Negative Intergroup Contact is More Influential, but Positive Intergroup Contact is More Common: Assessing Contact Prominence and Contact Prevalence
in Five Central European Countries

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Abstract

The present research tested the idea that the ecological impact of intergroup contact on outgroup attitudes can be fully understood only when relative frequency and relative influence of positive and negative contact are considered simultaneously. Participants from five European countries (Austria, the Czech Republic, Germany, Poland and Slovakia; $N =$ 1,276) freely described their contact experiences with people of neighboring nationalities and then reported on their outgroup attitudes. Contact descriptions were coded for positive versus negative valence and for person- versus situation-framing. Consistently across the five participants groups, positive intergroup contact was reported to occur three times more frequently than negative intergroup contact; however positive contact was found to be only weakly related to outgroup attitudes. On the contrary, the less frequent negative (vs. positive) contact was comparatively more influential in shaping outgroup attitudes, especially when negativity was reported around the contact person, rather than the contact situation. This research's findings reconcile contrasting lines of past research on intergroup contact and suggest that the greater prevalence of positive contact may compensate for the greater prominence of negative contact, thus leading to modest net improvements in outgroup attitudes after intergroup contact.

KEYWORDS: Intergroup contact, negative contact, outgroup attitudes, contact person, contact situation

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"… *good may prevail over bad by superior force of numbers*"
(Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001, p. 323)

A large body of research shows that intergroup contact typically reduces prejudice (for a meta-analysis see, Pettigrew & Tropp, 2006). Recent comparisons of positive vs. negative intergroup contact, however, found that negative contact is more influential in shaping outgroup attitudes than positive contact (Barlow et al., 2012; Dhont & Van Hiel, 2009). This leads to an important question: If negative contact has a stronger influence on outgroup attitudes than positive contact, why does intergroup contact ultimately reduce, rather than exacerbate, intergroup animosity? We believe that Baumeister and colleagues' (2001) simple and elegant idea provides the answer: While negative contact is more influential, positive contact may outweigh its influence "by superior force of numbers", in other words by simply being more common.

In this research, we compared the relative influence, or strength of association between outgroup attitudes and positive versus negative contact experiences, as well as examined the relative frequency of positive and negative contact in real life settings. We argue that the contradictory findings of past research can be reconciled and a fuller understanding of intergroup contact achieved by simultaneously considering both frequency and size of effects on attitudes of positive and negative intergroup contact.

Positive versus Negative Intergroup Contact

A large meta-analysis of 515 studies with 713 independent samples found that intergroup contact typically reduces prejudice (mean $r = -.21$; Pettigrew & Tropp, 2006). A closer examination of the studies' design also revealed that the contact-prejudice link was further enhanced when the contact experience was structured in line with Allport's (1954) propositions for optimal contact (i.e., equal status, common goals, intergroup cooperation and institutional support; mean $r = -.29$). Studies that did not attempt to optimally structure the contact situation yielded comparatively lower but nonetheless significant effects (mean $r = -.20$; Pettigrew & Tropp, 2011). Hence, Pettigrew and Tropp drew the general optimistic conclusion that intergroup contact is beneficial not only under carefully controlled conditions of the psychology laboratory, but also in real-world settings, where Allport's optimal conditions are less likely to be met.

Pettigrew and Tropp (2006, 2011; see also Pettigrew, 2008), nevertheless, admitted that past contact research in general—and as a result, their synthesis—suffered from a neglect of negative intergroup contact. Consequently, the effects of positive contact found in past studies could not be compared with the (missing) effects of negative contact. Critically, positive contact represents only one part of the full evaluative spectrum of possible contact experiences (Paolini, Harwood, & Rubin, 2010; Stark, Flache, & Veenstra, 2013). Without considering the effects of negative contact on outgroup attitudes, part of the picture is absent, and this poses a serious limitation to the knowledge gained from intergroup contact research and its applicability to real life settings (for a similar point, see Pettigrew & Tropp, 2006).

One of the first investigations to explicitly compare the relative effects of positive and negative contact was

conducted by Paolini and colleagues (2010; see also Paolini et al., in press). Their research found experimental and longitudinal evidence that the awareness of group memberships is higher during negative than positive intergroup contact. Drawing from extensive evidence synthesized by Brown and Hewstone (2005), Paolini et al. predicted that, due to heightened category salience, negative contact experiences with specific outgroup members should generalize to the outgroup as a whole more readily than positive contact experiences. Tests of this idea by Barlow and colleagues (2012) recently confirmed that negative contact is indeed more influential or 'prominent' in shaping outgroup attitudes than positive contact. Consistent with Paolini et al.'s premises, Barlow et al. found across six independent Australian and American samples that the prejudice *increasing* effects of negative contact were larger than the prejudice *reducing* effects of positive contact. Similarly, in a general community sample from Belgium, Dhont and Van Hiel (2009) found that the effect of negative contact with immigrants on worsening racism by far outweighed the effect of positive contact on racism reduction ($r = .46$, $p <$ .001 vs. $r = .28$, $p < .01$, respectively).

Overall, this second line of research offers a less optimistic conclusion than Pettigrew and Tropp's (2006) meta-analysis: It suggests that intergroup contact may be naturally skewed towards enhancing rather than reducing intergroup animosity, due to the disproportionate influence of negative contact on category salience and on outgroup attitudes. Other recent studies directly comparing the effects of positive and negative contact have returned a less consistent picture. Contrary to Paolini et al. and Barlow et al., Stark and colleagues (2013) found that, in the classroom context, positive and negative attitudes towards particular outgroup students generalized to outgroup attitudes to the same degree (see also Paolini, McIntyre, & Hewstone, 2014).

Another study has shown a relative prominence of positive contact (Pettigrew, 2008; Pettigrew & Tropp, 2011, Chapter 12). Hence, although there is some evidence that negative contact is a stronger predictor of outgroup attitudes, there is also evidence of null or even opposite effects.

More research is needed in this area before definitive conclusions about this prominence issue can be reached. One aim of the present research was to contribute to this effort. A second, key aim was to provide a fuller picture of positive-negative effects of intergroup contact that considers not only their relative influence on outgroup attitudes, but also their relative frequency in naturalistic settings.

Strengths and Weaknesses of Past Contact Research

In designing the present research, we took into account both strengths and weaknesses of previous studies. We stressed already how Pettigrew and Tropp's (2006) optimistic conclusions reflect an impressively large pool of studies in which negative contact is visibly underrepresented. An undeniable strength of Pettigrew and Tropp's work, however, is its careful consideration of the rigor of the research study designs, target groups, and participants' characteristics. Critically for the issues at stake here, its elaborate methodology controlled for a wide range of biases, including the causal sequence problem, and the file drawer issue, which can significantly distort the representativeness of the studies sampled for a meta-analysis. Such high levels of control, coupled with the absolute size of their study sample, thus raise the possibility that Pettigrew and Tropp's positively skewed study sample *accurately* reflects the disproportionately *larger frequency* of positive (vs. negative) contact in people's ordinary experiences in real life settings. In other words, positive contact might be only modestly influential and comparatively less influential than

negative contact for outgroup attitudes. However, the greater prevalence of positive contact would ultimately translate into the positive balance for intergroup contact effects as for the meta-analysis' central finding. We explored this possibility further in the present research.

In contrast, the experimental work of Paolini et al. (2010; in press) explicitly compared and contrasted the effects of positive and negative contact by *assigning* an *equal number* of participants to either *one* positive or *one* negative contact condition. While this experimental approach allows firm conclusions about direction of causality (cf. extant correlational evidence as reviewed in Paolini et al., 2010), it obviously lacks ecological validity. Firstly, because it implies an idealized view of either 'purely positive' or 'purely negative' contact that may be rare in naturalistic settings. Secondly, because the experimental procedure forces a balanced, equal frequency for positive and negative contact that may *inaccurately* map onto the ecology of intergroup contact in real settings. As a result, this type of research neglects possible differences in the natural occurrence of positive/negative experiences in everyday intergroup encounters.

Some studies have recently started to explore the frequency of participants' past positive and negative contact (Study 2 of Barlow et al., 2012; Dhont & Van Hiel, 2009; Pettigrew, 2008; Pettigrew & Tropp, 2011, Chapter 12) and have reported a relative prevalence of positive over negative contact. All of these past studies, however, have employed explicit questions about contact valence. These methods require participants' retrospective awareness of the frequency of positive and negative events that might be either inaccessible or inaccurate (for an extensive discussion of biases in retrospective valence appraisals, see Schwarz, 2007). Furthermore, overt questions about positive and negative contact experiences

lack validity because (a) they force respondents into evaluations of past contact they might otherwise spontaneously not articulate and (b) they prime respondents with expectations that past contact should be either positive or negative. By explicitly probing considerations of contact valence, overt measures bear the risk of activating social desirability concerns and lead to biased valence appraisals.

Towards a More Ecologically-Valid Analysis of Contact Prevalence and Prominence

Our research aimed to reconcile the opposing outlooks on intergroup contact of past studies by advancing an analysis that encompasses both frequency and influence of positive versus negative contact on outgroup attitudes. We offset the measurement limitations of previous studies by using an unobtrusive, free-response approach to the assessment of contact valence. To get closer to the reality of multifaceted intergroup encounters, we asked participants to freely describe their own experience with outgroup members without any valence probes. Consequently, contact descriptions could mention exclusively positive, exclusively negative, both positive and negative or no valence at all. If participants included evaluative assessments in their contact descriptions, independent judges coded them along a positivity dimension and a negativity dimension; we regarded these evaluative assessments as genuine appraisals of contact valence, rather than methodological artifacts. Also, in contrast to a focus on *within* participants' retrospective estimates of frequency for positive and negative experiences in past research (e.g., Barlow et al., 2012; Dhont & Van Hiel, 2009; Pettigrew, 2008), in our research we focused on relative frequencies of reports of positive and negative contact *across* individuals – i.e., within the overall sample of contact descriptions and away from participants'

gross frequency estimates. Linking of past positive and negative contact experiences with participants' evaluations of the outgroup enabled us to compare the relative influence of positive and negative contact on outgroup attitudes.

A unique advantage of this free-response approach is that it allowed us to obtain not only evaluative but also *non-evaluative* accounts of past contact experiences. In ordinary daily life, people may not necessarily evaluate all of their experiences. At the same time, the absence of valence in the retrieval of past contact does not necessarily mean that contact has no effect on outgroup attitudes (Pettigrew & Tropp, 2006). This important feature in the ecology of people's ordinary experience has been neglected in past investigations. In our prevalence analyses, the inclusion of non-evaluative intergroup contact experiences contributed to a fuller pool of participants' accounts of past experiences with outgroup members. In our prominence analyses (i.e., the analysis of the size of the contact-attitudes effects), outgroup attitudes associated with non-evaluative past contact served as a benchmark against which outgroup attitudes associated with positive vs. negative contact were assessed. Overall, this inclusion of non-evaluative contact in our analysis—we believe—contributes to make the present research into a more ecological examination.

In this study, we treated contact valence in two distinct ways. In our assessment of frequency and size of effects, we first focused on exclusively positive and exclusively negative contact and directly compared these two types of evaluative accounts. This first approach replicates the usual way in which contact is treated in past experimental studies on valence asymmetries (i.e., contact is either positive *or* negative). In a second, more ecologically valid approach to contact valence, we assessed both contact positivity and contact negativity separately and simultaneously—for these analyses we

contrasted the presence of positively and negatively valenced contact to their absence. This second approach allowed us to account for maximum variability in past intergroup experiences.

The Role of Person versus Situation Framing of Intergroup Contact

In the contact literature, the outgroup interaction partner is explicitly or implicitly regarded as the key carrier of the effect of intergroup contact on outgroup attitudes (Stark et al., 2013; see e.g., Brown & Hewstone, 2005 for an extensive discussion of individual-to-group generalization). Here, we argue that there is more to intergroup contact than just people of different group memberships and the building of evaluative group judgments might rely on a multitude of sources. In the present research, we extended our analysis to valence appraisals that are framed around the situation or context in which contact takes place. Intergroup contact scholars have been as much as necessary preoccupied with situational conditions that moderate the effect of contact on attitudes (see Pettigrew & Tropp, 2006); however, they have not directly compared the effects of valence associated with the contact partners vs. the effect of valence associated with the situational context. Although the intergroup contact literature does not assist in spelling out how person- versus situation-framing of contact may influence outgroup attitudes, we can make reasonable inferences from well-established attribution literature.

The person-situation dichotomy is central to attribution research. This expansive literature indicates that, at least in Western societies, individuals spontaneously prefer person-based, over situation-based, explanations of behavior (e.g., Choi, Nisbett, & Norenzayan, 1999; Ross & Nisbett, 1991). In the intergroup domain, this relative attribution preference is referred to as the 'ultimate attribution error' (Hewstone, 1989; Pettigrew, 1979). Person-based attributions have been found

to be more influential bases for group judgments in the stereotyping literature. For example, Wilder, Simon, and Faith (1996) demonstrated that a single outgroup member was able to change outgroup stereotypes when his/her counterstereotypical behavior was attributed to stable dispositional causes. The very same counterstereotypical behavior had no effect on group stereotyping when it was attributed to external causes.

We expected a similar person-situation asymmetry to hold in intergroup contact effects. In this research, we isolated the novel and unique contribution (if any) that the valence of the contact situation may exert on outgroup attitudes. Moreover, we contrasted the relative strength of associations between outgroup attitudes and valence framed around the contact person to that of valence framed around the contact situation. For this purpose, our participants were let free to frame their contact description around the contact partner(s) (person-framing) or more impersonally (situation-framing); the independent judges simply coded each contact description along these two separate dimensions using a reliable coding protocol.

Drawing from this extant attribution literature, we expected person-framings to be generally more prevalent and prominent than situation-framings. If person-framing of behaviour is indeed a more spontaneous and natural option in Western societies, person-framings of contact should be relatively more frequent than situation-framings. Person-framing of contact should also have a stronger influence on attitudes. Critically, we were in a position to explore possible interactions between the effects of positive/negative contact valence discussed earlier and this person/situation-framing dichotomy. Given the prime role of the person (vs. situation) in interpretations of past experiences and the greater salience of negative (vs. positive)

contact (Paolini et al., 2010; in press), we expected that negative contact framed around the contact person (while not necessarily most frequent) would be most influential in shaping outgroup attitudes.

Summary of Key Predictions and Overview of the Research Setting

The present study investigated how frequency and influence of positive and negative intergroup contact accounts operate together in determining outgroup attitudes. In the spirit of Baumeister et al.'s earlier quote, we tested the hypotheses that positive contact *is more frequent* in people's ordinary experiences of intergroup contact but is comparatively *less influential* for outgroup attitudes and that negative contact is *more influential* for outgroup attitudes but *less frequent*. We expected valence asymmetries in the size of the effects of negative (vs. positive) contact to be particularly pronounced in person-framed (vs. situation-framed) descriptions of intergroup contact. As discussed early, the key novelty of our study design rests in its unobtrusive measures of contact valence and contact framing, soliciting open-ended and unconstrained descriptions of past contact.

We tested our hypotheses among real-world groups and in a real-world context, investigating intergroup contact between the nationals of five different countries in Central Europe: Austria, the Czech Republic, Germany, Poland and Slovakia—geographical locales that have been significantly underrepresented in past contact research (Pettigrew & Tropp, 2006). Our research focused on intergroup contact in border regions, a setting not well studied by social psychologists, although widely featured in sociological and especially anthropological literature (Alvarez, 1995; Kohli, 2000; Wilson & Donnan, 1998). According to anthropologists, people living in border regions have more occasions and need to reformulate and establish their national identity in the face of ever-present

outgroups (Wilson, 2012). We targeted participants in border regions because border regions provide greater opportunities for cross-national contact as compared to central regions.

Although there are no open conflicts in Central Europe, intergroup tensions and pattern of inequalities based on historical, economical and language grounds burden the relationships between these Germanic and Slavic countries. From an historical perspective, Germany and Austria have been negatively associated with the events of the Second World War in the eyes of their eastern neighbours (e.g., these attitudes resulted in forceful expulsions of autochthon German-speaking residents from their homes in what was then called Czechoslovakia during the WWII aftermath). The difficult relations between Germanic and Slavic countries were further compounded by the Czech Republic, Slovakia and Poland being subjected to Russian influence and being cut off from their western neighbours for over forty years by the Iron Curtain. More recent patterns of economic affluence by Germany and Austria have sustained mutual aloofness in contact between the nationals of these five Central European countries; the historically ingrained separation between Germanic and Slavic countries in central Europe continues nowadays and is marked and reinforced by language differences and language practices that maintain group boundaries and status hierarchies during ordinary cross-national encounters (Brown & Haeger, 1999; Petrjánošová & Graf, 2012; see Discussion for more on this topic).

Against this backdrop of historical tensions, several forms of contact now thrive among the citizens of these five countries—including student exchanges, shopping trips, tourism, and work experiences. In this context, individuals of different group memberships meet regularly and frequently. We expected these ordinary, unstructured, everyday encounters to vary amply and freely in valence (and to do so more than in polarized settings), thus allowing for an incisive test of our predictions.

With our focus on varied, daily and unstructured contact experiences, this research offers some discontinuity with the traditional intergroup contact literature's focus on positive and sanctioned experiences in conflict-ridden settings (Pettigrew & Tropp, 2006). Nonetheless, our approach is desirable because it can extend the scope of intergroup contact theory beyond its traditional research paradigm and test its applicability more ordinary settings of intergroup contact. Many contemporary multi-ethnic Western societies are characterised by prolonged periods of formal peace that involve undercurrents of intergroup pressure. In these societies, people typically refrain from openly expressing intergroup animosity, let alone reacting with aggression (Pettigrew & Meertens, 1995); yet, this does not equate to wholly harmonious intergroup relations or to intergroup relationships that are inconsequential for individuals or groups. Therefore, while we see the merit of the intergroup contact literature being quintessentially a literature of corrective interventions for conflict-ridden contexts, we regard more benign settings and settings with more covert forms of intergroup tensions also worthy of examination through the lens of intergroup contact theory (see also Pettigrew & Tropp, 2011, Chapter 12). In addition, to extend the scope of traditional contact research, the composite multi-national nature of our sample from Central Europe will enable us to test the generality of our findings and strengthen the basis of our conclusions.

Method

Participants

A sample of 1,276 university students from five central European countries was recruited via the university

email systems (Austria n = 146; the Czech Republic n = 691[1]; Germany n = 132; Poland n = 134; and Slovakia n = 173; M_{age} = 23.98, SD = 5.64; 78% women).

Procedure and Materials

A link to an online questionnaire was emailed or posted on a webpage of cooperating universities. Participation was anonymous, and participants were free to decide whether and when to participate. The study questionnaire was translated into four languages, so that all participants filled out materials in their native language.

Participants first provided their demographic details. They were then asked to recall and describe their contact experiences with people from the neighboring country following these instructions: "Can you recall any experiences you had with a [*outgroup person*; nationality label provided; e.g., "a Czech man or woman"] during your visit abroad or here in *home country* [country label provided; e.g., "Poland"]? How did the *outgroup member* [nationality label provided] behave in that particular situation? How did you behave? Please describe the situation, below." [2] Respondents were invited to describe their intergroup contact experience in a large type-in text box. Depending on the specific border region that they lived in, different Czech participants described contact with different target outgroups (with Austrians: n = 165; Germans: n = 176; Poles: n = 174; or Slovaks: n = 176); participants from the other four central European countries were always asked to describe contact with Czechs.

After several filler items (see Hřebíčková & Graf, 2014), a 5-item measure of national identification followed using a 5-point Likert-type scale (Leach et al., 2008). At the end of the questionnaire, participants indicated their attitudes towards the target outgroup in two ways. First, they reported the warmth of their feelings towards the outgroup on a feeling

thermometer (Haddock, Zanna, & Esses, 1993); the thermometer used 30-point increments with anchors *cold* and *warm*. Second, participants completed a semantic differential item using a 5-point Likert-type scale to indicate how *good* or *bad* they perceived the target outgroup. The two measures were coded so that higher values indicated warmer feelings or more positive attitudes towards the outgroup. The correlation between the two measures was moderate, $r(1276)$ = .41, p < .001.

A content analysis (Neuendorf, 2002) was carried out to analyze participants' descriptions of intergroup contact. We prepared a codebook with categories relevant to the focus of this study: *positive* and *negative* contact valence pertaining to the *person* and the *situation*. Descriptions that referred directly to the contact partners or their behaviour were coded as *person* framing (e.g., "my classmate worked on the project with great effort"); descriptions that referred to the context of contact were coded as *situation* framing (e.g., "the atmosphere in the restaurant was quite tensed"). Explicit positive references to valence were coded along the positivity category as positive (e.g., "the family I stayed with was doing its best to prepare an entertaining program for me"); explicit negative references to valence were coded along the negativity dimension as negative (e.g., "this whole experience has knocked them off the pedestal of our paragons"). The combination of valence coding (positive and negative) and framing coding (person and situation) resulted in four categories along which all and each of the open statements were categorized: 1. person positivity (present/absent), 2. person negativity (present/absent), 3. situation positivity (present/absent), and 4. situation negativity (present/absent).

Through this coding method, open accounts of cross-border contact could be coded as containing both positive and negative valence of the person and/or the situation at the same time. For example, in

a rich account on romantic contact with her Czech boyfriend, an Austrian participant mentioned both her boyfriend's positive and negative attributes (e.g., being smart and enterprising vs. too comfy and not searching for a job hard enough); hence, this self-reported account was coded as including reference to 'person positivity' and reference to 'person negativity'. In her detailed description, this participant also appraised the positive and negative contextual elements of their contact (e.g., stability of the relationship vs. difficulties in acculturation in a foreign country); therefore, this self-reported account was also coded for reference to 'situation positivity' and 'situation negativity'. In other words, in this particularly rich open account of a specific contact experience all four categories were coded as present. More often the coded material included reference to a smaller subset of categories and was therefore coded as 'absent' on other categories. Thus, in all cases each individual report of contact generated four codes. On the other hand, the coding did not take into account the number of positive and negative experiences that a participant had mentioned at the same time (i.e., stating one or more positive person evaluations always resulted in scoring 1 on person positivity).

Data from the two sides of each border region were pooled and always analyzed by two independent coders. Overall, we employed five coders of different nationalities who were fluent in the languages spoken on both sides of a particular border. The dyads always consisted of coders of different nationalities to control for possible ethnocentric biases influencing coding decisions. The inter-rater reliability analysis indicated good agreement between coders beyond chance for all of the coded categories in all eight border regions (all *Cohen's Kappas* ≥ .72, *Mdn* = .81; Banerjee, Capozzoli, McSweeney, & Sinha, 1999).

We treated contact valence uni-dimensionally and bi-dimensionally. For the uni-dimensional approach, we compared and contrasted positive and negative contact descriptions (coding: 0 = positive contact, 1 = negative contact) separately for the situation- and person-framing. This approach resulted in two vectors (situation valence: 0-1; person valence: 0-1). We call this approach *uni-dimensional* because, in this, positive and negative contact represent two opposing poles of a single evaluative dimension. In the *bi-dimensional approach*, we coded for the presence (coded as 1) as well as the absence (coded as 0) of both positive *and* negative contact, again separately for situation- and person-framing. Hence, this second approach resulted in four vectors (i.e., person positivity: 0-1; person negativity: 0-1; situation positivity: 0-1; and situation negativity: 0-1). We call this second approach *bi-dimensional* because, in this, positivity and negativity are two independent dimensions. [3]

Results
Frequency of Positive vs. Negative Contact

The frequency of positive and negative accounts of contact experiences was first inspected within the uni-dimensional approach (see Table 1). In naturalistic settings, we expected positive contact to outnumber negative contact. [4] In line with our prediction, accounts of positive experiences were four times more prevalent than accounts of negative experiences in both person-framing, $\chi^2 (673) = 215.69$, $p < .001$, and situation-framing, $\chi^2 (576) = 100.00$, $p < .001$. The greater prevalence of positive experiences held also within the bi-dimensional coding: Contact positivity was twice as prevalent as contact negativity. The bi-dimensional coding also revealed that a large proportion of participants did not describe their past contact experience in an evaluative way (see "absent" rows in the bottom part of Table 1); this large

representation of non-evaluative contact accounts suggests that self-selection biases favouring the recruitment of individuals with relatively polarized experiences from intergroup contact may have had limited impact on our data. Interestingly, irrespective of coding approach, the distribution of positive and negative experiences was virtually identical in both situation- and person-framed contact descriptions. Confidence intervals confirmed that positivity and negativity frequencies differed significantly in both framings: person positivity 95% CIs [0.50, 0.56]; person negativity [0.21, 0.25]; situation positivity [0.36, 0.42]; situation negativity [0.21, 0.25]. [5] The comparison of frequencies between the five countries confirmed similar distributions of positive and negative contact experiences as for the overall sample. [6]

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Insert Table 1 about here

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Effects of Person- vs. Situation-Framed Valence on Outgroup Attitudes

To assess the effects of person- and situation-framed valence in predicting outgroup attitudes, we employed a series of linear regression models. When predicting outgroup attitudes from person valence alone (see top of Table 2), negative experiences with outgroup members, as compared to positive ones, significantly predicted worse attitudes on both the feeling thermometer and the bad-good item. [7] We obtained the same pattern when predicting outgroup attitudes from situation valence alone (see middle of Table 2): Contact marked by a negative context predicted significantly worse outgroup attitudes as compared to contact marked by a positive context. These findings indicate that, when contrasting only positive with negative experiences, contact valence affected outgroup attitudes in the predicted direction in both person- and situation-framings.

Importantly, when entering both person- and situation-framed valence into the regression equation simultaneously (see bottom of Table 2), situation valence no longer uniquely predicted outgroup attitudes. This finding shows that, when considering only positive and negative contact experiences, person-framed valence was a more robust predictor of outgroup attitudes than situation-framed valence. Participants' nationality did not influence any of these effects [8] and participants' social desirability concerns did not affect them appreciably either [9], indicating that the pattern of results held constant across all five participants' national groups and variations in an indirect proxy of social desirability. Furthermore, controlling for identification with one's nationality (satisfaction and centrality; Leach et al., 2008) did not changed the pattern of results in either of the regression models.

Overall, these findings confirm our expectations that valence appraisals centered around particular contact partners (person-framed valence) are more powerful predictors of outgroup attitudes than valence appraisals centered around the contact situation.

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Insert Table 2 about here

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Effects of Negative vs. Positive Contact Moderated by Person and Situation Framing

We first performed two multiple linear regression models separately for person- and situation-framings to compare the effects of presence of contact positivity and of contact negativity to their absence. When entering *person* positivity and negativity simultaneously into the model, we found that reference to person negativity in participants' contact descriptions predicted significantly worsened attitudes (as compared to contact descriptions where person negativity was missing) on both the feeling thermometer

and the bad-good item. Reference to person positivity, on the other hand, was not a significant predictor of outgroup attitudes on the feeling thermometer and was a visibly weaker predictor on the bad-good item (see top of Table 3). These findings indicates that while contact descriptions where person negativity was present associated with worse outgroup attitudes than descriptions where person negativity was absent, the presence of person positivity did not make such a difference to outgroup attitudes as compared to its absence. Hence, consistent with our hypothesis, on the person-framing variables we found clear evidence of valence asymmetry: that is, person negativity was more influential in shaping outgroup attitudes than person positivity. In contrast to person-framing, we found no evidence for valence asymmetry in the situation-framed variables. When replicating the regression analyses with the situation-framed variables, we found that the effect of *situation* negativity and positivity on outgroup attitudes was comparable in magnitude on both the feeling thermometer and the bad-good item (see middle of Table 3).

To examine the unique contribution to attitudes of positive and negative contact that is framed around the contact person and the contact situation, we entered all four contact valence predictors into one model simultaneously (see bottom of Table 3). In line with our expectations, on both outcome variables, person negativity was found to be the strongest unique predictor of outgroup attitudes. That is, person negativity was the most influential predictor of outgroup attitudes; it was more influential than person positivity, situation negativity and situation positivity. These results were again unaffected by social desirability concerns, participants' nationality and national identification.[10] Importantly, as we had anticipated, the previously neglected situation valence also exerted some unique influence on outgroup

attitudes; however, valence appraisals framed around the contact person were comparatively more influential, especially when negative in nature. Hence, valence asymmetries on outgroup attitudes were moderated by the framing of the contact experience and person negativity was the most robust predictor of outgroup attitudes.

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Insert Table 3 about here

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Discussion

The present research started from the premise that the frequency *and* effect of positive contact *and* negative contact must be considered simultaneously for a fuller understanding of intergroup contact's impact on outgroup attitudes. In line with expectations, we found that while negative intergroup contact was relatively more influential than positive intergroup contact in shaping outgroup attitudes, the frequency of positive contact experiences unquestionably outnumbered negative contact's frequency. This pattern of results held invariant across respondents from five European nations, who had been surveyed with a non-obtrusive tool for their ordinary and non-structured experiences of cross-border contact. Hence, we found some evidence that, in real-world settings, the disproportionately stronger influence of negative contact may be significantly attenuated by the disproportionate larger frequency of the less influential positive contact.

Combining the relative frequency and influence of positive and negative contact in one study design enabled us to reconcile contradictory outlooks of intergroup contact. In light of our findings, we believe it is legitimate to infer that past studies subsumed in Pettigrew and Tropp's (2006) meta-analysis captured the relative greater prevalence of positive contact in naturalistic settings and its modest effects on outgroup attitudes. We corroborated findings of this line of research by

showing that the beneficial effects of positive contact are relatively *widespread*, although not as strong in size as the effects of negative contact. At the same time, we validated the findings of research by Barlow, Paolini and colleagues (Barlow et al., 2012; Paolini et al., 2010; Paolini et al., in press) by demonstrating that negative contact is more consequential for intergroup relations also outside the psychology laboratory, in everyday intergroup encounters in real-world settings. Below, we discuss the wider implications of our findings for theory and interventions in more details.

Ecological Evidence for the Prevalence of Positive Contact

Reports of positive contact experiences in our data markedly outweighed reports of negative contact experiences. When contrasting only positive and negative experiences, positive contact was four times more frequent than negative contact. When extending our focus to include also non-evaluative accounts of contact, positive contact was still twice as frequent as negative contact. Because this pattern held across different coding approaches (uni-dimensional/bi-dimensional), contact framings (person/situation) and nationalities (Austria, the Czech Republic, Germany, Poland and Slovakia), our data offer a solid basis to conclude that positive contact experiences may be disproportionately represented in many peaceful real social settings.

While our results are in line with earlier reports of relative prevalence of positive contact (Aberson & Gaffney, 2009; Barlow et al., 2012; Dhont & Van Hiel, 2009; Pettigrew, 2008), it is key to appreciate that they surpass them all in ecological validity due to the wider range of experiences our unobtrusive measurement tool sampled. For example, a study by Pettigrew (2008), examining autochthon contact with immigrants in Germany, found that more than two thirds

of their participants reported having had interesting conversations with or being helped by a foreigner; however, only one third reported being pestered by a foreigner. Aberson and Gaffney (2009) found a similar pattern of results with a slightly wider range of positivity and negativity behavioral markers (e.g., inquiring about close, equal, intimate contact vs. insulting, harassing, ridiculing or intimidating). Yet, participants' reporting was still constrained to several but a finite number of behaviors, which may be relatively extreme, unrepresentative, or uncommon in everyday encounters. Our prevalence estimates, by being drawn from a free-recall method, were instead completely unconstrained and free to sample from *all* types of experiences and behavioral markers.

Our approach is also superior to previous measures surveying participants' frequency of positive and negative experiences with broad but still direct closed-ended questions (e.g., "On average, how frequently do you have positive/good vs. negative/bad contact with *the outgroup*?"; Study 2 of Barlow et al., 2012; Study 2 of Dhont & Van Hiel, 2009). Critically, the method we used was free from valence probes and allowed us to sample also non-evaluative appraisals of past contact, thus extending further the breadth and ecological validity of our analysis of contact experiences. Ancillary analyses confirmed that our results were unaffected by social desirability concerns—at least as assessed by our indirect proxies drawn from the Big 5—and, thus, were more likely than previous results, to reflect unbiased estimates of contact valence. However, future research should employ more direct and validated measures of social desirability to corroborate our findings.

While the multi-sample/multi-setting nature of our data increases the confidence in the generalizability of our prevalence findings, a few important

caveats are in order. First, we are far from arguing that positive contact pervades *all* intergroup settings. Rather, we expect this prevalence of positive contact to reasonably extend to similar, relatively peaceful and non-segregated contexts that offer—like the settings we investigated here—plenty of opportunities for face-to-face, unstructured, daily exchanges. Conflict-ridden settings, obviously, continue to exist; here the detrimental effects of negative contact, instead of being *attenuated* by the greater prevalence of *positive* contact, are most likely further *compounded* by the relatively higher prevalence of *negative* contact (e.g., Dhont, Cornelis, & Van Hiel, 2010). Prevalence findings are also likely moderated by *type* of contact. For example, negative experiences with outgroups might again outnumber positive experiences in parasocial or televised contact (i.e., news about outgroup members disseminated through media) or in socially mediated or indirect forms of intergroup contact (e.g., gossips). Hence, both the type of contact and the ecology of particular intergroup relations need careful consideration.

New Evidence for Negative Contact's Stronger Influence on Outgroup Attitudes

When comparing strength of effects, we found that negative contact was a better predictor of outgroup attitudes than positive contact (see also Barlow et al, 2012; Dhont & Van Hiel, 2009). This valence asymmetry, as anticipated, was particularly pronounced in contact experiences framed around the contact person, rather than the contact situation.

This pattern of findings for contact prevalence is different from some of the extant data, but in a meaningful way. We have discussed already our methodological objections to Pettigrew's (2008) operationalization of contact valence; these objections obviously extend to his results for the contact valence-attitude link. More

interestingly, Stark et al. (2013) recently reported coefficients of equivalent magnitude for the longitudinal effects of positive and negative attitudes towards classmates of different ethnicities on the attitudes towards the ethnic groups. In institutionalized settings, because contact is carefully structured and monitored by sanctioning authorities, it is not surprising that negative contact does not reach the strength and connotations of negative contact as it is or can be experienced in unstructured and uncontrolled settings (see similar findings in a meta-analysis of laboratory data, Paolini et al., 2014). Independent data by Bekhuis, Ruiter, and Coenders (2013) support this interpretation. In this study, Dutch youngsters' experiences with minority individuals were once again surveyed, however, this time, in several social settings that varied in degree of structuring, monitoring, and sanctioning by authorities (e.g., the classroom vs. the neighborhood). As in Stark et al., Bekhuis and colleagues found that positive and negative contact had equal effects on ethnic distance in the highly structured, monitored and sanctioned context of the classroom; in line with our findings, they found that negative (vs. positive) contact was more influential in the unstructured and unregulated neighborhood setting.

Overall, these meaningful variations in the relative prominence of positive vs. negative experiences with the outgroup as a function of key contact features—e.g., structured-unstructured, intimate-casual, etc.—further emphasize the need to pay close attention to the ecology of different types of intergroup encounters.

Novel Evidence of Person-Based and Situation-Based Generalizations

A secondary goal of our research was to highlight and spell out two distinct sources of influence on outgroup attitudes: The valence framed around contact situation and contact person. While

previous intergroup research has focused on the characteristics of the outgroup interaction partners (Brown & Hewstone, 2005; Hewstone & Brown, 1986; Stark et al., 2013), in our study, we advanced the possibility and found some preliminary evidence that situation-framed valence *uniquely* contributes to outgroup attitudes during intergroup encounters. While person-framed (vs. situation-framed) valence proved to be a stronger predictor of outgroup attitudes when we contrasted exclusively positive with exclusively negative experiences, situation valence predicted outgroup attitudes *over* and *above* the effect of person valence when we included non-evaluative contact descriptions in the mix. This means that more precise predictions about the effects of intergroup contact can be achieved by taking into account the characteristics and behaviors of the contact partners *and* the characteristics and appraisals of the contact context more broadly.

Interestingly, the person vs. situation framing significantly moderated the valence asymmetries in prominence we discussed earlier. These asymmetries were less pronounced or absent altogether when intergroup contact was framed around the contact situation; as we had anticipated, they were most pronounced when valence appraisals were framed around the characteristics and behaviors of the contact partner. These findings are important as they suggest that it is not negativity *per se* to exert superior influence on attitudes (for an extensive discussion of valence asymmetries in other domains, see Baumeister et al., 2001) and to skew intergroup relations towards negativity. Rather, it is *a specific type* of negativity that is most dangerous and unduly detrimental for intergroup relations. It is the negativity that can be experienced as inherently and more stably associated with the outgroup that we need to fear the most (Hewstone, 1989; Pettigrew, 1979). Wilder and colleagues (1996) demonstrated the beneficial effects of *positive* stable and

dispositional qualities of contact partners. We believe we unraveled the negative flip side of this phenomenon.

Limitations and Directions for Future Research

Neither surveys nor field studies with cross-sectional designs can ascertain the direction of causality when considering the relation between intergroup contact and outgroup attitudes. Hence, as much as our participants' negative (vs. positive) contact experiences may have caused the worsening (vs. improving) of their outgroup attitudes, we cannot rule out the possibility that their outgroup attitudes caused them to selectively retrieve negative vs. positive past experiences with the outgroup. However, other studies have brought evidence for person-to-group transfers without group-to-person transfers (see e.g., Stark et al., 2013 for longitudinal evidence).

We employed open reports of intergroup contact experiences in order to avoid biased frequency estimates of participants' positive versus negative past experiences with outgroup members (for extensive discussions of common biases in frequency estimates, see Schwarz, 1999, 2007). Using these open reports, we expected participants to readily and accurately retrieve their most salient and typical experience with outgroup members (see e.g., Rothbart, Sriram, & Davis-Stitt, 1996 for consistent evidence), thus, allowing us to neatly compare the incidence of positive vs. negative experiences between-participants within the whole sample in a relatively unbiased manner. Yet open-ended reports of past experiences are subjected to their own memory and communication biases (see Schwarz, 2007). Hence, while the methodology employed in our study represents a novel approach, it is not intended to replace but rather complement traditional frequency estimate. Future studies should verify the prevalence of positive (versus negative) experiences with

alternative and possibly more accurate frequency estimates, such as those drawn from observational and diary methods (see e.g., Page-Gould, 2012; however, cf. Schwarz, 2007).

Additional limitations of our research were that our participant sample comprised of university students and our intergroup setting was relatively benign. Since we wanted to explore a rather underresearched area in the intergroup contact literature, we chose to start our investigation with a convenience sample. Furthermore, our sample contained a higher number of nationals from one country, although participants' nationality did not moderate any of the reported effects. Hence, our findings need to be further validated in different intergroup settings with more representative samples that allow for broader generalization.

Notwithstanding these limitations, our research has the merit of having unveiled a new source of influence on outgroup attitudes— situation-framed valence. Yet, the proportion of total variance in outgroup attitudes that we were able to explain was, in absolute terms, still small. Even when including all our four contact valence indices, only one tenth of the total variance in outgroup attitudes was accounted for. It is critical to draw attention to the fact that this low predictive power is not unique to our investigation; in fact, the amount of explained variance in outgroup attitudes we were able to isolate already surpasses the average amount (approximately 5%) explained by the average intergroup contact study, at least as included in Pettigrew and Tropp's (2006) extensive meta-analysis.

This large gulf of unexplained variance equates to a big challenge ahead of the intergroup contact researchers as they try to improve the precision of their predictions and the power of their explanations of the processes that take place during intergroup contact experiences. The present work points towards the fruitfulness of a simultaneous assessment of the frequency and the effects of positive and negative experiences, in different types of intergroup contact, and in different types of intergroup settings. This broader stance is likely to offer a more sophisticated and fuller understanding of the conditions that enhance and that inhibit the effects of contact on outgroup attitudes.

A broader challenge for scholars and practitioners is the translation of intergroup contact findings into real-world interventions that improve intergroup relations and reduce social inequality. Although intergroup contact has beneficial effects on improving outgroup attitudes, some scholars have recognized its implication in sustaining social inequalities (Dixon & Levine, 2012; Saguy, Tausch, Dovidio, & Pratto, 2009; Saguy & Chernyak-Hai, 2012). Namely, better outgroup attitudes by disadvantaged minority groups achieved through more intergroup contact with privileged groups come—at times—with minority individuals' inability to recognize and challenge the injustice that their group suffers. Under these circumstances, intergroup contact sustains paternalistic relations. Besides highlighting the more obvious detrimental effects of recalling negative contact experiences for outgroup attitudes, the textual data included in this article shed additional light on the less obvious detrimental effects of intergroup contact in the social context under investigation.

Language is an important marker of cross-national inequalities and status hierarchies in Central Europe. German is the language of wealthier and high status countries (i.e., Germany and Austria; see Brown & Haeger, 1999), and it is typically used in contact between people from Germanic and Slavic countries, independent of the place of encounter. Although people from the less affluent (i.e., Slavic) countries usually recognize their discrimination based on grounds of language use, another study in Central

European region found that respondents who had positive contact with the outgroup tended to downplay the challenges posed by the use of the other group's native language (Petrjánošová & Graf, 2012). For example, Czech participants, who reported positive experiences from intergroup contact with Germans or Austrians, were also those who recalled paternalistic communication patterns (e.g., praising Germans or Austrians for speaking German slowly with them or for not using their dialect but a standard form of German during contact with Czechs even in the Czech Republic). While the social consequences of this inability to recognize and react against language-based discrimination in central Europe might be less profound and far-reaching than in more closed and stratified systems, we suspect that these dynamics still operate to obstruct progress towards more egalitarian intergroup relations. Future research on the understudied topic of negative intergroup contact should go beyond its detrimental effects on outgroup attitudes and investigate its role in identifying and challenging social injustice. Because, as Dixon, Levine, Reicher and Durrheim (2012) aptly remarked, getting people to like one another more might not be the solution to tackle discrimination but rather a way to obstructing progress towards social justice in a fuller sense.

Concluding Remarks

We started this research endeavor with Baumeister and colleagues' (2001) conjecture that "good may prevail over bad by superior force of numbers" (p. 323); we returned empirical evidence that this may be more than a mere conjecture in intergroup settings. When assessing the ordinary and unstructured intergroup contact experiences of the people from five European countries, we found that *negative* experiences of contact, while *more influential* on intergroup attitudes than positive experiences, they were

relatively *infrequent* and uncommon in people's accounts of ordinary life accounts. On the contrary, the relatively less influential positive contact was a very common and widespread experience for our participants. This means that the greater prevalence of positive contact can possibly compensate for the greater prominence of negative contact and ultimately translate in modest but relatively stable net improvements in outgroup attitudes after contact.

These findings invite to a fuller understanding of intergroup contact effects through the simultaneous consideration of both relative frequency *and* relative strength of associations between positive *and* negative contact and outgroup attitudes. As such, not only they bridge and integrate together two distinct and prima face incompatible outlooks on the effect of positive and negative contact on outgroup attitudes (cf. Paolini et al., 2010; Pettigrew & Tropp, 2006), we believe they contribute to bring intergroup contact theory closer to the complexities and the ecology of the social reality that it tries to explain.

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Footnotes

1. The reason for the higher number of Czech participants was that the research originated in the Czech Republic and the data sampling was supported by the Czech Science Foundation. Hence, the research focused on the situation in Central Europe from the point of view of the Czech Republic. Furthermore, we were interested in mutual perceptions of two groups that meet in any given border region. As such, we sampled participants from four neighbouring countries together with Czech participants coming from four different border regions, resulting in larger Czech subsample.

2. The instructions mentioned both person and situation not to skew responses towards one mode of framing over another.

3. Positivity and negativity were not significantly correlated in either person-framing, $r(1276) = -.02$, $p = .42$, or situation-framing, $r(1276) = -.03$, $p = .22$; thus, justifying the use of a bi-dimensional approach.

4. As a check on the psychological significance of the intergroup settings under consideration, we compared

participants' ingroup and outgroup attitudes. Our data showed a clear presence of ingroup favouritism in four of the five countries (the Czech republic: $t(690) = 15.09$, $p < .001$; Germany: $t(131) = 6.98$, $p < .001$; Austria: $t(145) = 2.44$, $p = .02$; Poland: $t(133) = 0.12$, *n.s.*; Slovakia: $t(171) = 7.14$, $p < .001$).

5. In order to control for the possible influence of social desirability on the reporting of positive vs. negative contact experiences, we checked for the moderating influence of participants' tendency to self-characterise themselves as high versus low on socially desirable self-attributes: neuroticism, agreeableness and conscientiousness in the Big Five Markers Inventory (Hřebíčková et al., 2002). Previous research indicates that these personality dimensions are sensitive and implicit markers of individual differences in desirable responding (Borkenau & Ostendorf, 1989, 1992; Pauls & Stemmler, 2003; Stöber, 2001). Hence, after a median split of the three personality dimensions, we examined the distribution of positive and negative contact experiences. This ancillary analysis showed that the distribution of positive and negative experience did not differ depending on participants' self-rated neuroticism, agreeableness or conscientiousness (ps ≥ .10). The only difference in distribution was found for situation negativity, $\chi^2(1276) = 3.78$, $p = .05$: Participants who rated themselves high on conscientiousness listed slightly less negative evaluations of the contact situation than expected and the opposite was true for participants who rated themselves low on conscientiousness. This difference however disappeared when correcting the p-value for repeated tests. Altogether, these ancillary results assist us in ruling out social desirability influences on our prevalence findings.

6. We found limited evidence of cross-sample differences in contact experiences. Within the uni-dimensional coding, the only significant differences

were between Czechs and Poles in positive person valence (73%, 95% CIs [.68, .78] *vs.* 90%, [.83, .97], respectively; 78% in the overall sample) and between Czechs and Slovaks in positive situation valence (66%, 95% CIs [.59, .73] *vs.* 85%, [.77, .93], respectively; 71% in the overall sample); for all other 18 comparisons within the uni-dimensional coding, ps > .05. Within the bi-dimensional coding, the only significant differences were found between Germans and Slovaks on person positivity (69%, 95% CIs [.59, .79] *vs.* 43%, [.32, .54], respectively; 53% in the overall sample) and Czechs and Slovaks on situation positivity (36%, 95% CIs [.30, .42] *vs.* 54%, [.44, .64], respectively; 39% in the overall sample); for all other 38 comparisons within the bi-dimensional coding, ps > .05. Hence, the basic pattern of greater prevalence for positive vs. negative contact accounts held substantially invariant across the give national groups.

7. In simple linear regressions with a dummy-coded categorical predictor, the group means are derived in the following way: the mean of the outcome variable for the 0-coded group (positive contact in our uni-dimensional approach) equals to the constant or intercept; as such, the 0-coded group acts as the benchmark comparison group. The *b*-value of the 1-coded group is added to or subtracted from the constant (depending on the sign of *b*-value) to compute the mean for the 1-coded group (negative contact in our uni-dimensional coding).

8. We conducted a multi-group analysis in order to test the invariance of regression parameters across the five different countries. Using AMOS, we fixed the values of the standardized regression coefficients between nations. For both outcome variables, the fit indices of the model provided evidence for invariance across different countries (feeling thermometer: $\chi^2 = 35.96$, $df = 20$, $p = .016$, $\chi^2/df = 1.798$, $RMSEA = 0.050$, $pclose = 0.456$, *Hoelter .05* = 279; bad-

good item: χ^2 = 28.74, df = 20, p = .093, χ^2/df = 1.437, $RMSEA$ = 0.037, $pclose$ = 0.740, $Hoelter\ .05$ = 348).

9. The coefficients associated with the two uni-dimensional valence predictors remained substantially unchanged when controlling for the three proxies of social desirability – self-rated neuroticism, agreeableness and conscientiousness. Furthermore, none of the three proxies moderated the findings for association between contact valence framing indices and outgroup attitudes. The only isolated exception was a weak moderation by conscientiousness for the link between person valence and outgroup attitudes on the feeling thermometer, ΔR^2 = .01, $\Delta F(1, 667)$ = 4.92, p = .03, B = 1.53, $t(667)$ = 2.22. The Johnson-Neyman technique indicated that the negative effect of (negative) person valence (dummy coded with 0 for positive and 1 for negative) on outgroup feeling thermometer was stronger among those lower on self-conscientiousness than among those higher on self-conscientiousness.

10. When controlling for the three social desirability proxies, the coefficients associated with the four bi-dimensional valence predictors remained substantially unchanged. Furthermore, multi-group analysis testing the invariance of regression parameters across the five different countries again indicated generalizability of our findings in both models with different measures of outgroup attitudes (feeling thermometer: χ^2 = 76.30, df = 36, p = .001, χ^2/df = 2.121, $RMSEA$ = 0.030, $pclose$ = 1.0, $Hoelter\ .05$ = 853; bad-good item: χ^2 = 52.31, df = 36, p = .039, χ^2/df = 1.453, $RMSEA$ = 0.019, $pclose$ = 1.0, $Hoelter\ .05$ = 1243).

Tables

Table 1

Frequency of Positive and Negative Contact Experiences as Function of Person vs. Situation Framing

	n	$\%$	M (SD) Outgroup attitudes	
			Feeling thermometer	Bad-good item
Uni-dimensional Coding:				
1. Person valence – positive	527	78%	18.33 (6.15)	3.67 (0.69)
– negative	146	22%	14.04 (5.88)	3.25 (0.71)
2. Situation valence – positive	408	71%	18.76 (5.94)	3.69 (0.67)
– negative	168	29%	15.29 (6.59)	3.36 (0.76)
Bi-dimensional Coding:				
1. Person positivity – present	681	53%	17.88 (6.21)	3.63 (0.70)
– absent	595	47%	17.49 (6.22)	3.51 (0.75)
2. Person negativity – present	300	23%	15.22 (6.13)	3.38 (0.72)
– absent	976	77%	18.46 (6.04)	3.64 (0.72)
3. Situation positivity – present	503	39%	18.50 (6.07)	3.67 (0.68)
– absent	773	61%	17.18 (6.26)	3.51 (0.75)
4. Situation negativity – present	263	21%	16.05 (6.62)	3.43 (0.74)
– absent	1013	79%	18.13 (6.03)	3.61 (0.72)

Table 2

Linear Regression Models Contrasting the Effect of Positivity and Negativity in Person- and Situation-Framing of Contact on Outgroup Attitudes

	Feeling thermometer			Bad-good item		
	b	*SE*	β	*b*	*SE*	β
Constant	18.33	0.27		3.67	0.03	
Person valence	-4.29	0.57	-.28***	-0.43	0.07	-.24***
F	56.68***			42.62***		
R²	.08			.06		
	b	*SE*	β	*b*	*SE*	β
Constant	18.76	0.30		3.69	0.04	
Situation valence	-3.47	0.56	-.25***	-0.34	0.06	-.21***
F	38.12***			27.50***		
R²	.06			.05		
	b	*SE*	β	*b*	*SE*	β
Constant	18.85	0.42		3.79	0.05	
Person valence	-3.22	1.03	-.21**	-0.39	0.11	-.23***
Situation valence	-1.57	0.97	-.11	-0.20	0.11	-.13
F	15.13***			18.36***		
R²	.09			.10		

Notes. In both person- and situation-framed valence, positive contact was dummy-coded as 0 and negative contact as 1.Outgroup attitudes on feeling thermometer were measured with a 30-point scale and on bad-good item with a 5-point scale. Higher values indicate more positive attitudes.

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

Table 3
Multiple Regression Models Contrasting the Effect of the Presence and Absence of Positive and Negative Contact Framed with a Person and a Situation on Outgroup Attitudes

	Feeling thermometer			Bad-good item		
	b	*SE*	β	*b*	*SE*	β
Constant	18.29	0.27		3.57	0.03	
Person negativity	-3.23	0.40	-.22***	-0.25	0.05	-.15***
Person positivity	0.33	0.34	.03	0.12	0.04	.08**
F	33.19***			19.20***		
R²	.05			.03		
	b	*SE*	β	*b*	*SE*	β
Constant	17.62	0.24		3.55	0.03	
Situation negativity	-2.03	0.42	-.13***	-0.17	0.05	-.10***
Situation positivity	1.26	0.35	.10***	0.15	0.04	.10***
F	18.52***			13.20***		
R²	.03			.02		
	b	*SE*	β	*b*	*SE*	β
Constant	18.14	0.32		3.54	0.04	
Person negativity	-2.75	0.42	-.19***	-0.21	0.05	-.12***
Person positivity	0.17	0.34	.01	0.11	0.04	.07**
Situation negativity	-1.19	0.44	-.08**	-0.09	0.05	-.05
Situation positivity	0.93	0.35	.07**	0.12	0.04	.08**
F	20.27***			12.65***		
R²	.06			.04		

Notes. The presence of negative or positive contact was dummy-coded as 1 and the absence of negative or positive contact as 0. Outgroup attitudes on the feeling thermometer were measured with a 30-point scale and on bad-good item with a 5-point scale. Higher values indicate more positive attitudes.
*$p < .05$, **$p < .01$, ***$p < .001$.