IE= Indirect effect of predictor on criterion variable through the mediators. ****p* <.001. Bootstrap Confidence intervals (CIs) excluding zero indicate a significant indirect effect ($p < .05$).

Interaction between positive and negative contact

As in the previous study, we centered positive and negative contact before creating their interaction term and adding it to the model. As reported in Table 2.4, the interaction of positive and negative contact was significant for all the outcome variables.

Decomposing these interactions, we found evidence for both the buffering and facilitation hypotheses (see Table 2.5): negative contact was more negatively associated with outgroup attitudes, empathy and deprovincialization and more positively related to islamophobia and intergroup anxiety when participants had less positive contact experiences. Overall, these findings support the buffering hypothesis (see Figure 2.2).

When treating positive contact as the predictor and negative contact as the moderator we found that positive contact was significantly associated with all outcome variables. However, it was more strongly related to the criterion variables for respondents who experienced more negative intergroup contact. These results were consistent with the facilitation hypothesis (see Figure 2.3).

Mediated moderation

As in the previous study, we tested for the presence of a mediated moderation. Looking at the results of Table 2.4, we found that the interaction between positive and negative contact was significantly related with outgroup attitudes and islamophobia when the mediators were not included in the model, while it was no longer significant when they were included amongst the predictors; moreover, the product between positive and negative contact was related to all the mediators. These findings support the presence of a mediated moderation: intergroup emotions and deprovincialization mediated the association between contact and attitudes and islamophobia, and, at the same time, the relationship between intergroup contact and anxiety, empathy and deprovincialization was moderated by the valence of contact experience.

Table 2.4. *Associations between Positive and Negative Intergroup Contact, Attitudes towards Muslim people and Islamophobia, via Anxiety, Empathy, and Deprovincialization, Including the Interaction between Positive and Negative contact.*

	Anxiety		*Empathy*		*Deprovincialization*		*Outgroup Attitudes*		*Outgroup Attitudes*		*Islamophobia*		*Islamophobia*	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Positive Contact	-0.33***	0.05	0.32***	0.05	0.26***	0.03	0.37***	0.04	0.17***	0.04	-0.34***	0.04	-0.12***	0.03
Negative Contact	0.36***	0.05	-0.32***	0.05	-0.29***	0.03	-0.44***	0.04	-0.22***	0.04	0.30***	0.04	0.06	0.03
Positive Contact* Negative Contact	-0.12*	0.05	0.11*	0.05	0.07*	0.03	0.12**	0.04	0.06	0.03	-0.11**	0.04	-0.03	0.03
Anxiety									-0.16***	0.04			0.18***	0.04
Empathy									0.28***	0.04			-0.24***	0.04
Deprovincialization									0.28***	0.07			-0.31***	0.06
R^2	.27***		.24***		.32***		.43***		.63***		.35***		.60***	

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

Table 2.5. *Moderation Analysis: Results of the Interaction between Positive and Negative Contact*

Predictor	*Moderator*	*Outcome variable*	*Interaction effect*	*High levels of moderator*	*Low levels of moderator*
Negative Contact	Positive Contact	Outgroup Attitudes	0.12 (0.04) **	-0.31 (0.05) ***	-0.56 (0.06) ***
Negative Contact	Positive Contact	Islamophobia	-0.11 (0.04) **	0.18 (0.06) **	0.41 (0.05) ***
Negative Contact	Positive Contact	Anxiety	-0.12 (0.05) *	0.23 (0.08) **	0.48 (0.06) ***
Negative Contact	Positive Contact	Empathy	0.11 (0.05) **	-0.20 (0.08) *	-0.43 (0.06) ***
Negative Contact	Positive Contact	Deprovincialization	0.07 (0.03) *	-0.22 (0.05) ***	-.37 (0.05) ***
Positive Contact	Negative Contact	Outgroup Attitudes	0.12 (0.04) **	0.50 (0.06) ***	0.25 (0.06) ***
Positive Contact	Negative Contact	Islamophobia	-0.11 (0.04) **	-0.45 (0.05) ***	-0.23 (0.05) ***
Positive Contact	Negative Contact	Anxiety	-0.12 (0.05) *	-0.46 (0.07) ***	-0.20 (0.07) **
Positive Contact	Negative Contact	Empathy	0.11 (0.05) **	0.44 (0.04) ***	0.20 (0.07) **
Positive Contact	Negative Contact	Deprovincialization	0.07 (0.03) *	0.33 (0.05) ***	0.18 (0.05) ***

Note. Interaction terms are unstandardised regression coefficients. Numbers in parentheses are standard errors. High moderator = 1 standard deviation (SD) above the mean; Low moderator = 1 standard deviation (SD) below the mean. *$p < .05$, **$p < .01$, ***$p < .001$.

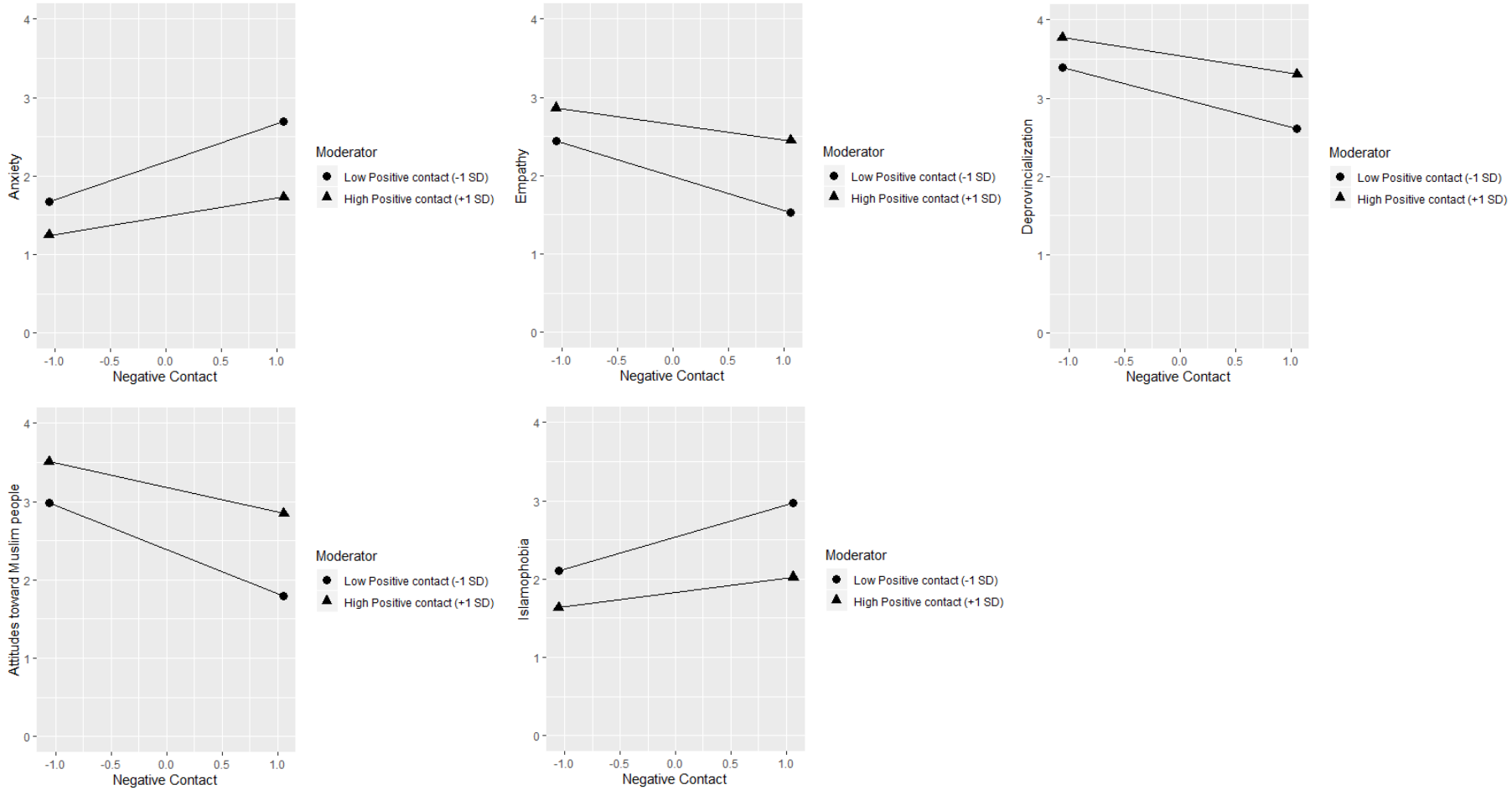

Figure 2.2. *Buffering Role of Positive Contact in the Association between Negative Contact and Anxiety, Empathy, Deprovincialization Attitudes toward Muslim people, and Islamophobia.*

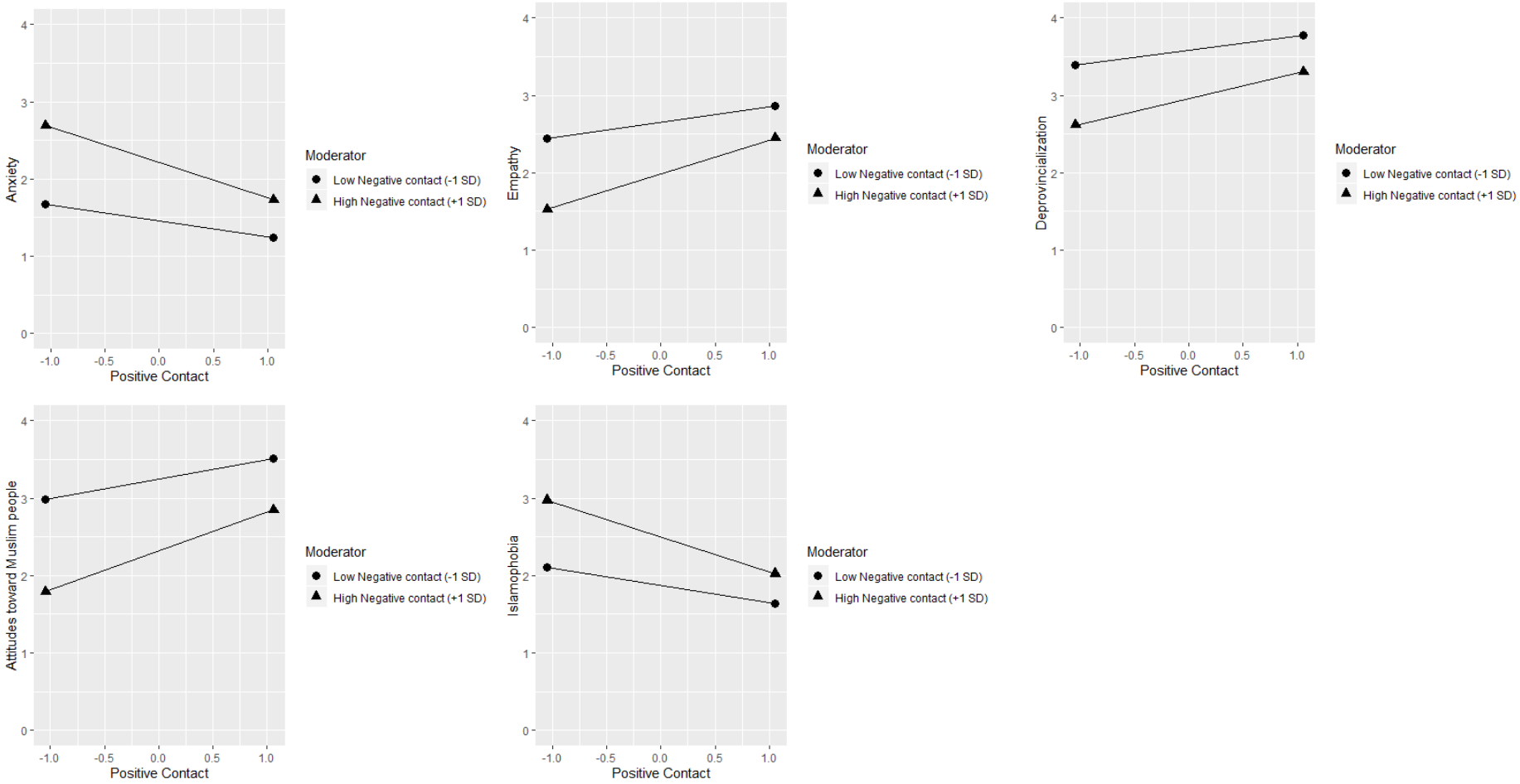

Figure 2.3. *Facilitating Role of Negative contact in the Association between Positive Contact and Anxiety, Empathy, Deprovincialization Attitudes toward Muslim people, and Islamophobia*

Mediation analyses with individual dispositions

To examine the association between SDO, quiet ego, and the intergroup variables, we tested a path model in which SDO and quiet ego were the predictors; positive and negative contact were entered as mediators at the level one; anxiety, empathy, and deprovincialization were entered as mediators at level two; and outgroup attitudes and islamophobia were the criterion variables (see Table 2.6). Results showed that SDO was positively associated with negative contact which in turn had a negative relation with empathy and deprovincialization and it was linked to more intergroup anxiety. Moreover, SDO was not associated with positive contact but it was related to more intergroup anxiety and to less empathy and deprovincialization.

Quiet ego was related with more positive intergroup contact which in turn had a positive association with empathy and deprovincialization and a negative relation with anxiety. Quiet ego was also associated with empathy and deprovincialization but not with anxiety. No association between quiet ego and negative contact emerged.

We then tested for the significance of indirect effects applying the bootstrapping procedures using 10,000 resamples, and we found support for a sequential mediation (see Table 2.7). SDO was associated with less positive attitudes toward Muslim people first, through negative contact and then via anxiety, empathy and deprovincialization. Moreover, SDO was also related to more islamophobia through negative contact and then via more anxiety and less deprovincialization.

Quiet ego, on the contrary, was related to better outgroup attitudes and less islamophobia, first via more positive contact and then via less anxiety and more deprovincialization.

The test of the two-step mediation enable us to test also for the indirect effects of anxiety, empathy and deprovincialization in the relation between positive and negative contact and attitudes and islamophobia controlling for SDO and quiet ego. Comparing the results reported in Tables 2.3 and 2.8, for negative intergroup contact the indirect effects of all mediators were still significant. However, for positive contact, including individual dispositions in the model, only the indirect effects of anxiety and deprovincialization were significant, while the indirect effect of empathy disappeared.

Table 2.6. *Path Model of the Effects of SDO and Quiet Ego on Attitudes towards Muslim people and Islamophobia via Positive and Negative Intergroup Contact, Anxiety, Empathy, and Deprovincialization.*

	Positive Contact		*Negative Contact*		*Anxiety*		*Empathy*		*Deprovincialization*		*Outgroup attitudes*		*Islamophobia*	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
SDO	-0.11	0.06	0.37***	0.06	0.21***	0.06	-0.33***	0.05	-0.27***	0.03	-0.08	0.05	0.19***	0.04
Quiet ego	0.57***	0.11	-0.08	0.11	-0.20	0.10	0.65***	0.09	0.39***	0.06	-0.10	0.08	0.12	0.07
Positive Contact					-0.24***	0.05	0.11*	0.04	0.11***	0.03	0.17***	0.04	-0.12***	0.03
Negative Contact					0.26***	0.05	-0.12**	0.04	-0.15***	0.03	-0.21***	0.04	0.04	0.03
Anxiety											-0.17***	0.04	0.18***	0.04
Empathy											0.28***	0.05	-0.22***	0.04
Deprovincialization											0.27***	0.07	-0.25***	0.06
R^2	.14***		.15***		.30***		.47***		.56***		.64***		.64***	

Note. SDO denotes Social Dominance Orientation. *$p < .05$, **$p < .01$, ***$p < .001$

Table 2.7. *Unstandardized Total and Indirect Effects, and Bootstrap Point Estimates [95% Bootstrap Confidence Intervals] of the Effects of SDO and Quiet Ego on Attitudes towards Muslim people and Islamophobia via Positive and Negative Intergroup Contact, Anxiety, Empathy, and Deprovincialization.*

Predictor	*Mediator I*	*Mediator II*	*Effects on Outgroup attitudes*	*Effects on Islamophobia*
SDO			TE = -.44*** TIE=-.36***	TE = .45*** TIE = .26***
	Negative Contact	Anxiety	IE = -0.02 [-0.035, -0.006]	IE = 0.02 [0.008, 0.035]
		Empathy	IE= -0.01 [-0.029, -0.004]	
		Deprovincialization	IE=-0.02 [-0.036, -0.006]	IE = 0.02 [0.005, 0.034]
Quiet Ego			TE = .40*** TIE =.50***	TE = -.28*** TIE =-.41***
	Positive Contact	Anxiety	IE = 0.02 [0.009, 0.047]	IE = -0.02 [-0.051, -0.010]
		Deprovincialization	IE = 0.02 [0.007, 0.041]	IE=-0.02 [-0.038, -0.005]

Note. SDO denotes Social Dominance Orientation. TE= Total effect of predictor on criterion variable; TIE = Indirect effect of predictor on criterion variable, IE= Indirect effect of predictor on criterion variable through the mediators. Only the significant paths are reported. ***p <.001. Bootstrap Confidence intervals (CIs) excluding zero indicate a significant indirect effect ($p < .05$).

Table 2.8. *Unstandardized Total and Indirect Effects, and Bootstrap Point Estimates [95% Bootstrap Confidence Intervals] of the Effects of Positive and Negative Intergroup Contact on Attitudes towards Muslim people and Islamophobia via Anxiety, Empathy, and Deprovincialization controlling for SDO and Quiet Ego.*

Predictor	*Mediators*	*Effects on Outgroup attitudes*	*Effects on Islamophobia*
Positive Contact		TE=.27*** TIE=.10***	TE = -.22*** TIE = -.09***
	Anxiety	IE = 0.04 [0.026, 0.096]	IE = -.04 [-0.105, -0.033]
	Deprovincialization	IE = 0.03 [0.038, 0.122]	IE = -0.03 [-0.128, -0.045]
Negative Contact		TE= -.33*** TIE=-.12***	TE = .15*** TIE = .11***
	Anxiety	IE = -0.04 [-0.108, -0.029]	IE = 0.05 [0.039, 0.113]
	Empathy	IE = -0.03 [-0.136, -0.053]	IE = 0.03 [0.046, 0.125]
	Deprovincialization	IE = -0.04 [-0.146, -0.044]	IE = 0.04 [0.053, 0.149]

Note. TE= Total effect of predictor on criterion variable; TIE = Indirect effect of predictor on criterion variable, IE= Indirect effect of predictor on criterion variable through the mediators. Only the significant paths are reported. ***p <.001. Bootstrap Confidence intervals (CIs) excluding zero indicate a significant indirect effect (p < .05).

Interaction between positive and negative contact in the model with individual dispositions

We repeated the moderation analyses reported in Table 2.4, including SDO and quiet ego to test if the interaction between positive and negative contact was still present controlling for these individual dispositions. Results are reported in Tables 2.9 and 2.10. Except for outgroup attitudes the interactions between positive and negative contact disappeared. These findings are very similar to those of the first study, and provide further evidence for the strong associations between SDO and quiet ego and intergroup emotions, deprovincialization and outgroup evaluations.

Controlling for demographic variables and socially desirable responding

We repeated the analysis reported in Tables 2.9 and 2.10 adding age, gender, educational level, religious affiliation and the two components of social desirability as control variables.

Results were consistent with those of Tables 2.9 and 2.10. In addition, age was positively associated with intergroup anxiety and islamophobia, self-deception was negatively related to intergroup anxiety, and women reported more empathy than men. Finally, participants that identified themselves as Catholics, compared to non-believers, exhibited more anxiety and islamophobia, less deprovincialization, and worse outgroup attitudes.

Table 2.9. *Associations between Positive and Negative Intergroup Contact and Anxiety, Empathy and Deprovincialization, Including the Interaction between Positive and Negative contact and controlling for SDO and Quiet Ego.*

	Anxiety		*Empathy*		*Deprovincialization*	
	b	*SE*	*b*	*SE*	*b*	*SE*
SDO	0.19**	0.06	-0.32***	0.05	-0.27***	0.03
Quiet ego	-0.21*	0.10	0.65***	0.09	0.39***	0.06
Positive Contact	-0.24***	0.05	0.11*	0.04	0.11***	0.03
Negative Contact	0.25***	0.05	-0.12*	0.04	-0.15***	0.03
Positive Contact*Negative Contact	-0.09	0.05	0.06	0.04	0.03	0.03
Anxiety						
Empathy						
Deprovincialization						
R^2	.31***		.48***		.56***	

Note. SDO denotes Social Dominance Orientation. *$p < .05$, **$p < .01$, ***$p < .001$

Table 2.10. *Associations between Positive and Negative Intergroup Contact and Attitudes towards Muslim people and Islamophobia, Including the Interaction between Positive and Negative contact and controlling for SDO and Quiet Ego.*

	Outgroup Attitudes		*Outgroup Attitudes*		*Islamophobia*		*Islamophobia*	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
SDO	-0.26***	0.05	-0.08	0.05	0.36***	0.04	0.19***	0.04
Quiet ego	0.23**	0.08	-0.09	0.08	-0.15*	0.07	0.12	0.07
Positive Contact	0.28***	0.04	0.18***	0.04	-0.22***	0.04	-0.12***	0.03
Negative Contact	-0.32***	0.04	-0.21***	0.04	0.15***	0.04	0.04	0.03
Positive Contact*Negative Contact	0.09*	0.04	0.05	0.03	-0.05	0.03	-0.01	0.03
Anxiety			-0.16***	0.04			0.18***	0.04
Empathy			0.27***	0.05			-0.21***	0.04
Deprovincialization			0.27***	0.07			-0.25***	0.06
R^2	.52***		.64***		.51***		.63***	

Note. SDO denotes Social Dominance Orientation. *$p < .05$, **$p < .01$, ***$p < .001$

Discussion

Taken together, results of the second study confirmed the findings of Study 1. We added further evidence for H1 and H2, as positive and negative contact with Muslim people were associated with intergroup emotions, deprovincialization, and prejudice indexes in an opposite way. Consistent with Study 1, positive contact was associated with more empathy and less intergroup anxiety, increased deprovincialization, and was linked to better outgroup attitudes. Negative contact was related with higher empathy and deprovincialization, increased intergroup anxiety, and worsened outgroup attitudes. Moreover, we found that positive and negative contact had antithetical relation to islamophobia: while negative contact was associated to more islamophobia, positive contact had a negative association with it.

Results of the analyses concerning the mediation of anxiety, empathy, and deprovincialization were consistent with Study 1 and supported H3. Positive contact was associated to more positive outgroup attitudes and to less islamophobia via empathy, anxiety, and deprovincialization. Conversely, negative contact was related to more negative outgroup attitudes and less islamophobia and these relationships were mediated by anxiety, empathy, and deprovincialization.

This study also provided further evidence for the existence of a valenced contact interaction, which this time emerged for all the outcomes, corroborating H4. The analyses of the simple slopes matched the predictions of both the *buffering* (H4a) and the *facilitation* (H4b) hypotheses. Moreover, a mediated moderation process emerged as the effect of positive and negative contact was mediated by anxiety, empathy and deprovincialization and the relationship between positive and negative contact and the mediators was shaped by the valence of contact experience.

Regarding the effects of SDO and quiet ego, results confirmed those of Study 1, clarifying that these individual dispositions operate following two distinct and opposite directions. SDO had a negative association with negative contact, was related to more anxiety and less empathy and deprovincialization. Quiet ego was linked to more positive contact, empathy, and deprovincialization. These individual dispositions were related also to attitudes and prejudice following two opposite paths: SDO was indirectly associated with outgroup attitude first via negative contact and then through anxiety, empathy, and

deprovincialization; it was also related to islamophobia first through negative contact and then via anxiety and deprovincialization. On the contrary, quiet ego was associated with better outgroup attitudes and decreased islamophobia via positive contact and then through anxiety and deprovincialization.

When testing the mediational role of anxiety, empathy, and deprovincialization in the relationship between positive and negative contact controlling for individual dispositions, the results were slightly different. The indirect effect of negative contact on attitudes and islamophobia via anxiety, empathy, and deprovincialization was still present. However, for positive contact, only the indirect effects of anxiety and deprovincialization held including individual dispositions in the model, while the indirect effect of empathy disappeared. Furthermore, including SDO and quiet ego in the model only the effect of the interaction of positive and negative contact on outgroup attitudes was still significant. Taken together these results confirmed the important influence of SDO and quiet ego in the relationship between positive and negative contact and intergroup outcomes.

Study 3

Introduction

In the third study we examined the relationship between positive and negative intergroup contact experiences and both attitudes and prejudice towards gay people. Moreover, to further examine the association between individual dispositions and intergroup variables, we considered SDO, quiet ego, psychological entitlement, and need for closure (as in Study 1). We also added another individual disposition, agreeableness, a personality trait that has been found to be related to both contact and prejudice. In addition, we included as control variables age, gender, level of education, and two types of socially desirable responding (i.e., self-deceptive enhancement and impression management).

Participants

Participants were 374 Italian adults, aged between 18 and 83 years (M_{age} = 26.97, *SD* = 11.72); 123 were men, 249 were women. Participants, who were all Italians and heterosexuals, completed the questionnaire individually and were recruited through the social network of two research collaborators.

Regarding occupations, 4% were manual or office workers; 41.2% were retailers, employees or teachers in primary schools; 13.4% were professionals, teachers in secondary schools or academics, while 7.8% were housekeepers, unemployed or retired. Finally, 30.2% were students. The highest education level achieved was secondary school for 4.5% of the sample, high school diploma for 45.7% of the sample, bachelor's degree for 20.6% of the sample, and higher degrees (master, PhD) for 28.3% of the sample.

Method

Positive and negative contact. As this sample was taken from a research project with other, specific aims, in this study the measure of positive and negative intergroup contact distinguished between episodes of intimate and superficial contact. To measure intimate contact, we first asked participants to think about encounters with gay people they personally knew well. Positive contact was then measured with three items: "How often are the interactions with gay people you know: 1. Friendly? 2. Positive? 3. Pleasant?". Similarly, negative contact was measured with the items: "How often are the interactions with gay people you know: 1. Unfriendly? 2. Negative? 3. Unpleasant?". Participants answered all these items on 5-point scales (*0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often*). We measured superficial contact by asking participants to think about casual superficial encounters with gay people they did not know well. Positive contact was then measured with three items: "How often are the interactions with gay people you do not know well: 1. Friendly? 2. Positive? 3. Pleasant?". Similarly, negative contact was measured with the items: "How often are the interactions with gay people you do not know well: 1. Unfriendly? 2. Negative? 3. Unpleasant?". Participants answered all these items on 5-point scales (*0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often*). We averaged the items measuring intimate and superficial contact, separately for positive ($\alpha = .94$) and negative ($\alpha = .81$) contact.

Intergroup Anxiety. To measure anxiety, we asked participants to imagine entering a bar and discovering that it was a bar attended by gay people only. Participants rated on a scale from 0 (*not at all*) to 4 (*very much*) six emotional reactions (e.g., calm [R], embarrassed; Voci & Hewstone, 2003). Items were averaged to form a reliable composite score (α=.84).

Empathy for the outgroup. Empathy toward gay people was measured with six items that addressed participants' perspective taking and emotional reactions to the way gay people are treated by society. Participants responded on a scale from 0 (*not at all*) to 4 (*very much*). A reliable composite score was computed by averaging the ten items (α=.69).

Deprovincialization. We measured deprovincialization using the same six-item scale presented in Studies 1 and 2. Participants responded on a scale from 0 (= *does not*

describe me at all) to 4 (= *describes me very well*). Items were averaged to form a reliable composite score (α=.79).

Outgroup attitudes. Participants were asked to evaluate gay people on the same four adjectives used in the previous studies (positive, unfavorable[R], friendly, negative[R]), from 0= *not at all* to 4= *very much*). Higher scores on this measure represented more positive attitudes toward the outgroup (α =.73).

Prejudice toward gay people. We assessed prejudice toward the outgroup with a nine-item scale (example items: "It is crazy that gay couples think they can be recognized as families", "Homosexual couples should have the right to adopt children, if they really wished so" – reversed, response scale from *0 = completely disagree* to *4 = completely agree*, α = .72) These items addressed homosexuality-related issues relevant in the Italian cultural context and were partly derived from the Attitudes toward Lesbians and Gay Men Scale (ATLG; Herek, 1984), and partly developed for the Italian context (see Bosetti, Voci, & Pagotto, 2011).

Social dominance orientation (SDO). The same 16-item measure used in Studies 1 and 2 was used. Responses were provided on a 7-point scale (from 1 = *strongly disagree* to 7 = *strongly agree*; α = .88).

Quiet Ego. To measure quiet ego, we used the same 14-item measure employed in the previous studies. Participants rated each item using a scale from 1 (*strongly disagree*) to 5 (*strongly agree*). The scale showed good internal reliability (α = .81).

Psychological entitlement. The nine-item measure of Study 1 was employed. Participants rated each item on 7-point response scale (from 1 = *strong disagreement* to 7 = *strong agreement*). Cronbach's alpha was .82.

Need for Closure (NFC). The same scale as in Study 1 was used. Participants rated the 15 items on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The reliability of the scale was good (α = .88).

Agreeableness. To measure agreeableness, we used nine items taken from the Italian Big Five Inventory (Fossati, Borroni, Marchione, & Maffei, 2011). Responses were provided on a 5-point scale (from 1 = *strongly disagree* to 5 = *strongly agree*; α = .73).

Social Desirability. As in Studies 1 and 2, we used the 16-item Italian version by Bobbio and Manganelli (2011) that measures two different kinds of social desirability:

self-deceptive enhancement and impression management. Participants rated the 16 items on a 6-point scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The reliability of both the self-deceptive enhancement ($\alpha = .76$) and impression management ($\alpha = .71$) subscales was good.

Results

Preliminary Analyses

Means, standard deviations, and correlations between variables are presented in Table 3.1. We conducted a one sample t-test to test if the mean scores of the measures were significantly different from the midpoint of their response scales. Results showed that the frequency of positive contact was slightly higher than the mean score of the scale while negative contact was lower. Levels of empathy, deprovincialization, and attitudes toward gay people were significantly higher than the midpoint of the scale while prejudice and intergroup anxiety were lower. Considering individual dispositions, levels of SDO, entitlement, and impression management were significantly lower than the mean score of the scale, while the means of quiet ego and agreeableness were higher. Finally, the mean scores of NFC and self-deception were not significantly different from the midpoint of the scale.

As regards correlations between the variables, positive and negative contact were again not related to each other. Positive contact was positively related to empathy, deprovincialization and outgroup attitudes and it was negatively linked to intergroup anxiety and prejudice. Conversely, negative contact had a negative association with empathy, deprovincialization and attitudes, and a positive relation with prejudice and intergroup anxiety.

SDO had a negative association with positive contact, empathy, deprovincialization, and outgroup attitudes; it was also positively related to negative contact, anxiety, and prejudice towards gay people. On the contrary, quiet ego was positively linked to positive contact, empathy, and attitudes, and it was negatively associated with anxiety and prejudice. In this study, quiet ego was not associated with negative contact. NFC was positively associated with anxiety and negatively correlated with deprovincialization and attitudes but not with empathy. It was also positively related

to prejudice. Agreeableness was linked to all the variables: it was negatively related to negative contact, anxiety and prejudice and positively related to positive contact, empathy, deprovincialization, and attitudes. Finally, entitlement was negatively correlated to empathy and deprovincialization and positively associated with anxiety and prejudice. Self-deception was positively correlated with all individual dispositions. Impression management was positively related to deprovincialization, prejudice and quiet ego.

Table 3.1. *Descriptive Statistics and Correlations between Variables*

	M (SD)	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*
1. Positive Contact (0-4)	2.18 (1.02)**													
2. Negative Contact (0-4)	.24 (.40)***	- .01												
3. Anxiety (0-4)	1.09 (.66)***	- .35***	.19***											
4. Empathy (0-4)	3.03 (.81)***	.26***	- .13*	- .30***										
5. Deprovincialization (0-4)	3.12 (.74)***	.35***	- .14*	- .38***	.36***									
6. Outgroup attitudes (0-4)	3.14 (.62)***	.57***	- .23***	- .47***	.37***	.41***								
7. Prejudice (0-4)	.61 (.59)***	- .43***	.20***	.46***	- .51***	- .50***	- .55***							
8. SDO (1-7)	2.34 (.83)***	- .16**	.18***	.34***	- .37***	- .41***	- .36***	.46***						
9. Quiet Ego (1-5)	3.72 (.57)***	.25***	- .06	- .38***	.36***	.52***	.32***	- .33***	- .34***					
10. NFC (1-6)	3.48 (.90)	- .05	- .05	.24***	- .02	- .23***	- .13*	.20***	.17**	- .19***				
11. Entitlement (1-7)	2.82 (1.07)***	- .04	.06	.11*	- .14**	- .20***	- .05	.16**	.35***	- .17**	.33***			
12. Agreeableness (1-5)	3.81 (.59)	.17**	- .12*	- .20***	.28***	.34***	.23***	- .24***	- .35***	.57***	- .13*	- .27***		
13. Self-deception (1-6)	3.48 (.84)	- .01	- .00	- .01	.00	.02	- .04	.08	.14**	.18***	.28***	.32***	.03	
14. Impression management (1-6)	2.27 (.68)***	- .07	- .05	- .05	.01	.11*	- .03	.11*	- .03	.22***	.06	- .04	.14**	.15**

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure. Differences from midpoint: response scale ranges are reported in parentheses;
*p < .05, **p < .01, ***p <.001

Mediation Analyses

We conducted the same path analysis as we did in the previous studies, considering positive and negative contact as predictors, anxiety, empathy, and deprovincialization as mediators, and attitudes and prejudice as criterion variables. Results are reported in Table 3.2.

Positive and negative contact had opposite associations with the mediators and the outcome variables. Positive contact was related to less anxiety and prejudice, and better outgroup attitudes, more empathy and deprovincialization, while negative contact was linked to more anxiety and prejudice, worse attitudes and less empathy and deprovincialization. Considering the relations between the mediators and the criterion variables, empathy and deprovincialization were both positively related to outgroup attitudes and negatively related to prejudice. Intergroup anxiety had a positive association with prejudice and it was related with worse attitudes (see Figure 3.1).

To test for the significance of the indirect effects we used the bootstrapping procedure with 10,000 resamples. Results are reported in Table 3.3 and confirmed the mediation hypothesis: positive contact was positively associated with attitudes toward gay people and negatively related to prejudice through the effect of anxiety, empathy, and deprovincialization. Negative contact had a negative indirect association with attitudes and a positive relation with prejudice via empathy, anxiety, and deprovincialization.

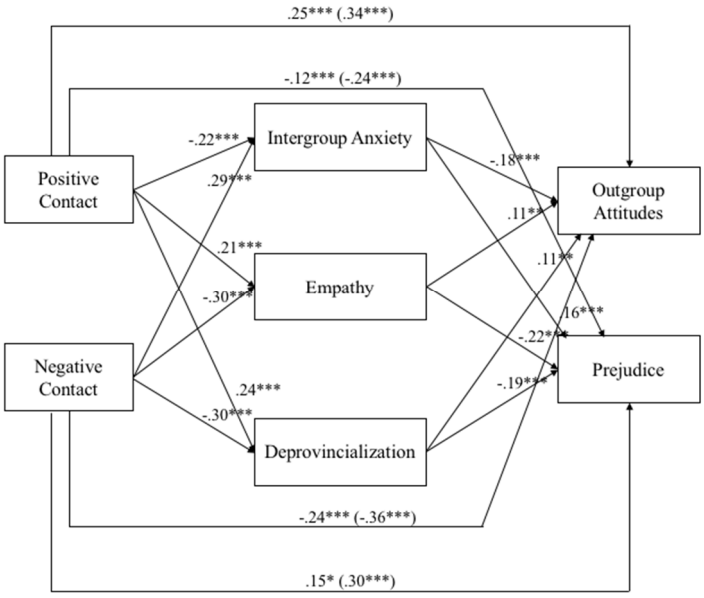

Figure 3.1. *Indirect effects of Positive and Negative contact on Outgroup Attitudes and Prejudice, via Anxiety, Empathy and Deprovincialization. Unstandardized coefficients are reported. Direct effect from Positive and Negative contact to Outgroup Attitudes are reported in parentheses. *p<.05, **p<.01, ***p < .001*

Table 3.2. *Path Model of the Effects of Positive and Negative Intergroup Contact on Attitudes and Prejudice towards Gay people, via Anxiety, Empathy, and Deprovincialization.*

	Anxiety				*Empathy*				*Deprovincialization*				*Outgroup attitudes*				*Prejudice*			
	b	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*	*b*	*SE(b)*	β	*p*
(Intercept)	1.51	0.08		<.001	2.64	0.10		<.001	2.67	0.09		<.001	2.15	0.15		<.001	1.95	0.15		<.001
Positive Contact	-0.22	0.03	-.35	<.001	0.21	0.04	.27	<.001	0.24	0.03	.33	<.001	0.25	0.03	.41	<.001	-0.12	0.02	-.21	<.001
Negative Contact	0.29	0.08	.18	<.001	-0.30	0.10	-.15	<.001	-0.30	0.09	-.16	<.001	-0.24	0.06	-.15	<.001	0.15	0.06	.10	.013
Anxiety													-0.18	0.04	-.19	<.001	0.16	0.04	.18	<.001
Empathy													0.11	0.03	.15	.001	-0.22	0.03	-.30	<.001
Deprovincialization													0.11	0.04	.14	.003	-0.19	0.04	-.24	<.001
R^2			.15***				.10***				.14***				.47***				.47***	

Note. ***p <.001

Table 3.3. *Unstandardized Total and Indirect Effects, and Bootstrap Point Estimates [95% Bootstrap Confidence Intervals] of the Effects of Positive and Negative Intergroup Contact on Attitudes and Prejudice towards Gay people, via Anxiety, Empathy, and, Deprovincialization.*

Predictor	*Mediators*	*Effects on Outgroup attitudes*	*Effects on Prejudice*
Positive Contact		TE=.34*** TIE=.09***	TE= -.24*** TIE=-.13***
	Anxiety	IE = 0.04 [0.022, 0.064]	IE = -0.03 [-0.050, -0.017]
	Empathy	IE = 0.02 [0.011, 0.040]	IE = -0.05 [-0.075, -0.028]
	Deprovincialization	IE = 0.03 [0.008, 0.051]	IE = -0.05 [-0.070, -0.026]
Negative Contact		TE= -.36*** TIE=-.12***	TE=.32*** TIE=.17***
	Anxiety	IE = -0.05 [-0.101, -0.023]	IE = 0.04 [0.020, 0.083]
	Empathy	IE = -0.03 [-0.069, -0.009]	IE = 0.07 [0.021, 0.124]
	Deprovincialization	IE = -0.04 [-0.077, -0.010]	IE = 0.06 [0.024, 0.109]

Note. TE= Total effect of predictor on criterion variable; TIE = Indirect effect of predictor on criterion variable, IE= Indirect effect of predictor on criterion variable through the mediators. ****p* <.001. Bootstrap Confidence intervals (CIs) excluding zero indicate a significant indirect effect ($p < .05$).

Interaction between Positive and Negative contact

As in previous studies positive and negative contact were centered to their mean before adding their interaction term to the model. Results are reported in Table 3.4 and showed a significant interaction only for prejudice toward gay people. Decomposing this interaction, using the same procedure as in the previous studies, we found that negative contact was associated with more prejudice only when positive contact was low (b = .57, SE = .10, p<.001). For respondents who reported more positive contact experiences, negative contact was not associated with prejudice toward gay people (b = -.04, SE = .12, p = .69). This result confirmed the presence of a *buffering* effect (see Figure 3.2).

Considering positive contact as the predictor and negative contact as the moderator, we found that positive contact was more negatively associated with prejudice when negative contact experiences were more frequent (1 *SD* below the mean: b = -.14, SE = .04, p <.001; 1 *SD* above the mean: b = -.38, SE = .06, p <.001), consistent with a *facilitation* effect (see Figure 3.3).

Mediated moderation

As no significant interactions between positive and negative contact in the relation between contact and mediators were found, we did not run a mediated moderation analysis

Table 3.4. *Associations between Positive and Negative Intergroup Contact, Attitudes and Prejudice towards Gay people via Anxiety, Empathy and Deprovincialization, including the interaction between Positive and Negative contact.*

	Anxiety		*Empathy*		*Deprovincialization*		*Outgroup Attitudes*		*Outgroup Attitudes*		*Prejudice*		*Prejudice*	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
Positive Contact	-0.23***	0.03	0.22***	0.04	0.24***	0.04	0.35***	0.03	0.26***	0.03	-0.27***	0.03	-0.14***	0.03
Negative Contact	0.28**	0.08	-0.29**	0.10	-0.30**	0.09	-0.34***	0.07	-0.23***	0.06	0.26***	0.07	0.13*	0.06
Positive Contact*Negative Contact	-0.11	0.10	0.11	0.13	-0.01	0.11	0.15	0.08	0.12	0.07	-0.30***	0.08	-0.25***	0.07
Anxiety									-0.18***	0.04			0.15***	0.04
Empathy									0.11**	0.03			-0.22**	0.03
Deprovincialization									0.12**	0.04			-0.20**	0.04
R^2	.16***		.10***		.12***		.38***		.47***		.25***		.49***	

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

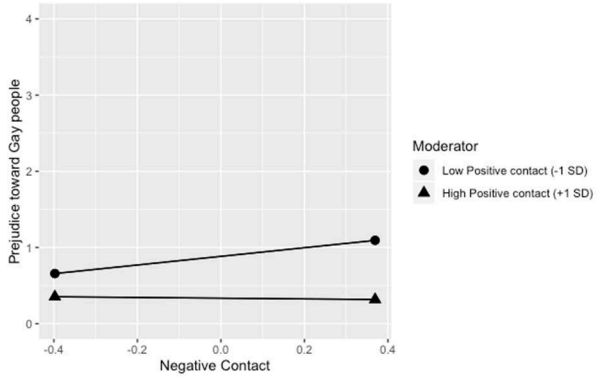

Figure 3.2. *Buffering Role of Positive Contact in the Association between Negative Contact and Prejudice towards Gay people.*

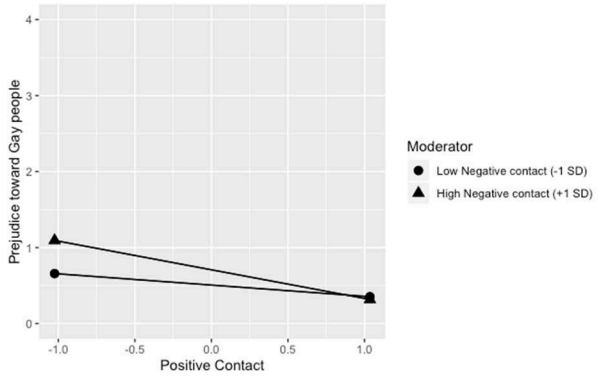

Figure 3.3. *Facilitating Role of Negative contact in the Association between Positive Contact and Prejudice towards Gay people.*

Mediation analyses with individual dispositions

As in the previous studies, to examine the effects of individual dispositions on attitudes and prejudice toward gay people, we tested a path model with observed variables. SDO, quiet ego, psychological entitlement, NFC, and agreeableness were the predictors, positive and negative contact were entered as mediators at level 1, anxiety, empathy, and deprovincialization were entered as mediators at level 2, and outgroup attitudes and prejudice were the outcomes.

Results are reported in Table 3.5 and showed that quiet ego was positively associated with positive contact, empathy, and deprovincialization, and negatively associated with anxiety. Positive contact, in turn was associated with more empathy, deprovincialization and better attitudes, and negatively related to anxiety.

SDO had a positive link with negative contact, anxiety, and prejudice, and was related to less deprovincialization and worse outgroup attitudes. Negative contact, in turn, was related to more anxiety and prejudice and it was negatively linked to deprovincialization and outgroup attitudes. Moreover, NFC was associated with more anxiety while entitlement was positively related to outgroup attitudes.

Testing for the significance of indirect effects applying the bootstrapping procedures using 10,000 resamples, a sequential mediation was found originating only from quiet ego.

Results are reported in Table 3.6 and showed that quiet ego was related to better outgroup attitudes, first from positive contact and then via anxiety. Quiet ego was also associated with less prejudice toward gay people through positive contact and then anxiety, empathy, and deprovincialization.

Again, the test of the two-step mediation gave us the chance to test also for the indirect effects of anxiety, empathy and deprovincialization in the relation between positive and negative contact and attitudes and islamophobia controlling individual dispositions. Comparing the results reported in Tables 3.3 and 3.7, for positive intergroup contact the indirect effects of all mediators on prejudice was still significant. However, for outgroup attitudes, including individual dispositions in the model, only the indirect effects of anxiety and empathy were significant, while the indirect effect of deprovincialization disappeared.

Considering the relationship between negative contact and outgroup attitudes only the indirect effect of intergroup anxiety held with the inclusion of individual disposition in the model. Furthermore, the relation between negative contact and prejudice was still explained by anxiety and deprovincialization while the indirect effect of empathy disappeared.

Table 3.5. *Path Model of the Effects of Individual dispositions on Attitudes and Prejudice towards Gay people via Positive and Negative Intergroup Contact, Anxiety, Empathy, and Deprovincialization.*

	Positive Contact		*Negative Contact*		*Anxiety*		*Empathy*		*Deprovincialization*		*Outgroup attitudes*		*Prejudice*	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
SDO	-0.11	0.07	0.09**	0.03	0.14**	0.04	-0.27***	0.05	-0.20***	0.04	-0.13***	0.04	0.14***	0.03
Quiet ego	0.37**	0.12	0.00	0.04	-0.30***	0.07	0.32***	0.08	0.48***	0.07	0.02	0.06	0.05	0.06
NFC	-0.01	0.06	-0.05	0.02	0.14***	0.04	0.06	0.04	-0.08*	0.04	-0.05	0.03	0.06*	0.03
Entitlement	0.03	0.06	0.00	0.02	-0.03	0.03	-0.02	0.04	-0.01	0.03	0.07**	0.02	-0.02	0.02
Agreeableness	0.05	0.11	-0.04	0.04	0.09	0.06	0.02	0.08	-0.00	0.06	0.01	0.05	0.03	0.05
Positive Contact					-0.17***	0.03	0.13***	0.04	0.15***	0.03	0.26***	0.03	-0.13***	0.02
Negative Contact					0.23**	0.08	-0.15	0.10	-0.18*	0.08	-0.25***	0.06	0.13*	0.06
Anxiety											-0.14**	0.04	0.12**	0.04
Empathy											0.08*	0.03	-0.20***	0.03
Deprovincialization											0.06	0.04	-0.16***	0.04
R^2	.07***		.05***		.29***		.25***		.40***		.48***		.50***	

Note. SDO denotes Social Dominance Orientation, NFC denotes Need for Closure. *$p < .05$, **$p < .01$, ***$p < .001$

Table 3.6. *Unstandardized Total and Indirect Effects, and Bootstrap Point Estimates [95% Bootstrap Confidence Intervals] of the Effects of Individual Dispositions on Attitudes and Prejudice towards Gay people via Positive Intergroup Contact, Anxiety, Empathy, and Deprovincialization.*

Predictor	*Mediator I*	*Mediator II*	*Effects on Outgroup attitudes*	*Effects on Prejudice*
Quiet Ego			TE = .23*** TIE = .21***	TE = -.20*** TIE = -.25***
	Positive Contact	Anxiety	IE = 0.01 [0.003, 0.019]	IE = -0.01 [-0.016, -0.002]
		Empathy		IE = -0.02 [-0.023, -0.004]
		Deprovincialization		IE = -0.02 [-0.019, -0.003]

Note. TE= Total effect of predictor on criterion variable; TIE = Indirect effect of predictor on criterion variable, IE= Indirect effect of predictor on criterion variable through the mediators. Only the significant paths are reported. ****p* <.001. Bootstrap Confidence intervals (CIs) excluding zero indicate a significant indirect effect ($p < .05$).

Table 3.7. *Unstandardized Total and Indirect Effects, and Bootstrap Point Estimates [95% Bootstrap Confidence Intervals] of the Effects of Positive and Negative Intergroup Contact on Attitudes and Prejudice towards Gay people, via Anxiety, Empathy, and, Deprovincialization, controlling for individual dispositions.*

Predictor	*Mediators*	*Effects on Outgroup attitudes*	*Effects on Prejudice*
Positive Contact		TE = .50*** TIE=.07***	TE = -.33*** TIE = -.12***
	Anxiety	IE = 0.04 [0.022, 0.064]	IE = -0.03 [-0.050, -0.017]
	Empathy	IE = 0.02 [0.011, 0.040]	IE = -0.05 [-0.075, -0.028]
	Deprovincialization		IE = -0.04 [-0.070, -0.026]
Negative Contact		TE = -.19*** TIE=-.04**	TE = .15*** TIE = .06***
	Anxiety	IE = -0.05 [-0.101, -0.023]	IE = 0.02 [0.020, 0.083]
	Empathy		
	Deprovincialization		IE = 0.02 [0.024, 0.109]

Note. TE= Total effect of predictor on criterion variable; TIE = Indirect effect of predictor on criterion variable, IE= Indirect effect of predictor on criterion variable through the mediators. Only the significant paths are reported. $^{**}p < .01$, $^{***}p < .001$. Bootstrap Confidence intervals (CIs) excluding zero indicate a significant indirect effect ($p < .05$).

Interaction between positive and negative contact in the model with individual dispositions

We repeated the analysis reported in Table 3.4, including SDO, quiet ego, psychological entitlement, NFC, and agreeableness to test if the association between the interaction between positive and negative contact and prejudice was still present when controlling for these variables.

Results are reported in Tables 3.8 and 3.9 and showed that, adding individual dispositions to the model, results did not change. In particular, the product between positive and negative contact was still significantly associated with prejudice.

Controlling for demographic variables and socially desirable responding

The analyses reported in Tables 3.8 and 3.9, were repeated also adding age, gender, level of education and social desirability as control variables. Results showed that, including demographic variables and social desirability in the model, the association between prejudice and the interaction between positive and negative contact disappeared. In addition, age and gender had a significant association with prejudice; age was also positively related to empathy and negatively linked to outgroup attitudes. Finally, self-deception had a negative association with anxiety and impression management was positively related to empathy.

Table 3.8. *Associations between Positive and Negative Intergroup Contact on Anxiety, Empathy and Deprovincialization, including the interaction between Positive and Negative contact and controlling for Individual Dispositions.*

	Anxiety		*Empathy*		*Deprovincialization*	
	b	*SE*	*b*	*SE*	*b*	*SE*
SDO	0.14**	0.04	-0.27***	0.05	-0.20***	0.04
Quiet ego	-0.30***	0.07	0.32***	0.08	0.48***	0.07
NFC	0.13***	0.04	0.06	0.04	-0.08*	0.04
Entitlement	-0.03	0.03	-0.02	0.04	-0.01	0.03
Agreeableness	0.08	0.06	0.03	0.08	-0.00	0.06
Positive Contact	-0.17***	0.03	0.14***	0.04	0.15***	0.03
Negative Contact	0.23**	0.08	-0.14	0.10	-0.18*	0.08
Positive Contact*Negative Contact	-0.07	0.10	0.11	0.12	-0.02	0.10
R^2	.29***		.25***		.40***	

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure. *$p < .05$, **$p < .01$, ***$p < .001$

Table 3.9. *Associations between Positive and Negative Intergroup Contact on Attitudes and Prejudice towards Gay people including the interaction between Positive and Negative contact and controlling for Individual Dispositions.*

	Outgroup Attitudes		*Outgroup Attitudes*		*Prejudice*		*Prejudice*	
	b	*SE*	*b*	*SE*	*b*	*SE*	*b*	*SE*
SDO	-0.18***	0.03	-0.12***	0.04	0.24***	0.03	0.14***	0.03
Quiet ego	0.12*	0.06	0.02	0.06	-0.13*	0.06	0.05	0.06
NFC	-0.06*	0.03	-0.05	0.03	0.06*	0.03	0.05	0.03
Entitlement	0.07*	0.03	0.06*	0.02	-0.01	0.03	-0.01	0.02
Agreeableness	-0.00	0.05	0.01	0.05	0.02	0.05	0.02	0.05
Positive Contact	0.31***	0.03	0.27***	0.03	-0.22***	0.03	-0.14***	0.02
Negative Contact	-0.29***	0.07	-0.23***	0.06	0.19**	0.07	0.11	0.06
Positive Contact*Negative Contact	0.12	0.08	0.10	0.08	-0.24**	0.08	-0.21**	0.07
Anxiety			-0.14	0.04			0.12**	0.04
Empathy			0.08	0.03			-0.20***	0.03
Deprovincialization			0.07	0.04			-0.16***	0.04
R^2	.47***		.50***		.40***		.51***	

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure. *$p < .05$, **$p < .01$, ***$p < .001$

Discussion

The third Study confirmed most of the findings of the previous ones. According to H1, we found that positive contact experiences were related to more positive attitudes and less prejudice toward gay people. Positive contact had also a positive association with empathy and deprovincialization and a negative relation with anxiety. In line with H2, negative contact had exactly opposite associations with all the outcome variables: it was positively related to anxiety and prejudice and it was negatively linked to attitudes, empathy, and deprovincialization.

The relationship between positive and negative contact and attitudes and prejudice was also mediated by intergroup emotions and deprovincialization, supporting H3 and the findings of previous studies.

Considering the interaction between positive and negative contact, in this Study it was significantly related only to prejudice toward gay people. Nevertheless, decomposing the interaction, we found a pattern of results consistent with findings of previous studies, providing further support for both the buffering and the facilitation hypotheses.

As regard to the effects of individual dispositions, as in Study 2 SDO was positively related to negative contact and intergroup anxiety, and negatively associated with empathy and deprovincialization. Quiet ego, on the contrary, was linked to more positive contact, empathy, and deprovincialization and negatively related to anxiety. Furthermore, NFC was positively associated with intergroup anxiety. However, in this study, only an indirect effect of quiet ego on outgroup attitudes and prejudice was found. In particular, quiet ego was associated with decreased prejudice through positive contact and then anxiety, empathy, and deprovincialization. Moreover, quiet ego was related to better outgroup attitudes first via positive contact and then via intergroup anxiety.

Testing the mediation model of anxiety, empathy, and deprovincialization in the relationship between positive and negative contact controlling for individual dispositions, we found that the indirect path changed to some extent. As regard to positive contact, its indirect relation with prejudice via anxiety, empathy, and deprovincialization was still present, while the relationship with outgroup attitude was mediated only by anxiety and empathy. Considering the relationship between negative contact and outgroup attitudes only the indirect effect of intergroup anxiety held with the inclusion of individual

disposition in the model. Furthermore, the relation between negative contact and prejudice was still explained by anxiety and deprovincialization while the indirect effect of empathy disappeared. Finally, the association between the interaction of positive and negative contact and prejudice was still present also considering individual dispositions in the model.

Study 4

Introduction

In the fourth Study, with a longitudinal design, we tested whether increased episodes of positive and negative contact over time, as well as their interaction, can be related to variations in anxiety, empathy, and deprovincialization and to variations in outgroup attitudes and prejudice over time. We also investigated the role of dispositional, time-invariant variables (i.e., SDO, quiet ego, NFC, entitlement, and agreeableness) in this relationship, and we controlled for the effects of age, gender, and education level.

Participants and design

Participants were recruited by psychology undergraduates in return for course credit, and asked to complete online questionnaires. Each student identified six adult individuals (if possible, three men and three women) who met three requirements: they were willing to participate in the study for three months, could not be students in the course, and could not have frequent interactions with each other, to decrease possible dependence among observations.

At the beginning of the study, participants completed a baseline questionnaire that included measures of dispositional variables (i.e., SDO, quiet ego, NFC, entitlement, agreeableness), as well as socio-demographic questions. Four weeks later they completed the longitudinal survey part of the study, in which they completed the same questionnaire about positive and negative intergroup contact with immigrant people, anxiety, empathy, deprovincialization, outgroup attitudes, and prejudice indexes, three times, with a four-week span between waves. The total number of participants who completed the baseline questionnaire was 736, while the number of participants who entered the longitudinal phase of the study was 675 in wave one, 647 in wave two, and 620 in wave three. For this study we considered only participants who both participated in the baseline and completed all three waves of the longitudinal questionnaire.

The final sample resulted in 565 participants; 270 were men and 290 were women. All participants were Italian, and their age ranged from 18 to 72 years (M = 29.48; SD =

12.73). The highest education level achieved was secondary school for 7.9% of the sample, high school diploma for 59.5% of the sample, bachelor's degree for 17.2% of the sample, and higher degrees (master, PhD) for 12.21% of the sample; 3.2% of participants did not report their education. Regarding their employment, 8.3% were manual or office workers; 19.5% were retailers, employees or teachers in primary schools; 6.4% were professionals, teachers in secondary schools or academics, while 5.8% were housekeepers or unemployed. Finally, 55.9% were students (4.1% did not indicate the occupation).

Method

Measures in the baseline questionnaire

Social dominance orientation (SDO). We used the same scale as in previous studies (Aiello et al., 2005; α = .90).

Quiet ego. The same measure employed in the previous studies was used (Boin & Voci, 2019). The scale showed good internal reliability (α = .77).

Psychological entitlement. We used the same measure as in Study 1 (Boin & Voci, 2019). The reliability of the scale was good (α = .85).

Need for Closure (NFC). The same scale as in Study 1 was employed (Mannetti et al., 2002; α = .81).

Agreeableness. The measure of agreeableness was taken from the Italian Big Five Observer (Caprara, Barbaranelli, & Borgogni, 1994). The scale, composed by eight items, was reliable (α = .72).

Measures in the three waves questionnaire

Positive and negative contact. We assessed positive and negative intergroup contact with immigrants in Italy with the same items used in Study 1. Reliability was adequate for both positive (wave 1 ρ=.76, wave two ρ= .74, wave three ρ=. 76), and negative contact (wave 1 ρ=.77, wave two ρ= .79, wave three ρ=. 81).

Intergroup Anxiety. Time-varying anxiety was assessed with the same measure as Study 1 (Voci & Hewstone, 2003). The reliability of the scale was good in all the waves (α = .89 in all the three waves).

Empathy toward the outgroup. Time-varying empathy toward the outgroup was assessed with the same items used in Study 1 (Pagotto & Voci, 2013). The scale showed good reliability in all the waves (α = .94 in the first, the second and the third wave).

Deprovincialization. Time-varying deprovincialization was assessed with the same scale as in Study 1 (Boin et al., 2019). The scale was reliable in all the waves (α = .84 in the first wave, α = .81 in the second wave, α = .82 in the third wave).

Outgroup attitudes. We assessed time-varying outgroup attitudes with the same adjectives used in Study 1 (Voci & Hewstone, 2003). The measure of outgroup attitudes was reliable in all the waves (α = .83 in the first, α = .84 the second wave, α = .82 in the third wave).

Prejudice toward immigrants. Prejudice toward immigrants was measured with a four-item scale taken from Christ et al. (2010), substituting their target outgroup (foreigners) with ours, i.e., immigrants (example item: "If jobs become scarce, immigrants should be sent back to their home countries"). This prejudice scale was highly reliable (α = .90 in the first wave, α = .92 in the second and the third wave).

Subtle prejudice. We measured subtle prejudice with an eight-item scale adapted from Pettigrew and Meertens (1995) and previously employed in its Italian version (Voci & Hewstone, 2003; sample item: "Immigrants living here teach their children values and skills different from those required to be a good Italian citizen"). The scale showed good reliability (α = .80 in the first wave, .83 in the second wave, .85 in the third wave).

Results

Preliminary analyses

Means and standard deviations for all variables in each wave, as well as their Intraclass Correlation Coefficients (ICCs), are reported in Table 4.1.

The ICC was 0.74 and 0.68 respectively for positive and negative contact; similarly, the ICC was 0.73 for intergroup anxiety and subtle prejudice, 0.76 for both outgroup attitudes and empathy, 0.77 for deprovincialization, and 0.84 for prejudice, suggesting that in this 8-week period, these variables remain rather stable, but change to some extent.

We then conducted a one sample t-test to test if the mean scores of the measures were significantly different from the midpoint of their response scales. Considering time-changing variables, frequency of positive contact experiences was around the midpoint of the scale across the first two waves and slightly higher in the third one, while the frequency of negative contact was lower than the midpoint of the scale across all the waves. Participants' levels of empathy, deprovincialization, and attitudes toward immigrants were significantly higher than the mean score of the scale, and the level of anxiety was not significantly different from the midpoint of the scale. Finally, levels of prejudice toward immigrants and subtle prejudice were significantly lower than the midpoint of the scale.

Regarding dispositional, time-invariant variables, participants' levels of SDO and entitlement were lower than the midpoint of the scale while levels of quiet ego, NFC and agreeableness were significantly higher.

Table 4.1. *Means, Standard Deviations and Intraclass Correlation Coefficients (ICCs).*

		Baseline	*Wave 1*	*Wave 2*	*Wave 3*
	ICC	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*
SDO (1-7)		2.64 (1.04)***			
Quiet ego (1-5)		3.67 (0.49)***			
NFC (1-6)		3.64 (0.72)**			
Entitlement (1-7)		3.12 (1.11)***			
Agreeableness (1-7)		5.05 (0.81)***			
Positive Contact (0-4)	.74		2.03 (1.06)	2.04 (0.96)	1.92 (0.93)*
Negative Contact (0-4)	.68		1.07 (0.97)***	1.19 (0.98)***	1.26 (0.97)***
Anxiety (0-4)	.73		2.05 (0.81)	2.06 (0.84)	2.03 (0.83)
Empathy (0-4)	.76		2.13 (0.90)**	2.10 (0.84)**	2.09 (0.83)**
Deprovincialization (0-4)	.77		2.94 (0.74)***	2.89 (0.70)***	2.84 (0.71)***
Outgroup attitudes (0-4)	.76		2.53 (0.70)***	2.44 (0.69)***	2.39 (0.67)***
Prejudice (0-4)	.84		1.32 (1.04)***	1.40 (1.05)***	1.41 (1.04)***
Subtle prejudice (0-4)	.73		1.71 (0.75)***	1.70 (0.73)***	1.69 (0.75)***

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure; ICC denotes Intraclass Correlation Coefficients. Differences from midpoint: response scale ranges are reported in parentheses; * $p < .05$, ** $p < .01$, *** $p < .001$

We computed the person means of all the time-varying variables and we then calculated their correlations, including also dispositional, time-invariant variables. Results are reported in Table 4.2.

In this study, we found a positive correlation between positive and negative contact. Positive contact was also positively correlated to empathy, deprovincialization, and attitudes toward immigrants, and negatively associated with intergroup anxiety, prejudice toward immigrants, and subtle prejudice. On the contrary, negative contact was negatively related to empathy, deprovincialization, and outgroup attitudes and positively linked to intergroup anxiety and prejudice indexes.

Regarding individual dispositions, SDO and entitlement were negatively linked to positive contact, empathy, deprovincialization, and outgroup attitudes, and had a positive correlation with negative contact, intergroup anxiety, prejudice, and subtle prejudice. Quiet ego was negatively associated to negative contact, anxiety, prejudice, and subtle prejudice, but positively associated with positive contact, empathy, deprovincialization, and outgroup attitudes. Need for closure was negatively related to positive contact, empathy, deprovincialization, and outgroup attitudes and positively associated with intergroup anxiety and prejudice measures. Finally, agreeableness was negatively linked to negative contact, anxiety, prejudice, and subtle prejudice and positively related to empathy and outgroup attitudes.

Table 4.2. *Correlations between variables (between-person mean).*

	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*
1. Positive contact (0-4)												
2. Negative contact (0-4)	.32***											
3. Anxiety (0-4)	-.32***	.16***										
4. Empathy (0-4)	.32***	-.29***	-.36***									
5. Deprovincialization (0-4)	.40***	-.27***	-.50***	.64***								
6. Outgroup attitudes (0-4)	.46***	-.34***	-.60***	.67***	.73***							
7. Prejudice (0-4)	-.34***	.32***	.53***	-.58***	-.64***	-.73***						
8. Subtle prejudice (0-4)	-.26***	.36***	.50***	-.50***	-.54***	-.65***	.73***					
9. SDO (1-7)	-.28***	.27***	.27***	-.54***	-.55***	-.53***	.52***	.47***				
10. Quiet Ego (1-5)	.22***	-.11***	-.23***	.37***	.49***	.39***	-.30***	-.24***	-.36***			
11. NFC (1-6)	-.17***	.02	.25***	-.13***	-.27***	-.24***	.26***	.23***	.10***	-.12***		
12. Entitlement (1-7)	-.15***	.08**	.22***	-.22***	-.28***	-.31***	.34***	.32***	.29***	-.11***	.19***	
13. Agreeableness (1-7)	.05	-.14***	-.08***	.19***	.23***	.16***	-.08**	-.11***	-.22***	.37***	-.08**	.00

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure; **$p < .01$, ***$p < .001$.

Mediation Analyses

To accommodate the multi-level nature of the data, we used multilevel structural equation modeling (MSEM, Preacher, Zyphur, & Zhang, 2010) performed with Mplus 7 (Muthén & Muthén, 2012). The MSEM model decomposes the effect of a variable into its latent within-level effect and a latent between-level effect. By decomposing the effects into components at the between and within levels, MSEM avoids potential problems of conflated within and between level relationships in traditional multi-level approach (e.g., hierarchical linear modeling), allowing us to estimate indirect relationships more precisely (Preacher et al., 2010; Zhang, Zyphur, & Preacher, 2009).

Results are presented in Table 4.3 and in Figure 4.1. At the between-person level, results showed that individuals who, on average, experienced more positive contact across all observations reported also less anxiety, and more empathy and deprovincialization on average across observation periods. On the contrary, individuals who, on average, experienced more negative contact across all observations experienced also more anxiety, and less empathy and deprovincialization on average across observation periods.

At the within-person level, findings showed that when an individual experienced more positive contact on a given time than he or she usually does, that individual also reported more empathy and deprovincialization. A similar but opposite pattern emerged for negative contact. Indeed, within-person variations in negative contact were associated with within-person variations in empathy and deprovincialization.

Within-person variations in anxiety, empathy and deprovincialization were also related to within-individual variations of attitudes toward immigrants, but not to within-person variations of subtle prejudice. Moreover, only within-individual variations in anxiety and deprovincialization explained within-person variations in prejudice towards immigrants.

Figure 4.1. Summary of multilevel structural equation modeling. Coefficients are unstandardized multilevel regression weights. Deprov denotes deprovincialization. *$p<.05$, **$p < .01$, ***$p < .001$.

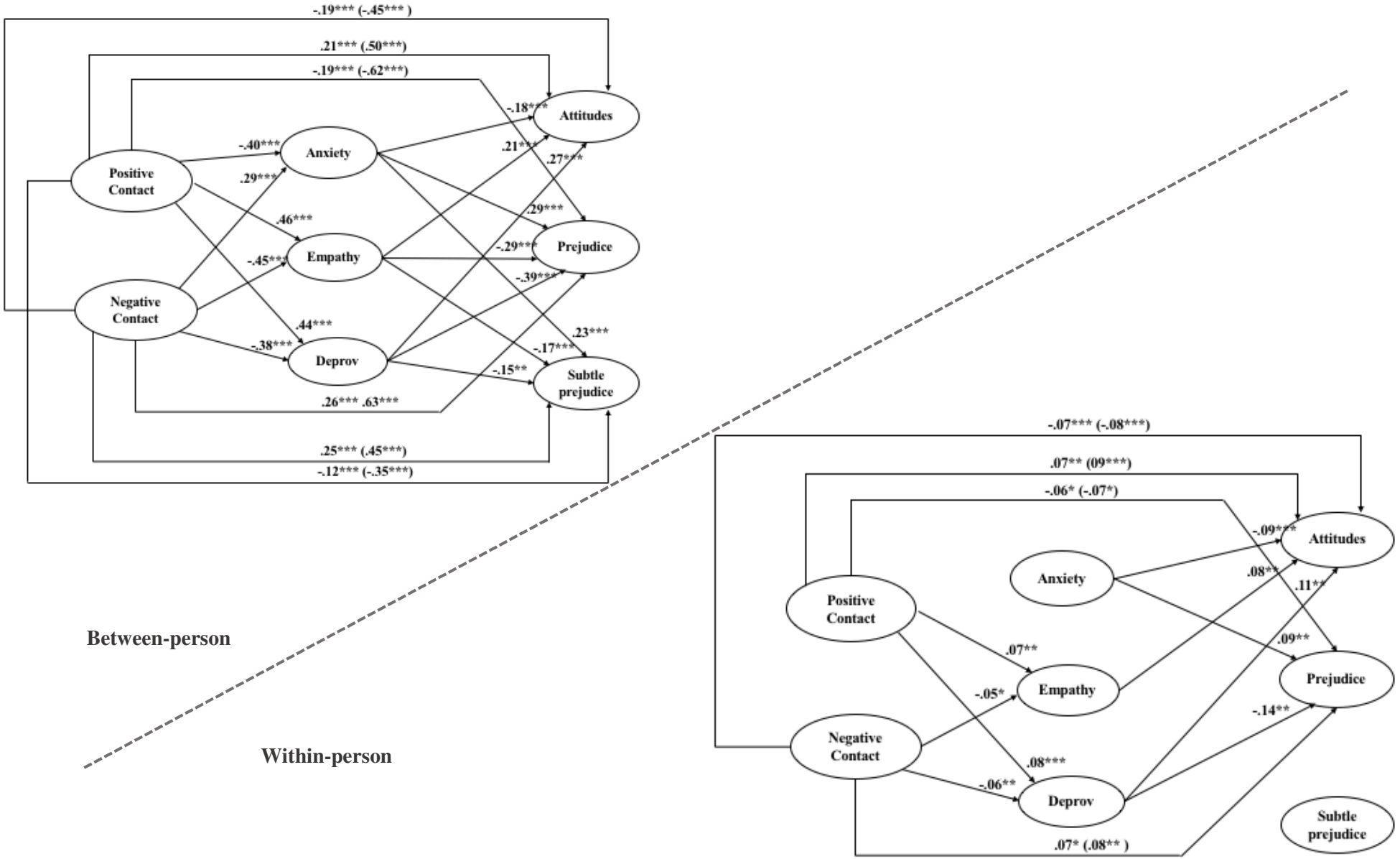

Table 4.3. *Associations between Positive and Negative Intergroup Contact, Attitudes and Prejudice towards Immigrants and Subtle Prejudice via Anxiety, Empathy, and Deprovincialization.*

	Anxiety			*Empathy*			*Deprovincialization*			*Outgroup attitudes*			*Prejudice*			*Subtle prejudice*	
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
Within-Person																		
Positive Contact	-0.01	-0.07, 0.05	.677	0.07	0.02, 0.12	.006	0.08	0.04, 0.11	<.001	0.07	0.03 ,0.12	.003	-0.06	-0.11, -0.00	.043	-0.05	-0.95, 0.00	.062
Negative Contact	0.04	-0.02, 0.09	.208	-0.05	-0.10, -0.01	.027	-0.06	-0.10, -0.01	.009	-0.07	-0.11, -0.03	<.001	0.07	0.02, 0.12	.010	0.04	-0.01, 0.09	.085
Anxiety										-0.09	-0.14, -0.04	<.001	0.09	0.02, 0.16	0.01	0.05	-0.01,0.11	.131
Empathy										0.08	0.03, 0.13	.002	0.03	-0.05, 0.10	.487	0.02	-0.05, 0.09	.621
Deprovincialization										0.11	0.03, 0.18	.005	-.13	-0.22, -0.05	0.002	-0.04	-0.12, 0.04	.318
Between-Person																		
Positive Contact	-0.40	-0.48, -0.33	<.001	0.46	0.38, 0.53	<.001	0.44	0.38, 0.50	<.001	0.21	0.16, 0.26	<.001	-0.19	-0.29, -0.08	<.001	-0.12	-0.20, -0.04	<.001
Negative Contact	0.29	0.29, 0.38	<.001	-0.45	-0.53, -0.37	<.001	-0.38	-0.45, -0.31	<.001	-0.19	-0.25, -0.14	<.001	0.26	0.16, 0.35	<.001	0.25	0.17, 0.33	<.001
Anxiety										-0.18	-0.24, -0.13	<.001	0.29	0.18, 0.40	<.001	0.23	0.15,0.32	<.001
Empathy										0.21	0.14, 0.28	<.001	-0.31	-0.44, -0.18	<.001	-0.16	-0.26, -0.07	<.001
Deprovincialization										0.27	0.18, 0.36	<.001	-0.39	-0.56, -0.22	<.001	-0.15	-0.26, -0.04	<.001

We computed indirect effects at both between and within level of analysis. Results are summarized in Table 4.4 and showed that, at between-level, significant indirect effects of both positive and negative contact on attitudes, prejudice toward immigrants and subtle prejudice, via anxiety, empathy and deprovincialization were present. At the within-level we found significant indirect effects of positive contact on attitudes via empathy and deprovincialization and an indirect effect of negative contact via deprovincialization. A significant indirect effect of positive contact on prejudice toward immigrants via deprovincialization also emerged. No significant path from intergroup contact to subtle prejudice were found.

Table 4.4. *Indirect Effects and 95% Confidence Intervals of the Association between Positive and Negative Intergroup Contact and Subtle Prejudice, Attitudes and Prejudice towards Immigrants via Anxiety, Empathy, and Deprovincialization.*

	Predictor	*Mediators*	*Effects on Outgroup attitudes*	*Effects on Prejudice*	*Effects on Subtle prejudice*
Between-Person					
	Positive Contact	Anxiety	IE = 0.07 [0.048, 0.100]	IE = -0.12 [-0.168, -0.069]	IE = -0.09 [-0.132, -0.056]
		Empathy	IE = 0.08 [0.062, 0.132]	IE = -.14 [-0.207, 0.077]	IE = -0.08 [-0.119, -0.032]
		Deprovincialization	IE = 0.12 [0.077, 0.158]	IE = -0.17 [-0.250, -0.093]	IE =- 0.07 [-0.115, -0.015]
	Negative Contact	Anxiety	IE = -0.05 [-0.076, -0.029]	IE = 0.08 [0.043, 0.126]	IE = 0.07 [0.035, 0.099]
		Empathy	IE = -0.10 [-0.131, -0.059]	IE = 0.14 [0.075, 0.205]	IE = 0.07 [0.032, 0.116]
		Deprovincialization	IE = -0.10 [-0.139, -0.066]	IE = 0.15 [0.008, 0.220]	IE = 0.06 [0.014, 0.101]
Within-Person					
	Positive Contact	Empathy	IE = 0.08 [0.062, 0.132]		
		Deprovincialization	IE = 0.12 [0.077, 0.158]	IE = -.01 [-0.019, -0.001]	
	Negative Contact	Deprovincialization	IE = -0.10 [-0.139, -0.066]		

Note. IE= Indirect effect of predictor on criterion variable through the mediators. Only the significant paths are reported. Confidence intervals (CIs) excluding zero indicate a significant indirect effect ($p < .05$).

Interaction between Positive and Negative Contact

We first separated within-individuals from between-individuals components of positive and negative contact computing the person-means of positive and negative contact and the deviations of each individual's score of positive and negative contact from the respective person mean (e.g., Curran & Bauer, 2011; Hoffman & Stawski, 2009). We then used the R (R Core Team, 2018) package *lme4* (Bates, Maechler, Bolker, & Walker, 2015) to conduct random-intercept linear mixed models in which we included the between- and within-person components of positive and negative contact as predictors as well as their products, and anxiety, empathy, deprovincialization, outgroup attitudes, prejudice towards immigrants and subtle prejudice as the outcomes. The issue of computing *p*-values in linear mixed models is controversial because it is unclear whether the number of Level-1 observations or the number of Level-2 clusters, or both, should constitute the denominator degrees of freedom, especially in the case of unbalanced data (Baayen, Davidson, & Bates, 2008). However, research has shown that when models are fitted using Restricted Maximum Likelihood (REML) and *p*-values are derived using the Kenward-Roger or Satterthwaite approximations, Type 1 error rates are closest to .05 (Luke, 2017). Thus, when dealing with mixed models, we computed Kenward-Roger approximated *p*-values, together with the 95% CI on unstandardized coefficients, as standardizing is not recommended for multilevel models (Hox, 2010). To interpret the results, we generally rely on the size of the effects more than on their mere statistical significance. Results are reported in Table 4.5 and 4.6.

Table 4.5. *Associations between Positive and Negative Intergroup Contact, Anxiety, Empathy and Deprovincialization, including the interaction between Positive and Negative contact.*

	Anxiety			*Empathy*			*Deprovincialization*		
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
Intercept	2.39	2.19 – 2.59	<.001	1.84	1.65 – 2.03	<.001	2.59	2.44 – 2.75	<.001
B-P Positive Contact	-0.33	-0.43 – -0.23	<.001	0.36	0.26 – 0.45	<.001	0.34	0.26 – 0.41	<.001
W-P Positive Contact	0.03	-0.06 – 0.11	.539	0.11	0.03 – 0.19	.007	0.05	-0.01 – 0.12	.114
B-P Negative Contact	0.30	0.14 – 0.45	<.001	-0.46	-0.61 – -0.32	<.001	-0.42	-0.54 – -0.31	<.001
W-P Negative Contact	0.02	-0.08 – 0.13	.660	-0.04	-0.14 – 0.06	.488	-0.01	-0.10 – 0.07	.736
B-P Positive Contact*B-P Negative Contact	-0.02	-0.09 – 0.04	.471	0.04	-0.03 – 0.10	.235	0.05	-0.00 – 0.10	.074
W-P Positive Contact*W-P Negative Contact	-0.01	-0.15 – 0.13	.915	-0.09	-0.22 – 0.04	.171	0.07	-0.03 – 0.18	.184
B-P Positive Contact*W-P Negative Contact	0.01	-0.04 – 0.06	.801	-0.01	-0.06 – 0.04	.678	-0.02	-0.06 – 0.02	.268
W-P Positive Contact*B-P Negative Contact	-0.03	-0.09 – 0.03	.330	-0.04	-0.09 – 0.01	.151	0.02	-0.03 – 0.06	.480
B-P variance		0.20			0.17			0.12	
W-P variance		0.43			0.39			0.25	
ICC		0.69			0.69			0.68	
Observations		1,688			1,687			1,690	
Individuals		565			565			565	

Note. W-P = Within-Persons; B-P = Between-Persons. P-values computed with Kenward-Roger approximation.

Table 4.6. *Associations between Positive and Negative Intergroup Contact, Attitudes and Prejudice toward Immigrants and Subtle Prejudice, including the interaction between Positive and Negative contact.*

	Outgroup attitudes			*Prejudice*			*Subtle prejudice*		
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
Intercept	2.12	1.99 – 2.25	<.001	1.68	1.45 – 1.91	<.001	1.80	1.64 – 1.96	<.001
B-P Positive Contact	0.39	0.32 – 0.45	<.001	-0.46	-0.57 – -0.34	<.001	-0.27	-0.35 – -0.19	<.001
W-P Positive Contact	0.05	-0.02 – 0.11	.149	-0.00	-0.08 – 0.08	.981	-0.07	-0.14 – 0.01	.095
B-P Negative Contact	-0.48	-0.58 – -0.39	<.001	0.69	0.52 – 0.87	<.001	0.45	0.32 – 0.57	<.001
W-P Negative Contact	-0.07	-0.15 – 0.01	.103	0.02	-0.08 – 0.12	.662	0.01	-0.08 – 0.11	.773
B-P Positive Contact*B-P Negative Contact	0.05	0.01 – 0.09	.028	-0.07	-0.15 – 0.00	.060	-0.03	-0.09 – 0.02	.259
W-P Positive Contact*W-P Negative Contact	-0.01	-0.11 – 0.09	.859	-0.08	-0.22 – 0.05	.236	0.05	-0.08 – 0.17	.464
B-P Positive Contact*W-P Negative Contact	-0.01	-0.05 – 0.03	.644	0.03	-0.02 – 0.07	.249	0.02	-0.03 – 0.06	.463
W-P Positive Contact*B-P Negative Contact	0.03	-0.01 – 0.08	.130	-0.06	-0.11 – -0.00	.045	0.02	-0.04 – 0.07	.559
B-P variance		0.11			0.17			0.15	
W-P variance		0.17			0.59			0.27	
ICC		0.60			0.77			0.64	
Observations		1,688			1,691			1,691	
Individuals		565			565			565	

Note. W-P = Within-Persons; B-P = Between-Persons. P-values computed with Kenward-Roger approximation.

The moderation analyses revealed that the product of between-person positive contact and between-person negative contact was positively associated with attitudes toward immigrants. We decomposed this interaction relying on the package reghelper (Hughes, 2018) in R (R Core team, 2018). Results are reported in Table 7 and showed that more negative contact across all observations was associated with more negative outgroup attitudes when positive contact across all observations was low. This finding is in line with the *buffering* hypothesis (see Figure 4.2). Considering between-person positive contact as the predictor and between-person negative contact as the moderator, we found that participants who had more positive contact on average, compared to other participants, had more positive outgroup attitudes if they experienced more negative contact than other participants. This is consistent with the *facilitation* hypothesis (see Figure 4.3).

The product of within-person positive contact and between-person negative contact was negatively associated with prejudice toward immigrants. By decomposing the interaction, we found support for the buffering hypothesis: between-level variations of negative contact were associated with more prejudice when within-level variations in positive contact were low (see Figure 4.2). Considering within-person positive contact as the predictor and between-person negative contact as the moderator, we found that within-person positive contact was related to lower levels of prejudice toward immigrants in people who experienced on average more negative (see Figure 4.3).

Table 4.7. *Moderation Analysis: Results of the Interaction of Positive and Negative Contact.*

Predictor	*Moderator*	*Outcome variable*	*Interaction effect*	*High levels of moderator*	*Low levels of moderator*
B-P Negative Contact	B-P Positive Contact	Outgroup Attitudes	0.05 (0.02)*	-0.34 (0.03)***	-0.43 (0.03)***
B-P Negative Contact	W-P Positive Contact	Prejudice	-0.06 (0.03)*	0.67 (0.09)***	0.71 (0.09)***
B-P Positive Contact	B-P Negative Contact	Outgroup Attitudes	0.05 (0.02)*	0.49 (0.03)***	0.40 (0.03)***
W-P Positive Contact	B-P Negative Contact	Prejudice	-0.06 (0.03)*	-0.11 (0.03)***	-0.02 (0.04)

Note. W-P = Within-Persons; B-P = Between-Persons. Interaction terms are unstandardized regression coefficients. Numbers in parentheses are standard errors. High moderator = 1 standard deviation (SD) above the mean; Low moderator = 1 standard deviation (SD) below the mean. *$p < .05$, ***$p < .001$.

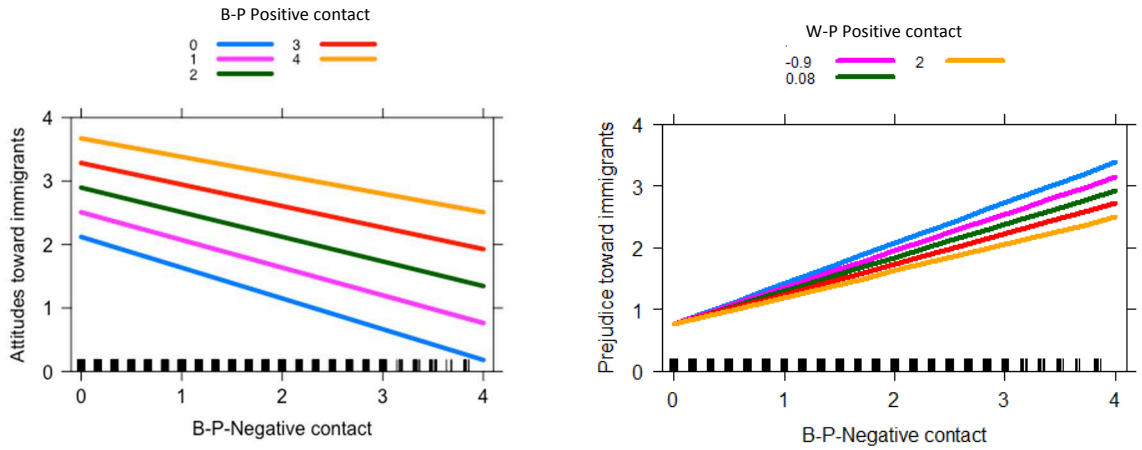

Figure 4.2. *Buffering Role of Positive Contact in the Association between Negative Contact and Attitudes and Prejudice towards Immigrant people. W-P = Within-Persons; B-P = Between-Persons.*

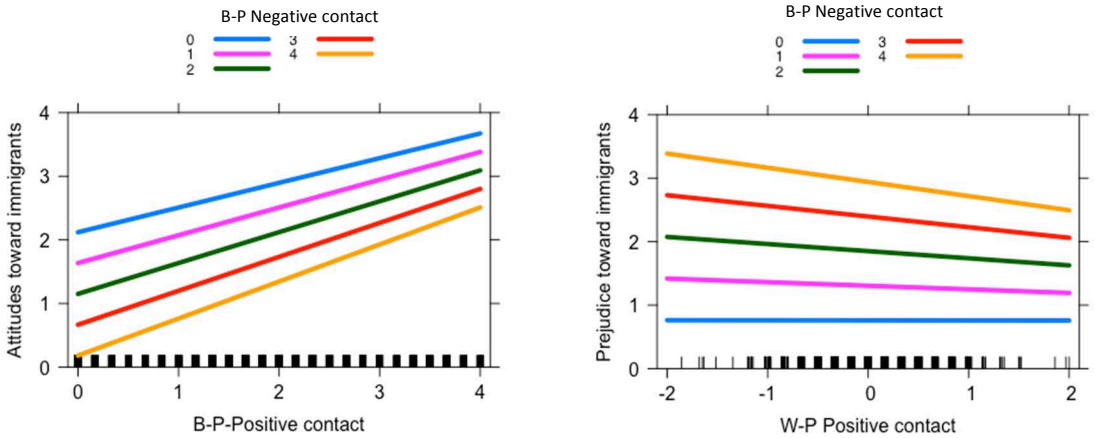

Figure 4.3. *Facilitating Role of Negative contact in the Association between Positive Contact and Attitudes and Prejudice towards Immigrant people. W-P = Within-Persons; B-P = Between-Persons.*

Mediated moderation

As we did not find any significant interactions between positive and negative contact in the relation between contact and anxiety, empathy and deprovincialization, we did not run a mediated moderation analysis.

Mediation analyses with individual dispositions

To examine the effects of individual dispositions on outgroup evaluation variables, we tested a path model in which SDO, quiet ego, psychological entitlement, NFC and agreeableness were the predictors, positive and negative contact were entered as mediators at step 1, anxiety, empathy and deprovincialization were entered as mediators at step 2, and outgroup attitudes, prejudice and subtle prejudice were the outcomes. As our data are characterized by a hierarchical structure, we performed again a multilevel structural equation model using Mplus 7 (Muthén & Muthén, 2012). Specifically, in this model, individual dispositions were time-invariant, level-2 variables, while all the mediators (i.e., positive and negative contact, anxiety, empathy, and deprovincialization) and dependent variables (i.e., outgroup attitudes, prejudice, and subtle prejudice) were time-varying, level-1 variables.

Results are reported in Tables 4.8 and 4.9 and showed that SDO was negatively related to positive contact, empathy and deprovincialization and it was positively associated with negative contact. Quiet ego had a positive link with positive contact, empathy and deprovincialization, while NFC was associated with more anxiety and less positive contact and deprovincialization. Psychological entitlement had a negative relation with anxiety and deprovincialization. Agreeableness was negatively related to negative contact.

Moreover, positive contact was related to less anxiety and to more empathy and deprovincialization while negative contact had a negative association with empathy and deprovincialization and it was linked to more anxiety. The analysis of indirect effects showed that SDO was related to less positive outgroup attitudes and to more prejudice first through positive contact and then via anxiety, empathy, and deprovincialization (see Table 4.10). The indirect effect of SDO on outgroup attitudes and prejudice toward immigrants via negative contact and then through anxiety, empathy and

deprovincialization was also significant. SDO was also related to more subtle prejudice first through positive contact and then via anxiety and empathy; it has also a positive relation with subtle prejudice via negative contact and then via anxiety and empathy. Quiet ego was associated with better outgroup attitudes and with less prejudice first via positive contact and then via anxiety, empathy and deprovincialization. Moreover, quiet ego was negatively associated with subtle prejudice through positive contact and then through anxiety. Finally, NFC was negatively related to outgroup attitudes and it was positively related to prejudice first through positive contact and then via anxiety, empathy and deprovincialization.

Table 4.8. *Associations between Individual dispositions Positive and Negative Intergroup Contact, Anxiety, Empathy, and Deprovincialization.*

	Positive Contact			*Negative Contact*			*Anxiety*			*Empathy*			*Deprovincialization*		
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
SDO	-0.19	-0.27, -0.11	<.001	0.21	0.14 – -0.29	<.001	0.01	-0.06 – 0.09	.769	-0.22	-0.28 – -0.16	<.001	-0.14	-0.20 – -0.09	<.001
Quiet ego	0.26	0.08, 0.43	.003	0.02	0.14 - .19	.781	-0.14	-0.28 – 0.01	.058	0.24	0.11 – 0.36	<.001	0.35	0.25 – 0.45	<.001
NFC	-0.16	-0.27, -0.05	.003	-0.01	-0.11 – 0.09	.912	0.16	0.07 – 0.24	<.001	-0.01	-0.09 – 0.07	.877	-0.12	-0.08 - -0.01	<.001
Entitlement	-0.04	-0.11, 0.03	.261	-0.04	-0.06 – 0.08	.808	-0.01	0.01 – 0.13	.021	-0.04	-0.09 – 0.02 -	.181	-0.05	-0.18 - -0.06	.024
Agreeableness	-0.07	-0.17, 0.03	.175	-0.10	-0.06 – 0.10	.038	0.02	-0.06 – 0.10	.610	0.02	-0.06 – 0.09	.666	0.02	-0.04 – 0.07	.609
Positive Contact							-0.35	-0.43 - -0.24	<.001	0.27	0.18 – 0.36	<.001	0.27	0.20 – 0.33	<.001
Negative Contact							0.26	0.15 – 0.36	<.001	-0.28	-0.37 - -0.19	<.001	-0.24	-0.31 - -0.17	<.001

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure.

Table 4.9. *Associations between Individual disposition, Attitudes and Prejudice toward Immigrants, and Subtle Prejudice.*

	Outgroup Attitudes			*Prejudice*			*Subtle prejudice*		
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
SDO	-0.01	0.03 – -0.14	.566	0.12	0.04 – 0.19	.005	0.09	0.03 – 0.14	.001
Quiet ego	0.04	-0.05 – 0.03	.389	0.05	-0.10 – 0.20	.530	0.05	-0.10 – 0.16	.349
NFC	-0.01	--0.05 – 0.04	.792	0.09	0.02 – 0.17	.020	0.05	-0.01 – 0.11	.099
Entitlement	-0.03	0.06 – -0.01	.021	0.08	0.03 – 0.14	.002	0.07	0.03 – 0.11	.001
Agreeableness	-0.02	-0.07 – 0.02	.270	0.11	0.04 – 0.19	.003	0.03	-0.03 – 0.09	.352
Positive Contact	0.20	0.15 – 0.25	<.001	-0.13	-0.24 – -0.03	.015	-0.09	-0.17 – -0.00	.045
Negative Contact	-0.20	-0.25 – -0.14	<.001	0.21	0.11 – 0.31	<.001	0.21	0.13 – 0.28	<.001
Anxiety	-0.19	-0.25 – -0.13	<.001	0.29	0.17 – 0.40	<.001	0.22	0.14 – 0.31	<.001
Empathy	0.18	0.12 – 0.25	<.001	-0.25	-0.37 – -0.13	<.001	-0.12	-0.21 – -0.03	.010
Deprovincialization	0.25	0.15 – 0.35	<.001	-0.36	-0.55 – -0.17	<.001	-0.12	-0.26 – 0.01	.064

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure.

Table 4.10. *Indirect Effects and 95% Confidence Intervals of the Effects of Individual dispositions on Attitudes and Prejudice towards Immigrants and Subtle Prejudice via Positive and Negative Intergroup Contact, Anxiety, Empathy, and Deprovincialization.*

Predictor	*Mediator I*	*Mediator II*	*Effects on Outgroup attitudes*	*Effects on Prejudice*	*Effects on Subtle prejudice*
SDO					
	Positive Contact	Anxiety	IE = -0.01 [-0.019, -0.005]	IE = 0.02 [0.007, 0.029]	IE = 0.01[0.005, 0.023]
		Empathy	IE= -0.01 [-0.015, -0.003]	IE= 0.01 [0.004, 0.022]	IE =0.01 [0.001, 0.012]
		Deprovincialization	IE= -0.01 [-0.020, -0.005]	IE= 0.02 [0.005, 0.031]	
	Negative Contact	Anxiety	IE= -0.01 [-0.017, -0.004]	IE= 0.02 [0.005, 0.026]	IE = 0.01 [0.004, 0.021]
		Empathy	IE= -0.01 [-0.018, -0.004]	IE= 0.02 [0.004, 0.026]	IE = 0.01 [0.001, 0.014]
		Deprovincialization	IE= -0.01 [-0.020, -0.005]	IE= 0.02 [0.005, 0.031]	
Quiet Ego					
	Positive Contact	Anxiety	IE = 0.02 [0.004, 0.029]	IE = -0.02 [-0.04, -0.004]	IE = -0.02 [-0.034, -0.004]
		Empathy	IE = 0.01 [0.002, 0.023]	IE = -0.02 [-0.032, -0.002]	
		Deprovincialization	IE = 0.02 [0.003, 0.031]	IE = -0.02 [-0.047, -0.002]	
NFC					
	Positive Contact	Anxiety	IE = -0.01[-0.018, -0.002]	IE = 0.02 [0.003, 0.028]	IE = 0.01 [0.003, 0.021]
		Empathy	IE= -0.01 [-0.015, -0.001]	IE= 0.01 [0.001, 0.021]	
		Deprovincialization	IE = -0.01 [-0.020, -0.002]	IE = 0.02 [0.002, 0.029]	

Notes. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure. IE= Indirect effect of predictor on criterion variable through the mediators. Only the significant paths are reported. Confidence intervals (CIs) excluding zero indicate a significant indirect effect ($p < .05$).

Interaction between positive and negative contact in the model with individual dispositions

We repeated the analysis reported in Table 4.5 and 4.6, including SDO, quiet ego, entitlement, NFC, and agreeableness to test if the association between the interaction of positive and negative contact, on the one hand, and attitudes and prejudice, on the other, held also controlling for these variables.

Results are reported in Tables 4.11 and 4.12 and showed that, adding individual dispositions to the model, the interaction between positive and negative contact was still associated with outgroup attitudes but not with prejudice toward immigrants.

Controlling for demographic variables

We rerun the same model as in Table 4.11 and 4.12 also adding age, gender and level of education as control variables. Results showed that, including demographic variables in the model, results did not change. In addition, age was positively associated with prejudice toward immigrants and subtle prejudice and negatively related to deprovincialization. As regard to gender, women exhibited more anxiety and empathy than men. Finally, education was negatively associated with both prejudice measures and positively related to deprovincialization.

Table 4.11. *Associations between Positive and Negative Intergroup Contact, Anxiety, Empathy and Deprovincialization, including the interaction between Positive and Negative contact and controlling for Individual Dispositions.*

	Anxiety			*Empathy*			*Deprovincialization*		
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
SDO	0.03	-0.04 – 0.10	.369	-0.24	-0.30 – -0.18	<.001	-0.16	-0.20 – -0.11	<.001
Quiet ego	-0.15	-0.28 – -0.01	.029	0.24	0.12 – 0.36	<.001	0.36	0.27 – 0.45	<.001
NFC	0.16	0.08 – 0.25	<.001	-0.01	-0.09 – 0.06	.746	-0.12	-0.18 – -0.07	<.001
Entitlement	0.07	0.02 – 0.13	.010	-0.04	-0.09 – 0.01	.134	-0.05	-0.08 – -0.01	.011
Agreeableness	0.02	-0.06 – 0.10	.623	0.02	-0.05 – 0.09	.616	0.02	-0.03 – 0.07	.529
B-P Positive Contact	-0.24	-0.34 – -0.14	<.001	0.21	0.12 – 0.31	<.001	0.20	0.13 – 0.27	<.001
W-P Positive Contact	0.04	-0.05 – 0.13	.366	0.10	0.02 – 0.19	.013	0.05	-0.01 – 0.12	.125
B-P Negative Contact	0.28	0.12 – 0.44	.001	-0.27	-0.42 – -0.13	<.001	-0.27	-0.37 – -0.16	<.001
W-P Negative Contact	-0.00	-0.12 – 0.11	.991	-0.01	-0.12 – 0.10	.815	0.00	-0.08 – 0.09	.921
B-P Positive Contact*B-P Negative Contact	-0.03	-0.10 – 0.03	.306	0.02	-0.04 – 0.08	.596	0.03	-0.01 – 0.08	.172
W-P Positive Contact*W-P Negative Contact	-0.03	-0.17 – 0.11	.662	-0.05	-0.18 – 0.08	.475	0.07	-0.03 – 0.18	.184
B-P Positive Contact*W-P Negative Contact	0.01	-0.04 – 0.07	.661	-0.02	-0.07 – 0.03	.347	-0.03	-0.07 – 0.01	.149
W-P Positive Contact*B-P Negative Contact	-0.03	-0.09 – 0.03	.351	-0.03	-0.09 – 0.02	.222	0.02	-0.03 – 0.06	.460
B-P variance		0.19			0.17			0.12	
W-P variance		0.40			0.31			0.17	
ICC		0.68			0.65			0.59	
Observations		1595			1594			1597	
N		534			534			534	

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure; W-P = Within-Persons; B-P = Between-Persons. P-values computed with Kenward-Roger approximation.

Table 4.12. *Associations between Positive and Negative Intergroup Contact, Attitudes and Prejudice toward Immigrants and Subtle Prejudice, including the interaction between Positive and Negative contact and controlling for Individual Dispositions.*

	Outgroup attitudes			*Prejudice*			*Subtle prejudice*		
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
SDO	-0.11	-0.15 – -0.07	<.001	0.25	0.18 – 0.32	<.001	0.15	0.10 – 0.20	<.001
Quiet ego	0.20	0.12 – 0.28	<.001	-0.19	-0.33 – -0.05	.009	-0.06	-0.16 – 0.04	.257
NFC	-0.07	-0.12 – -0.02	.004	0.19	0.10 – 0.28	<.001	0.11	0.04 – 0.17	.001
Entitlement	-0.07	-0.10 – -0.03	<.001	0.13	0.08 – 0.19	<.001	0.09	0.05 – 0.14	<.001
Agreeableness	-0.02	-0.06 – 0.03	.426	0.10	0.02 – 0.19	.012	0.03	-0.03 – 0.08	.386
B-P Positive Contact	0.28	0.22 – 0.34	<.001	-0.27	-0.38 – -0.16	<.001	-0.16	-0.24 – -0.09	<.001
W-P Positive Contact	0.05	-0.01 – 0.12	.109	0.00	-0.08 – 0.09	.954	-0.07	-0.15 – 0.01	.076
B-P Negative Contact	-0.39	-0.49 – -0.29	<.001	0.48	0.31 – 0.65	<.001	0.31	0.18 – 0.43	<.001
W-P Negative Contact	-0.02	-0.11 – 0.07	.664	-0.01	-0.12 – 0.10	.879	-0.04	-0.14 – 0.06	.475
B-P Positive Contact*B-P Negative Contact	0.04	0.00 – 0.08	.033	-0.05	-0.12 – 0.02	.143	-0.02	-0.07 – 0.03	.517
W-P Positive Contact*W-P Negative Contact	0.00	-0.10 – 0.11	.952	-0.11	-0.24 – 0.03	.126	0.05	-0.07 – 0.17	.390
B-P Positive Contact*W-P Negative Contact	-0.03	-0.07 – 0.01	.137	0.04	-0.01 – 0.09	.130	0.03	-0.01 – 0.08	.146
W-P Positive Contact*B-P Negative Contact	0.03	-0.02 – 0.07	.256	-0.05	-0.11 – 0.00	.071	0.03	-0.02 – 0.08	.253
B-P variance		0.11			0.17			0.15	
W-P variance		0.13			0.46 i			0.22	
ICC		0.54			0.73			0.60	
Observations		1,595			1,598			1,598	
Individuals		534			534			534	

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure; W-P = Within-Persons; B-P = Between-Persons. P-values computed with Kenward-Roger approximation.

Discussion

The fourth, longitudinal study, confirmed most of our hypotheses. We found that both between-individual and within-individual variations in positive and negative intergroup contact were associated with affective variables, deprovincialization, and outgroup evaluation indexes. Supporting H1 and H2 and the previous studies, the effects of positive and negative contact on intergroup variables had opposite signs (positive for positive contact, and negative for negative contact). Both when individuals had on average more positive contact, and in the occasions when they experienced more positive contact than usual, positive contact indexes were associated negatively with prejudice, and positively with outgroup attitudes, empathy and deprovincialization. Conversely, when individuals had on average more negative contact, and in the occasions when they experience more negative contact than usual, their level of empathy and deprovincialization was lower, their attitudes worse and their levels of prejudice higher.

Moreover, the between-person effects of positive and negative contact on attitudes and prejudice measures were mediated by anxiety, empathy, and deprovincialization, providing further support for H3. At the within level, when participants experienced more contact than usual, they had also better outgroup attitudes, via empathy and deprovincialization, and less prejudice toward the outgroup only through deprovincialization. When individuals had more negative contact than usual, they had also worse outgroup attitudes and this effect was mediated by deprovincialization.

Considering the role of individual dispositions, similarly to previous studies, we found that SDO was related to more negative contact, less positive contact, and less empathy and deprovincialization. Quiet ego, on the contrary, was linked to more positive contact, empathy, and deprovincialization and to less intergroup anxiety. NFC was related to more negative contact, more anxiety, and less deprovincialization. Entitlement was negatively related to anxiety and deprovincialization, while agreeableness was associated to less negative contact.

SDO was also indirectly related to outgroup attitudes and prejudice toward immigrant people, first through positive contact and then via anxiety, empathy, and deprovincialization. The same indirect association with an opposite sign was present, originating from SDO and going through negative contact and then through anxiety,

empathy, and deprovincialization. SDO was also associated with more subtle prejudice through positive contact and then anxiety and empathy. This negative association was also explained by negative contact and then anxiety and empathy. Quiet ego was related to more positive outgroup attitudes and to decreased prejudice first via positive contact and then via anxiety, empathy, and deprovincialization. It was also associated with less subtle prejudice through positive contact and then through anxiety. Finally, NFC had a negative link with outgroup attitudes, and it was positively related to prejudice first through positive contact and then via anxiety, empathy, and deprovincialization.

Repeating the moderation analyses including, SDO, quiet ego, NFC, entitlement, and agreeableness in the model, the effect of the interaction between positive and negative contact held only for outgroup attitudes.

Study 5

Introduction

In the fifth and last Study, we examined variations in positive and negative contact experiences in everyday life employing a daily diary method. In particular, we wanted to test whether inter-individual and intra-individual variations in positive and negative contact were associated with variations in attitudes and positive and negative emotions toward immigrant people. In addition, we tested how positive and negative contact interacted with each other.

Finally, as in previous studies, we considered the role of individual dispositions (i.e., SDO, quiet ego, NFC, entitlement, and agreeableness) in these relationships, and we controlled for socio-demographic variables and socially desirable responding.

Participants

As in Study 4, participants were recruited by psychology undergraduates to complete online questionnaires in return for course credit. Each student identified 3 adult individuals who met three requirements: they were willing to participate in the study, could not be students in the course, and could not have frequent interactions with each other, to decrease possible dependence among observations. Participants first completed a baseline questionnaire with socio-demographic questions and dispositional variables (i.e., SDO, quiet ego, NFC, entitlement, agreeableness). After one week, they entered the diary part of the study, in which they completed the same questionnaire about their daily positive and negative intergroup contact experiences and their positive and negative emotions and attitudes toward the outgroup, every day for a total of 10 days.

The total number of participants participating to both the baseline and the diary phases of the study was 380. For this Study, we considered only participants that completed at least 5 days of the daily diary questionnaire, to have a number of observations per individual that allows us to draw reliable evidence on intra-individual variation.

The final sample resulted in 365 participants; 166 were men and 193 were women; all participants were Italian, and their age ranged from 18 to 66 years (M = 28.98; SD = 12.39). The highest education level achieved was secondary school for the 6.6% of the sample, high school diploma for the 54.3% of the sample, bachelor's degree for the 27.7% of the sample, and higher degrees (master, PhD) for the 10.4% of the sample. Regarding their employment, 9.9% were manual or office workers; 20.3% were retailers, employees or teachers in primary schools; 6.3% were professionals, teachers in secondary schools or academics, while 6.6% were housekeepers or unemployed. Finally, 55.1% were students (1.9% did not indicate their occupation).

Method

Measures in the baseline questionnaire

Social dominance orientation (SDO). We used the same scale as in previous studies (Aiello et al., 2005, α = .88), and we considered it a dispositional, time-invariant variable.

Quiet ego. The same measure employed in the previous studies was used (Boin & Voci, 2019). The scale showed good internal reliability (α = .80).

Psychological entitlement. Again, we measured psychological entitlement with the Italian version of the Psychological Entitlement scale (Boin & Voci, 2019). The reliability of the scale was good (α = .86).

Need for Closure (NFC). The same scale as in previous studies was employed (Mannetti et al., 2002; α = .81).

Agreeableness. We used the same measure as in Study 3 (BFI, Fossati et al., 2011). The scale was reliable (α = .71).

Social Desirability. Again, we measured social desirability with the 16-item Italian version by Bobbio and Manganelli (2011) distinguishing between self-deceptive enhancement and impression management. The reliability of the self-deceptive enhancement subscale was good (α = .87), while that of impression management was acceptable (α = .65).

Measures in the daily diary questionnaire

Positive and negative contact. We assessed positive contact with one item: "Thinking about the last 24 hours, how many positive interactions with immigrant people you had?". The same item was used for negative contact: "Thinking about the last 24 hours, how many negative interactions with immigrant people you had?". Participants responded to both items on a five-point scale (*0 = none*; *1 = 1-2*; *2 = 3-5*; *3 = 5-7*; *4 = more than 6).*

Outgroup evaluation and emotions indexes. After the contact items, we asked participants to think about immigrant people in general, besides those with whom they interacted with, and to answer to 3 items considering their perception in the last 24 hours. The first item measured participant's evaluation of immigrant people in Italy on a scale from 1 = extremely negative to 7 = extremely positive. Two items assessed how much they felt positive and negative emotions thinking about immigrant people in Italy during that day (from 1 = not at all to 7 = very much).

Results

Preliminary analyses

First, we computed the person-means of all the time-varying variables and then we calculated standard deviations, ICCs and correlations, including also dispositional, time-invariant variables. Results are reported in Table 5.1

The ICC was 0.33 and 0.31 respectively for positive and negative contact suggesting that these variables changed during the 10 days. Considering the evaluation indexes, the ICC was 0.81 for outgroup evaluation, 0.80 for positive emotions, and 0.73 for negative emotions, suggesting that in the 10 days of diary, these variables remained rather stable, but changed to some extent.

A one-sample t-test was conducted to test if the mean scores of the measures were significantly different from the midpoint of their response scales. Considering time-changing variables, the frequency of positive and negative contact experiences was significantly lower than the midpoint of the scale, as well as negative emotions felt toward the outgroup. Participants' levels of positive emotions and outgroup evaluation were slightly higher than the mean score of the scale.

As regard individual time-invariant variables, participants' mean scores of SDO, entitlement, and self-deception were lower than the midpoint of the scale, while levels of quiet ego, NFC, agreeableness, and impression management were quite higher.

Table 5.1. *Means, Standard Deviations, Intraclass Correlation Coefficients (ICCs) and Pearson's Correlations between variables (between person means).*

	ICC	*M(SD)*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*
1. Positive Contact (0-4)	.33	0.33(0.39)***											
2. Negative Contact (0-4)	.31	0.07(0.19)***	.26***										
3. Outgroup evaluation (1-7)	.81	4.61(1.18)***	.26***	-.19***									
4. Positive emotions (1-10)	.80	4.28(1.27)***	.25***	-.18***	.91***								
5. Negative emotions (1-10)	.73	2.99(1.21)***	-.21***	.20***	-.70***	-.63***							
6. SDO (1-7)		2.41(0.93)***	-.10***	.18***	-.42***	-.43***	.33***						
7. Quiet ego (1-5)		3.71(0.54)***	.14***	-.04*	.23***	.27***	-.20***	-.31***					
8. NFC (1-6)		3.65(0.75)**	-.20***	-.07***	-.23***	-.21***	.22***	.02	-.12***				
9. Entitlement (1-7)		2.86(1.13)***	-.14***	.04*	-.22***	-.23***	.21***	.31***	-.08***	.15***			
10. Agreeableness (1-5)		3.70(0.58)***	.13***	-.03	.14***	.17***	-.14***	-.28***	.50***	-.01	-.23***		
12. Self-deception (1-6)		3.37(0.77)**	-.05**	-.02	-.15***	-.11***	.08***	.08***	.25***	.26***	.27***	.04*	
11. Impression management (1-6)		3.69(0.90)***	.00	-.04*	.09***	.11***	-.14***	-.17***	.27***	-.01	-.11***	.37***	.16***

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure; ICC denotes Intraclass Correlation Coefficients. Differences from midpoint: response scale ranges are reported in parentheses *p<.05, **p < .01, ***p <.001.

Considering correlations between the variables, we found that positive and negative contact were positively correlated. Positive contact was also positively related to outgroup evaluation and positive emotions, and negatively linked to negative emotions. Conversely, negative contact had a positive relation with negative emotions, and it was negatively associated to positive emotions and outgroup evaluation.

Regarding individual dispositions, SDO and entitlement were negatively associated with positive contact and positive emotions and positively related to negative contact, negative emotions, and outgroup evaluations. Quiet ego had a positive link with positive contact, emotions, and outgroup evaluations and a negative relation with negative contact.

Inter-individual and intra-individual effects of positive and negative contact

Looking at the distribution of the responses concerning the measures of positive and negative contact, we noticed that the frequency of days in which contact experiences occurred was very low, generating substantial asymmetry in contact variables. Considering the total number of observations of positive and negative contact, the percentage of responses in which participants reported to have had zero daily positive contact was 78.8%, while the percentage of responses with 1-2 daily positive interactions was 23.6%, for 3-5 daily positive interactions it was 2.5%, 5-7 and for more than 6 daily positive interactions the proportion was 0.6%. As regard to negative contact, the percentage of responses in which participants reported to have had zero daily negative contact experiences was 94.4%, while the percentage of responses with 1-2 daily negative interactions was 5%, for 3-5 daily negative interactions it was 0.49%, 5-7 was 0.10% and for more than 6 daily negative interactions the proportion was 0.03% (see also Figure 5.1). We thus decided to compute two new dichotomous contact variables, respectively for positive and negative contact, taking value one in days in which participants experienced contact with at least one immigrant person, and zero in days in which no contact occurred. In this way, the contact variables were not indicators of frequency of contact, but only of presence or absence of contact experiences in that day, for each person.

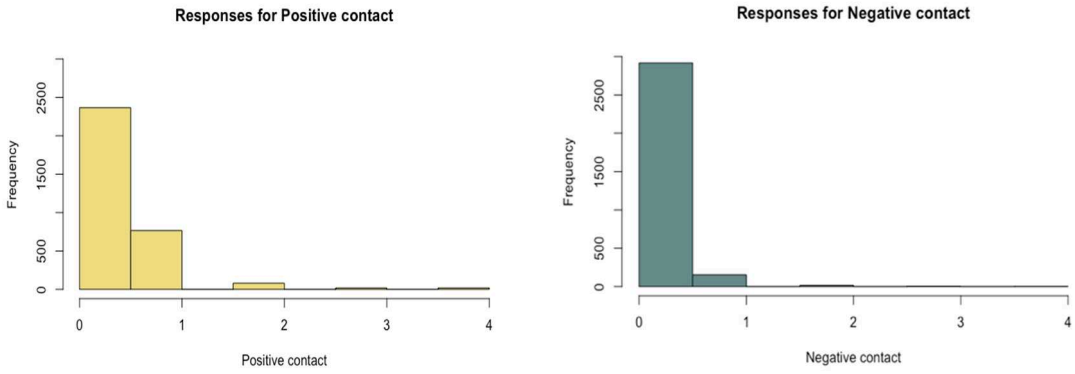

Figure 5.1 *Distribution of Frequency of Responses for Positive and Negative Contact.*

We then separated within-individual from between-individual effects of positive and negative contact computing the person means of positive and negative contact and the deviations of each individual's score of positive and negative contact from the respective person-mean, as we did in Study 4. Given that contact variables are dichotomous, in this study between-individual effects of positive and negative contact reflect the effect of experiencing more contact compared to other participants on average across the 10 days, while within-individual effects refer to the effect of experiencing positive or negative contact in a given day for that person.

We then conducted random intercept linear mixed models in which the predictors were the between and within person components of positive and negative contact, as well as their products, and the outcomes were outgroup evaluation and positive and negative emotions felt toward the outgroup. Results are reported in Table 5.2. At the between-person level, when individuals experienced on average more positive contact across the 10 days, they felt less negative emotions and reported more positive outgroup evaluations. On the contrary, individuals who, on average, experienced more negative contact across all observations reported also worse outgroup evaluations, less positive emotions and more negative emotions on average across observation periods. At the within-person level, participants who had negative contact on a given day reported more negative emotions and less positive emotions toward the outgroup on that day. Within-person positive contact was unrelated to all the outcomes.

Table 5.2. *Associations between Positive and Negative Intergroup Contact, Outgroup evaluation and Positive and Negative Emotions felt toward Immigrants.*

	Outgroup evaluation			*Positive emotions*			*Negative emotions*		
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
Intercept	4.31	4.15 – 4.46	<0.001	3.96	3.79 – 4.13	<0.001	3.19	3.03 – 3.36	<0.001
B-P Positive Contact	1.67	1.25 – 2.10	<0.001	1.77	1.31 – 2.23	<0.001	-1.25	-1.70 – -0.80	<0.001
W-P Positive Contact	-0.01	-0.06 – 0.05	0.783	-0.00	-0.07 – 0.06	0.881	-0.05	-0.13 – 0.02	0.132
B-P Negative Contact	-2.58	-3.40 – -1.75	<0.001	-2.71	-3.61 – -1.82	<0.001	2.42	1.54 – 3.30	<0.001
W-P Negative Contact	-0.10	-0.21 – 0.00	0.057	-0.13	-0.25 – -0.01	0.038	0.22	0.08 – 0.36	0.001
B-P variance		0.32			0.39			0.50	
W-P variance		1.10			1.30			1.24	
ICC		0.78			0.77			0.71	
Observations		3014			3014			3014	
Individuals		365			365			365	

Note. W-P = Within-Persons; B-P = Between-Persons. P-values computed with Kenward-Roger approximation.

Interaction between positive and negative contact

We conducted the same random intercept linear mixed models reported in Table 5.2 adding the product of the between and within-person components of positive and negative contact amongst the predictors and testing their associations with outgroup evaluation and positive and negative emotions felt toward the outgroup. Results are reported in Table 5.3.

The product of between-individual variations of positive and negative contact was positively associated to positive emotions felt toward immigrant people. We decomposed this interaction relying on the package reghelper (Hughes, 2018) in R (R Core team, 2018) finding support for both the buffering and the facilitation hypotheses (see Table 5.4).

In particular, results showed that individuals who had more negative contact experiences on average across the 10 days, reported less negative emotions toward the outgroup when they had also more positive contact experiences on average across the entire period. This result provide evidence for the *buffering* hypothesis (see Figure 5.2).

We then considered positive contact as the predictor and negative contact as the moderator. Results of the decomposition showed that participants who had more positive contact experiences across all observations felt more positive emotions toward outgroup members when they had also more negative contact across all observations. This is in line with the *facilitation* hypothesis (see Figure 5.3).

Moreover, the product of within-individual variations of positive contact and between-individual variations of negative contact was positively related to outgroup evaluation. Decomposing the interaction, we found that individuals who had more negative contact experiences on average across the 10 days also had less negative outgroup evaluation when they experienced positive contact on a given day (*buffering* effect, see Figure 5.2). Considering positive contact as the predictor and negative contact as the moderator, we found that participants who experienced positive contact on a given day had more positive attitudes when they also experienced more negative contact, on average, across the entire period. These results support the *facilitation* hypothesis (see Figure 5.3).

Table 5.3. *Associations between Positive and Negative Intergroup Contact, Outgroup evaluation and Positive and Negative Emotions felt toward Immigrants, including the interaction between Positive and Negative contact.*

	Outgroup evaluation			*Positive emotions*			*Negative emotions*		
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
Intercept	4.35	4.19 – 4.52	<.001	4.03	3.86 – 4.21	<.001	3.15	2.98 – 3.33	<.001
B-P Positive Contact	1.55	1.11 – 2.00	<.001	1.57	1.09 – 2.06	<.001	-1.14	-1.62 – -0.66	<.001
W-P Positive Contact	-0.07	-0.13 – -0.00	.037	-0.02	-0.09 – 0.05	.547	-0.07	-0.15 – 0.01	.076
B-P Negative Contact	-3.59	-5.09 – -2.10	<.001	-4.42	-6.04 – -2.80	<.001	3.33	1.72 – 4.94	<.001
W-P Negative Contact	-0.08	-0.26 – 0.10	.404	-0.04	-0.24 – 0.16	.702	0.32	0.09 – 0.55	.006
B-P Positive Contact*B-P Negative Contact	1.76	-0.42 – 3.94	.114	2.98	0.62 – 5.34	.013	-1.59	-3.93 – 0.75	.182
B-P Positive Contact*W-P Negative Contact	-0.12	-0.51 – 0.26	.537	-0.21	-0.64 – 0.22	.337	-0.27	-0.76 – 0.22	.281
W-P Positive Contact*B-P Negative Contact	0.93	0.49 – 1.37	<.001	0.28	-0.21 – 0.77	.267	0.28	-0.27 – 0.84	.320
W-P Positive Contact*W-P Negative Contact	0.05	-0.24 – 0.33	.758	-0.17	-0.49 – 0.16	.311	-0.09	-0.45 – 0.27	.623
B-P variance		0.31			0.39			0.50	
W-P variance		1.10			1.28			1.24	
ICC		0.78			0.77			0.71	
Observations		3,014			3,014			3,014	
Individuals		365			365			365	

Note. W-P = Within-Persons; B-P = Between-Persons. P-values computed with Kenward-Roger approximation.

Table 5.4. *Moderation Analysis: Results of the Interaction of Positive and Negative Contact.*

Predictor	*Moderator*	*Outcome variable*	*Interaction effect*	*High levels of moderator*	*Low levels of moderator*
B-P Negative Contact	W-P Positive Contact	Outgroup evaluation	0.93 (0.23) ***	-3.26 (0.77) ***	-3.92 (0.77) ***
B-P Negative Contact	B-P Positive Contact	Positive emotions	2.98 (1.20) *	-2.80 (0.45) ***	-4.42 (0.83) ***
W-P Positive Contact	B-P Negative Contact	Outgroup evaluation	0.93 (0.23) ***	0.11 (0.04) **	-0.14 (0.04) **
B-P Positive Contact	B-P Negative Contact	Positive emotions	2.98 (1.20) *	2.15 (0.28) ***	1.33 (0.29) ***

Note. W-P = Within-Persons; B-P = Between-Persons. Interaction terms are unstandardized regression coefficients. Numbers in parentheses are standard errors. High moderator = 1 standard deviation (SD) above the mean; Low moderator = 1 standard deviation (SD) below the mean. *$p < .05$, **$p < .01$, ***$p < .001$.

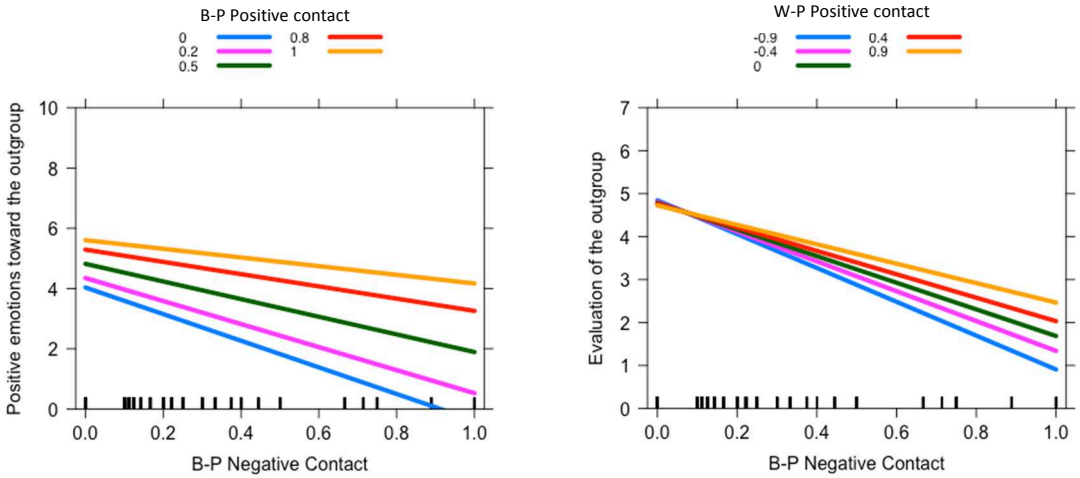

Figure 5.2. *Buffering Role of Positive Contact in the Association between Negative Contact and Positive Emotions towards Immigrant people*

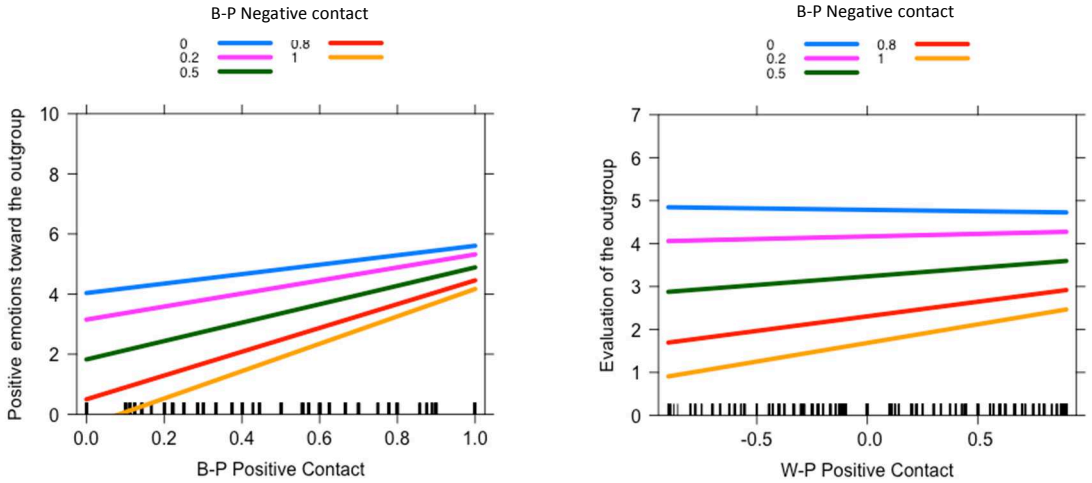

Figure 5.3. *Facilitating Role of Negative contact in the Association between Positive Contact and Outgroup evaluations and Positive Emotions towards Immigrant people.*

Interaction between positive and negative contact in the model with individual dispositions

We repeated the same analysis reported in Table 5.3, including SDO, quiet ego, NFC, entitlement, and agreeableness in the model. Results are reported in Table 5.5 and showed that after the inclusion of individual dispositions the relation of within-individual variations in positive contact with between-individual variations in negative contact and outgroup evaluation was still present, as well as the one of between-person effects of positive with negative contact and positive emotions. The negative effect of between-person variations in negative contact on negative emotions was still statistically significant, while the effect of within-individual variations in positive contact on outgroup evaluation disappeared.

Moreover, SDO and NFC were negatively related to outgroup evaluations and positive emotions and positively associated with negative emotions. On the contrary, quiet ego was associated with more positive emotions and outgroup evaluations and to less negative emotions.

Controlling for demographic variables and socially desirable responding

The same analysis reported in the previous paragraph was repeated also controlling for age, gender, level of education, and social desirability.

Results were very similar to those of Table 5.5, except that the association between quiet ego and negative emotions was no longer significant, so as the relation between NFC and positive emotions. Moreover, age had a negative association with outgroup evaluation and positive emotions.

Table 5.5. *Associations between Positive and Negative Intergroup Contact, Outgroup evaluation and Positive and Negative Emotions felt toward Immigrants, including the interaction between Positive and Negative contact and Individual dispositions.*

	Outgroup evaluation			*Positive emotions*			*Negative emotions*		
	b	*95% CI*	*p*	*b*	*95% CI*	*p*	*b*	*95% CI*	*p*
SDO	-0.38	-0.51 – -0.26	<.001	-0.42	-0.55 – -0.29	<.001	0.28	0.15 – 0.42	<.001
Quiet ego	0.23	0.01 – 0.45	.044	0.34	0.10 – 0.58	.006	-0.18	-0.43 – 0.07	.150
Entitlement	-0.08	-0.17 – 0.02	.111	-0.09	-0.19 – 0.02	.100	0.10	-0.01 – 0.21	.066
NFC	-0.24	-0.38 – -0.10	.001	-0.21	-0.36 – -0.06	.006	0.27	0.11 – 0.42	.001
Agreeableness	-0.15	-0.36 – 0.05	.141	-0.13	-0.35 – 0.09	.239	0.05	-0.18 – 0.28	.652
B-P Positive Contact	1.12	0.70 – 1.53	<.001	1.09	0.64 – 1.55	<.001	-0.80	-1.26 – -0.33	.001
W-P Positive Contact	-0.06	-0.12 – 0.00	.069	-0.02	-0.09 – 0.06	.667	-0.08	-0.16 – 0.00	.054
B-P Negative Contact	-2.73	-4.17 – -1.29	<.001	-3.39	-4.95 – -1.82	<.001	2.97	1.35 – 4.58	<.001
W-P Negative Contact	-0.12	-0.30 – 0.07	.208	-0.05	-0.26 – 0.15	.612	0.30	0.07 – 0.54	.010
B-P Positive Contact*B-P Negative Contact	1.42	-0.62 – 3.46	.173	2.58	0.37 – 4.80	.022	-1.68	-3.97 – 0.61	.150
B-P Positive Contact*W-P Negative Contact	-0.06	-0.44 – 0.33	.773	-0.19	-0.62 – 0.24	.390	-0.24	-0.73 – 0.25	.334
W-P Positive Contact*B-P Negative Contact	0.91	0.47 – 1.35	<.001	0.26	-0.23 – 0.75	.301	0.32	-0.23 – 0.88	.253
W-P Positive Contact*W-P Negative Contact	0.07	-0.22 – 0.36	.644	-0.15	-0.48 – 0.17	.361	-0.01	-0.38 – 0.35	.955
B-P variance		0.31			0.39			0.50	
W-P variance		0.88			1.03			1.09	
ICC		0.74			0.73			0.69	
Observations		2,971			2,971			2,971	
Individuals		358			358			358	

Note. SDO denotes Social Dominance Orientation; NFC denotes Need for Closure. W-P = Within-Persons; B-P = Between-Persons. P-values computed with Kenward-Roger approximation.

Discussion

In the fifth and last study, we provided further support for our hypotheses. Consistent with H1 and H2, at the between-level, positive and negative contact had opposite associations with outgroup evaluations and positive and negative emotions felt toward the outgroup. When individuals experienced on average more positive contact across the 10 days, they also reported fewer negative emotions and more positive outgroup evaluations. Conversely, when individuals had, on average, more negative contact across the 10 days, their level of positive emotions was lower, their outgroup evaluations worse, and their levels of negative emotions was higher. At the within level, when an individual experienced negative contact on a given day, s/he reported more negative emotions toward the outgroup.

Considering the joint effect of positive and negative contact, we found a significant interaction of between-person positive contact and between-person negative contact on positive emotions felt toward immigrants, corroborating H4. The product of within-person positive contact and between-person negative contact was also significantly related to outgroup evaluations. The decomposition of these interactions provided support for both the buffering (H4a) and the facilitation hypotheses (H4b).

As regard to the effects of individual dispositions, we found that SDO and NFC were associated with more negative emotions, worse outgroup evaluations, and less positive emotions toward immigrant people. Conversely, quiet ego was related to better outgroup evaluations and more positive emotions. These results are in line with the ones of previous studies.

Furthermore, repeating the moderation analyses controlling for individual dispositions, we found that all the interactions between positive and negative contact were all still present.

CHAPTER IV

GENERAL DISCUSSION

The aim of the present research was to examine how positive and negative contact with several target groups (i.e., immigrant people, Muslim people, and gay people) are associated with intergroup emotions (i.e., intergroup anxiety, empathy), deprovincialization, and various outgroup evaluation indexes (i.e., outgroup attitudes, islamophobia, subtle prejudice, positive and negative emotions felt toward the outgroup, H1 and H2). We then investigated whether the relationship between valenced contact and prejudice could be mediated by intergroup anxiety, empathy, and deprovincialization (H3). Moreover, we tested the possibility that positive and negative contact would interact with each other (H4) in a way that positive intergroup contact experiences could act as a protective factor against the detrimental effect of negative contact (i.e., *buffering* hypothesis, H4a) and that negative contact experiences may enhance the beneficial effect of positive contact (i.e., *facilitation* hypothesis, H4b). Furthermore, we explored whether positive and negative contact effects may be related to some individual dispositions (i.e., SDO, quiet ego, NFC, entitlement, and agreeableness) that in past research has been found to be relevant for both intergroup contact and prejudice, examining if the hypothesized relationships are still present when these dispositional variables are taken into consideration (H5).

To test these hypotheses we conducted five studies with different research design, three cross-sectional (Studies 1, 2, and 3), one longitudinal (Study 4) and one with a daily diary (Study 5). In this chapter we will discuss our findings, focusing on our main research questions and acknowledging some limitations and future directions to improve our work.

The effects of positive and negative contact

Taken together our results confirmed the hypothesized relationships with the dependent measures (H1 and H2), showing that positive and negative contact experiences have diametrically opposite effects. Across all the five studies, we consistently found that

having more positive interactions with outgroup members is associated with more empathy toward the outgroup, more deprovincialization, less intergroup anxiety, more positive and less negative emotions toward the outgroup (in Study 5), and with better outgroup attitudes. Positive contact was also negatively related to prejudice toward various target groups, such as islamophobia (Study 2), prejudice toward immigrants and gay people (Study 3 and 4) and subtle prejudice (Study 4). In contrast, negative contact had opposite relations with the same outcome variables. It was positively related to all prejudice indexes, to intergroup anxiety and negative emotions toward the outgroup, while being associated with lower levels of empathy and deprovincialization, less positive emotions, and worse outgroup attitudes. These results confirm the well-documented beneficial effects of positive intergroup contact and further highlight the importance of consider also negative interactions, as they have a unique and reliable influence on intergroup relations as well.

The design of Studies 4 and 5 allowed us to separate the between- and within-person effects of positive and negative contact, exploring also the effects of intra-individual variations of valenced contact. In Study 4 we found that participants who experienced more positive contact than usual across 8 weeks period reported also more empathy, more deprovincialization, more positive outgroup attitudes, and less prejudice toward immigrants. On the contrary, when a participant experienced more negative contact than h/she usually did across the 8 weeks, that individual reported more negative outgroup attitudes, less empathy toward the outgroup, less deprovincialization, and increased levels of prejudice. In Study 5, individuals who experienced negative contact on a given day, reported also less positive and more negative emotions toward the outgroup, while within-person positive contact was not related to the criterion variables.

Mediation of affective variables and deprovincialization

In the first four studies we tested intergroup anxiety, empathy, and deprovincialization as parallel mediators of positive and negative contact in predicting prejudice-related variables. Results consistently showed that, for both the type of contact, there was an indirect effect of anxiety, empathy, and deprovincialization, supporting our hypothesis (H3). In particular, across all the studies we found that positive contact was

associated with more positive outgroup attitudes and was negatively related to all the prejudice measures via decreased intergroup anxiety and through higher levels of empathy and deprovincialization. A similar but opposite pattern emerged for negative contact, which was related to higher levels of prejudice and to more negative outgroup attitudes through decreased empathy and deprovincialization and increased intergroup anxiety. These results suggest that the relationships between positive and negative contact can be explained by the same emotional processes, being at the same time in line with studies that showed how intergroup anxiety, apart from being a strong mediator of the positive contact-prejudice relationship, can also explain the association between negative contact and prejudice (Techakesari et al., 2015). However, these findings are in contrast with previous research showing that, when negative contact is taken into account, empathy seems to work as mediator only in the relation between positive contact and more affective measures (i.e., outgroup evaluations; Hayward, Tropp, Hornsey, & Barlow, 2017). Our results suggest instead that intergroup anxiety and empathy are robust mediators of the association of both positive and negative contact with outgroup attitudes, also when more "cognitive" measures (i.e, islamophobia, prejudice toward the outgroup, subtle prejudice) are taken into account.

These results also provided further support for Pettigrew's (1997) deprovincialization hypothesis, showing that interactions with people from different groups could enrich people's view of the social world, making them recognize the values of other cultures, thus ameliorating intergroup relationships. These results are also consistent with previous research showing that having more international friendships increases levels of open-mindedness, and decreases feelings of apprehension related to intercultural communication (Williams & Johnson, 2010). Moreover, our findings highlight the importance of the frequency of contact experiences, as every occasion of positive or negative contact may contribute to the development or to the regression of a deprovincialized mindset, respectively improving or worsening outgroup evaluations.

Interaction between positive and negative contact

Recently, Árnadóttir et al. (2018) found that positive and negative contact, rather than only being additive in their effects, may also interact with each other. We tested this

possibility in all of our five studies providing evidence for the joint effect of positive and negative contact on various outcome variables and thus supporting H4.

In particular, the product between positive and negative contact was associated with empathy and deprovincialization (Studies 1 and 2), outgroup attitudes (Studies 1, 2, 4, and 5), prejudice toward the outgroup (Studies 3 and 4), intergroup anxiety (Study 2) and positive emotions toward the outgroup (Study 5). The decomposition of these interactions revealed both *buffering* and *facilitation* effects. On one hand, negative contact was less negatively related to empathy, deprovincialization, outgroup attitudes, and positive emotions, and less positively related to prejudice and intergroup anxiety when participants reported more positive contact experience. These results are consistent with research by Paolini et al. (2014) and Árnadóttir et al. (2018) and support our *buffering* hypothesis (H4a). Having more positive contact experiences can serve as a "protective" factor from the detrimental effect of negative contact. On the other hand, positive contact was associated with more empathy and deprovincialization, better outgroup attitudes, more positive emotions, decreased prejudice and intergroup anxiety when participant had also more negative contact experiences. This is in line with results of Birtel and Crisp (2012), Árnadóttir et al. (2018), and with our *facilitation* hypothesis (H4b), according to which the effects of positive contact can be enhanced by the presence of negative interactions.

The role of individual dispositions

As predicted, most of the person-based variables examined in this research were associated with our outcome measures. The individual dispositions more strongly related to the intergroup criterion variables were SDO and quiet ego. These two variables presented similar but opposite associations with outgroup evaluations, affective variables, and deprovincialization.

SDO had a general detrimental effect on intergroup outcomes. Across the five studies and all the target groups it was consistently and negatively associated with outgroup attitudes, empathy, deprovincialization, and positive emotions felt toward the outgroup. It was also related to more negative contact, more prejudice, and more negative emotions toward the outgroup. In three out of four studies it was also related to more

intergroup anxiety. This is in line with the tendency of people scoring higher on SDO to see the world as a "competitive jungle", and with their motivation to maintain hierarchies and group differentiation; indeed, socially dominant people are more likely to perceive other groups as threatening and tend to be less concerned with the well-being of others (Asbrock, Christ, Duckitt, & Sibley, 2012; Sidanius & Pratto, 1999).

Conversely, quiet ego had an overall beneficial effect. It was related to more positive intergroup contact, more empathy and deprovincialization, more positive emotions toward the outgroup, and better outgroup attitudes. Accordingly, it was also negatively associated to islamophobia, prejudice toward immigrant people and gay people, and subtle prejudice. This is consistent with a primary feature of quiet ego, which is the interest in the connection with others and the world (Bauer & Wayment, 2008). It is also in accord with previous findings showing a positive relationship between quiet ego and intergroup emotions and attitudes. In addition, it shows that this individual disposition is related to more openness and acceptance of other cultures (i.e., deprovincialization) and that this beneficial influence includes various minority groups.

Need for cognitive closure (NFC) was consistently associated with more intergroup anxiety, less deprovincialization, worse outgroup attitudes and subtle prejudice. It was also related to less positive and more negative emotions towards the outgroup. In Study 1 and 4, it was also related to less positive contact. These results are in line with previous work that evidenced the detrimental effect of need for closure in intergroup relations (Dhont et al., 2011; Roets & Van Hiel, 2006) and suggest that people higher in NFC are also less opened to other individuals and groups and have more feelings of anxiety and uncertainty in the interactions with other groups.

As regard to psychological entitlement and agreeableness, we found a less consistent pattern of results. In most of our studies (except for Study 4), these individual dispositions were not related to any of our outcome variables. Nevertheless, observing their correlations with intergroup variables interesting relations emerged. Psychological entitlement was consistently found to be related to more intergroup anxiety, less empathy and deprovincialization, less positive outgroup evaluations, and increased prejudice. This is consistent with research showing how entitled individuals tend to exhibit more negative evaluations of relevant outgroups (Anastasio & Rose, 2014, Boin & Voci, 2019). In contrast, agreeableness was linked to more empathy, more deprovincialization, less

anxiety, less prejudice and better outgroup attitudes. This is in line with previous findings that individuals higher in agreeableness have also more positive reactions to other people and groups and their interest in sustaining harmony in interaction with others (Costa et al., 1991; Graziano & Habashi, 2010). It is possible that in multivariate analyses these effects were absorbed by the other dispositional variables included among the predictors (i.e., SDO, quiet ego, and NFC) that were more strongly associated with the intergroup measures.

Beside the direct relationships between individual dispositions and intergroup variables, SDO, quiet ego, and NFC were also indirectly associated to outgroup evaluation and prejudice first through intergroup contact and then through intergroup emotions and deprovincialization. In particular, except for Study 3, SDO was related to less positive outgroup attitudes and higher prejudice, first through more negative intergroup contact, and then via increased intergroup anxiety and decreased deprovincialization (Studies 1, 2, and 4) and via less empathy toward the outgroup (Studies 2 and 4). Thus, the harmful effect of SDO on intergroup relations is mostly explained by the detrimental effect of negative contact. People higher in SDO are more likely to perceive intergroup encounters as negative, especially when the outgroup member is from an ethnic minority group (i.e., immigrant and Muslim people), and in turn they experience more intergroup anxiety and are less open toward other cultural worldviews. This is consistent with previous research and the intrinsic motivation of people high in SDO to maintain dominance in intergroup relations (Duckitt, 2001, 2006). In all the studies, quiet ego was indirectly associated with better outgroup attitudes or less prejudice, first via more positive intergroup contact interactions, and then via reduced anxiety (all the studies), increased deprovincialization (Studies 2, 3, and 4), and higher empathy (Studies 1, 3, and 4), in accordance with the general predisposition of people with a quiet ego to have compassion and understanding of other groups' conditions and point of views (Wayment et al., 2015).

Finally, NFC was consistently related to worse outgroup attitudes and more prejudice, first through less positive contact, and then via anxiety, empathy, and deprovincialization. People who score higher in need for closure are more likely to avoid intergroup contact experiences, not benefitting from their positive effects and thus feeling

more uncertain and anxious in anticipation of interactions with other groups, having less empathy and being less open to accept different cultural views.

Across all the five studies we found that the main effects of positive and negative contact on attitudes and prejudice measures held controlling for a range of individual dispositions. These results supported our hypothesis (H5) and are consistent with previous studies that showed how contact quality continued to be positively associated to outgroup attitudes also controlling for the simultaneous effect of relevant individual predictors of prejudice (i.e., SDO, RWA, NFC, ethnic identification; Kteily et al., 2019). Additionally, in our research, we tested the resistance of intergroup contact effects examining separately positive and negative contact experiences showing that these two kinds of interactions are both powerful in predicting outgroup outcomes. Furthermore, the main effects of positive and negative contact held also when controlling for socially desirable responding and socio-demographic variables (i.e., age, gender, level of education). However, when including individual dispositions in the moderation model, in most of the cases, the associations between the product of positive and negative contact and the outcome variables disappeared. Although the fundamental effects of positive and negative contact seem to be resistant to the influence of relevant individual dispositions, their interaction might be suppressed by dispositional factors that were strongly related to the criterion measures (i.e., SDO, quiet ego, NFC).

Limits, Strenghts, and Future directions

Notwithstanding these consistent results, some limitations of our studies should be noted. First, we only relied on self-report data, which may be affected by response biases (e.g., self-enhancement, impression management; see Paulhus, 1991). However, in four out of five studies, we repeated the analysis also controlling for socially desirable responding showing that the major results did not change. Only in one study (Study 3) we found a significant association between self-enhancement and intergroup anxiety, and between impression management and empathy.

Second, although the size of our samples was adequate, especially in Study 4, we only relied on convenience samples of Italian respondents, and thus our findings may not

be necessarily generalizable to the Italian population or other cultural contexts. Future studies could employ more representative samples.

Third, the correlational nature of our data does not allow us to identify the direction of the effects. In Study 4 and 5, we focused on within- and between-person variations in positive and negative contact and their associations with within- and between-person variations in anxiety, empathy, deprovincialization, and outgroup evaluations indexes without exploiting any temporal sequence. Although the analyses we employed are the most appropriate for dispositional, mainly stable, variables, and for our research design (an 8-week longitudinal design in Study 4, and a 10 days daily diary in Study 5), future studies could implement longitudinal studies with longer time spans, and investigate in a more causal-oriented way the relationships between intergroup contact, intergroup emotions, deprovincialization, and prejudice. Moreover, in the instruction preceding the measure of positive and negative contact employed in Study 4, we didn't specifically ask participants to think about encounters with outgroup members they had in the last 4 weeks, and this may in part explain the low variability of responses across the three waves.

Fourth, in this research we focused only on the majority group perspective. While there is a large body of literature that had studied prejudice-reducing effects of intergroup contact among majority group members, only few studies have examined such effects taking into consideration minority group members, and even less that has distinguished between positive and negative contact experiences and investigated their interaction (Árnadóttir et al. 2018; Hayward et al, 2017; Tropp & Pettigrew, 2005; Visintin et al., 2017). Results of several studies suggest that the contact–prejudice relationship may be weaker among members of disadvantaged, minority groups than among members of advantaged, majority groups (Barlow, Hornsey, Thai, Sengupta, & Sibley, 2013; Tropp & Pettigrew, 2005). However, further research is needed to clarify how status differences can alter positive and negative contact effects.

In spite of these limitations, our results provided a deeper understanding of the effects of positive and negative contact on various intergroup outcomes and considering a variety of target groups, showing that these relationships can be explained by the same emotional processes. Our results highlight also the importance of promoting positive contact as a means to reduce prejudice between groups. Not only does positive contact

have a well-established effect on outgroup attitudes, but, as our results suggest, it can also protect against the detrimental effects of negative contact. Furthermore, the benefits of positive contact are increased in situations in which there is also more negative contact.

Moreover, we explored, as far as we know for the first time in intergroup contact research, how intra-individual and inter-individual variations in positive and negative contact can be associated to inter- and intra- individual variations in intergroup emotions and prejudice, showing that valenced intergroup interactions and outgroup evaluations can change simultaneously. In Studies 4 and 5 we found that experiencing more positive contact than other individuals was associated with more favorable outgroup evaluations compared to other participants, while when individuals had on average more negative contact experiences, their evaluations of the outgroup were worse. Looking at the within-person effects of positive and negative contact, in Study 4 we found that when an individual experienced more positive (or more negative) contact than he or she usually does, that individual had also better (or worse) attitudes toward the outgroup. However, in Study 5 we found somewhat different results: individuals who experienced negative contact on a given day reported also less positive emotions toward the outgroup on that day, while within-person positive contact was unrelated to the criterion variables. It is noteworthy that the diary method allowed us to measure participant's contact experiences in the last 24 hours, thus offering a measure of their concrete, everyday contact experiences and decreasing the risk of having recall biases in the participant's answers. Our results thus suggest that, in a short timeframe, a negative contact experience on a given day may be more prominent in eliciting negative emotions toward the outgroup on that day. Repeated episodes of positive contact experiences may be required to bring about the same effects for positive interactions. We encourage intergroup contact researcher to further examine the effect of positive and negative intergroup contact on outgroup attitudes and prejudice, disentangling within-person processes over time and stable between-person differences. We also provided evidence for the importance of taking into consideration individual dispositions in intergroup contact research to better understand how these variables can shape intergroup perceptions and interactions.

Another possible extension of this research would be the exploration of the effects of positive and negative contact and their interaction effects considering the generalization of effects of contact with one outgroup to other outgroups not directly

involved in the contact situation, namely the "Secondary Transfer Effect" of contact (STE; Lolliot et al., 2013; Pettigrew, 1997, 2009; Tausch et al., 2010). Although there is evidence for the STE for positive contact in the literature, as far as we know, only few studies have examined STE taking into consideration both positive and negative contact (Brylka, Jasinskaja-Lahti, & Mähönen, 2016; Mähönen & Jasinskaja-Lahti, 2016) and none of them have investigated the interaction between these two kinds of experiences. It would be interesting to see if there is a STE originating from negative intergroup contact as well and whether this negative generalization could be attenuated by a STE of positive contact. Furthermore, future research could explore the role of individual dispositions in STE and, in particular, investigate how prejudice- and prosociality-related variables can favor/hamper the generalization of positive and negative contact effects to other groups, thus shading light to the reasons why some individuals demonstrate relatively stable dislike towards multiple outgroups.

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