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Research article

The relationship between acculturation preferences and prejudice: Longitudinal evidence from majority and minority groups in three European countries

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Abstract

A longitudinal field survey tested the reciprocal effects of acculturation preferences and prejudice among ethnic minorities and majorities. Data were collected at two points in time from 512 members of ethnic minorities and 1143 majority members in Germany, Belgium and England. Path analyses yielded not only the lagged effects of prejudice on acculturation preferences but also the reverse for both majority and minority members. The mutual longitudinal effects between prejudice and desire for culture maintenance were negative, and the mutual effects between prejudice and desire for culture adoption were positive for majority members. The reverse was the case for minority participants. Moreover, the two acculturation dimensions interacted in their effect on prejudice for majority participants but not for minority participants. The effect of desire for culture adoption on prejudice was moderated by perceived intergroup similarity. Theoretical and practical implications of the findings are discussed. Copyright © 2014 John Wiley & Sons, Ltd.

Most, if not all, countries around the globe have a demographic makeup that is ethnically or culturally heterogeneous—ethnic diversity is an inescapable fact in a globalized world. Unfortunately, negative interethnic attitudes are also rather common (Brown, 2010; Küpper, Wolf, & Zick, 2010). Moreover, minority members can favour one of several rather different approaches to managing their distinctiveness from the majority. For example, they might try to minimize or even eliminate their difference by emulating the majority members' way of life, aspiring to become majority members themselves. Or, they might uphold their ethnic or cultural difference, and try to protect their distinctiveness from cultural assimilation. Of course, majority members will also have preferences for how they would like minority members to conduct themselves within the broader society. An important question of both theoretical and applied urgency concerns the relationship between such attitudes and interethnic prejudice. Will those minority members who make certain acculturation choices manifest more prejudice against majority outgroup members as a consequence? Or will prejudice instead impact on acculturation choices? What is the nature of the relationships between these variables among majority members? These are some of the questions this paper will address.

These questions are of great societal relevance, because they can help shed light on the potential positive or negative

consequences of encouraging certain acculturation attitudes. Likewise, they might also show how acculturation choices might be limited by intergroup prejudice, thereby highlighting the importance of a positive intergroup climate. The questions are also of theoretical relevance because, even though acculturation and prejudice have been found to be linked (e.g. Zagefka & Brown, 2002), to date, there is no detailed understanding of the causal direction of these effects.

Psychological acculturation is a process of cultural change resulting from intergroup contact (Redfield, Linton, & Herskovits, 1936; Thurnwald, 1932). One of the most influential models of acculturation is that by Berry (1997). The model proposes that there are two underlying dimensions that characterize a person's overall attitude towards acculturation: the endorsement or rejection of the minority culture, and the desire for intergroup contact. These, when crossed, result in four distinct acculturation preferences: integration, assimilation, separation and marginalization. A preference for integration exists if minority members wish to maintain their original cultural identity and also wish to have contact with the majority group. Minority members favour assimilation if they prefer to abandon their original cultural identity while endorsing contact. If minority members want to maintain their original culture but do not want contact, they follow a strategy of separation. Finally, if minority members reject both their original culture and contact, this results in marginalization.

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Some versions of the model (e.g. Berry, 1997) cross the desire for culture maintenance with a desire for culture adoption rather than contact. However, a common denominator is that most studies stimulated by Berry's approach see the attitude towards the minority culture as independent from the attitude towards the majority culture: an approach attitude to one does not preclude an approach attitude towards the other. In this work, we will study culture maintenance and culture adoption, because like Bourhis, Moise, Perreault, and Senecal (1997), we feel that it is theoretically more consistent to measure the same construct in relation to both cultural groups.¹

While initially the acculturation model was conceptualized with minority members' acculturation preferences in mind, it was later acknowledged that, of course, members of the majority can also have preferences about how they would like minority members to live. They, too, might have preferences for minorities to pursue integration, assimilation, separation (sometimes called segregation) or marginalization (Arends-Toth & Van de Vijver, 2003; Berry, 1999; Piontkowski, Florack, Hoelker, & Obdrzalek, 2000; Van Oudenhoven & Hofstra, 2006; Zagefka, Brown, & Gonzalez, 2009). Accordingly, the present contribution will examine both minority and majority members' acculturation preferences.

Unfortunately, both minority and majority members might manifest prejudice against outgroups. Prejudice can be defined as negative beliefs, emotions or behavioural intentions regarding another person based on that person's membership in a social group (e.g. Brown, 2010). A number of correlational studies have found that prejudice and related concepts such as perceived discrimination are systematically related to acculturation preferences, among both minority and majority samples (Neto, 2002; Pfafferott & Brown, 2006; Piontkowski et al., 2000; Te Lindert, Korzilius, Van de Vijver, Kroon, & Arends-Toth, 2008; Zick, Wagner, van Dick, & Petzel, 2001). However, from these cross-correlational studies, it is unclear whether prejudice affects acculturation choices or vice versa.

Although some isolated experimental studies exist, these have typically focused on the relationship of people's perceptions of the respective outgroup's acculturation preferences on prejudice (e.g. Van Oudenhoven, Prins, & Buunk, 1998). Zagefka, Tip, González, Brown, and Cinnirella (2012) found that British majority members were keener to endorse integration when they perceived minority members also to favour this strategy, although this was only true for majority members low in prior prejudice. While interesting, these results say little about the implications of people's *own* preferences on prejudice levels. Zagefka et al.'s (2012) findings show that the effects of perceived acculturation preferences on own acculturation

preferences are moderated by prior prejudice. This is commensurate with the possibility that own acculturation preferences might also have a direct effect on prejudice and vice versa—these processes need not be mutually exclusive. These latter effects are what the present contribution will highlight.

Although experimentation is well placed for clarifying the causal direction of observed effects, some inferences about causality can also be made from longitudinal data. Indeed, various researchers have advocated the analysis of panel data (Bijleveld & van der Kamp, 1998; Cook & Campbell, 1979; Finkel, 1995) to help identify the direction of causal processes. A cross-lagged effect of variable A on variable B is established if A at time 1 is related to B at time 2 while B at time 1 is controlled for. For longitudinal survey data, this is generally considered to be the best method to demonstrate the necessary condition for causality (Cohen, Cohen, West, & Aiken, 2003; Finkel, 1995; Pettigrew, 1996).

To our knowledge, only two longitudinal studies have tried to address the effects of own acculturation preferences on prejudice and vice versa (Geschke, Mummendey, Kessler, & Funke, 2010; Zagefka et al., 2009). Zagefka and colleagues (2009), focusing on majority members' attitudes towards indigenous minority members in Chile, only found longitudinal, and therefore potentially causal, negative effects of a contact preference on negative intergroup attitudes. However, this work did not assess attitudes towards culture adoption, nor did it include a minority sample, and the size of the majority sample was notably smaller than that of the present sample. Geschke et al. (2010) did not consider minority but only majority members, and found bi-directional longitudinal effects of acculturation attitudes on intergroup attitudes and vice versa. The present contribution ascertains whether longitudinal effects might emerge when considering culture adoption instead of contact, when utilizing a considerably bigger sample, with the increased statistical power this affords, and when considering not only majority but also minority members. In sum, although there are various indications in the literature to date that acculturation and prejudice might be expected to be causally related, a detailed empirical test of this idea is still missing.

Theoretically, what might be expected about the mutual effects of prejudice and acculturation preferences? A total of eight main effects can be considered: the effect of culture maintenance on prejudice and vice versa and the effect of culture adoption on prejudice and vice versa, for each minority and majority members (see Figure 1 for a summary). Below, we will discuss each possible effect together with our expectations regarding its direction.

Effects of Prejudice on Acculturation

Regarding the expected effects of prejudice on culture maintenance, we expected prejudice to be positively related to culture maintenance desire for minority members and negatively for majority members. For minority members, negative attitudes towards the majority can be expected to lead to a move to seek 'cultural refuge' in the minority group that becomes the alternative group to provide minority members with a sense of identity and meaning (Baumeister & Leary, 1995; Branscombe, Schmitt, & Harvey, 1999; Tajfel & Turner, 1986). For majority members,

¹Of course, the question of whether to measure attitudes towards culture adoption or contact has been theorized elsewhere (e.g. Snauwaert, Soenens, Vanbeselaere, & Boen, 2003; and Tip et al., 2012). Moreover, not all measurement approaches actually do measure the two dimensions independently from each other (see, e.g., Bourhis, Barrette, El-Geledi, & Schmidt, 2009). While some scholars argue that expectations of contact engagement and expectations of host culture adoption cannot be considered as equivalent (Van Acker & Vanbeselaere, 2011), others suggest that more similarities than differences exist between the contact and the culture adoption frameworks (Matera, Stefanile, & Brown, 2012). This is an important debate, but the focal question of this contribution is not to weigh up the merits of one measurement approach against another. The focus was to assess the correlates of different acculturation preferences, using a reasonably economical measurement approach to fit the practical constraints of data collection in the present context.

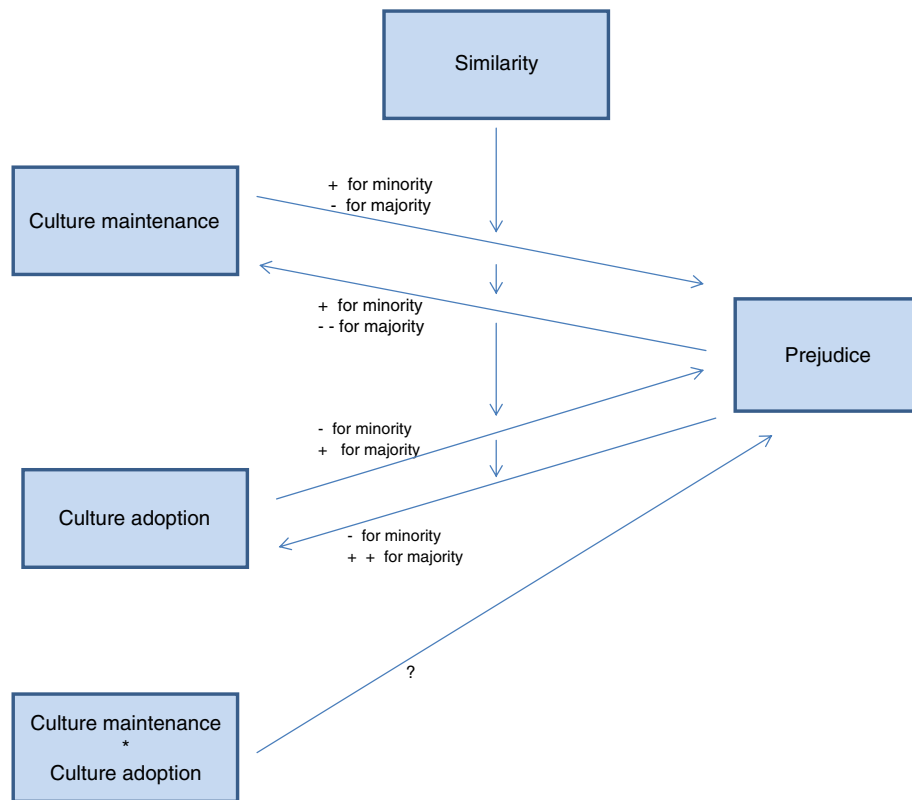


Figure 1. Hypothesized relationships between acculturation preferences and prejudice

negative attitudes towards minorities will imply a rejection of the minority culture and therefore less support for culture maintenance. Of course, it is also possible that prejudice against minority members will cause majority members to want minorities to leave the country rather than just reduce support for minority culture maintenance. We would contend that such processes might operate in parallel to the negative effect on culture maintenance we predict here, and do not contradict it. In this sense, prejudice-induced rejection of culture maintenance here *is* in some sense a request that minority members should absent themselves, by making them culturally—if not physically—disappear.

A mirror image of these effects can be expected when focusing on culture adoption. For minority members, prejudice will reduce the desire for culture adoption. People should not be motivated to emulate those they see in negative terms. For majority members, prejudice might instead increase the desire for culture adoption. The rationale for this hypothesis is derived from an interpretation of culture adoption as an attempt to dissolve the minority group by means of cultural colonialism. Similar to the argument just made, demanding culture adoption is equivalent to demanding cultural disappearance. As Zagefka, Nigbur, Gonzalez, and Tip (2013) have argued, prejudiced majority members are more likely to feel threatened by minority members (both in economic and symbolic terms), and because of this perceived threat, they might ironically be keener on minority members turning into majority members as a consequence. A natural reaction to threat is wanting to get rid of the source of the threat, and turning minority members into majority members might be a very effective way of eliminating the source of the threat.

Minority–Majority Differences

There is a crucial distinction in the focus of acculturation preferences that are typically elicited in minority and majority members. While minority members discuss choices concerning themselves, majority members make choices about others. Consequently, the effects of prejudice on acculturation might well be of different magnitude for the two groups (see Malle, Knobe, & Nelson, 2007). The rationale here is that for minority members, their acculturation choices are of existential importance. Hence, although they might be affected by prejudice, they should also be comparatively resistant to such intergroup forces and depend to a greater extent on internal motivations and inclinations—how they want to lead their lives, and how they want to manage their cultural difference, is likely to depend on other desires/views they have rather than just perceived prejudice.

In contrast, majority members' acculturation preferences do not have such dramatic effects on the majority members' own lives. For majority members, these are choices about what *other people* are expected to do; they are therefore somewhat removed from the self. It has been established that judgments, decisions and explanations of behaviours of others are more strongly affected by general theories such as prejudice, whereas judgments, decisions and explanations of behaviours of the self are more strongly affected by relevant evidence (Pronin & Gilovich, 2004). For these reasons, we would expect acculturation preferences to be much more sensitive to prejudice effects for majority members than for minority members. Another reason for expecting prejudice effects to be stronger for majority members is that for them (but not minority members), acculturation preferences and prejudice are both types of intergroup attitudes. They are conceptually

(and as will become clear, empirically) distinct, but they can nonetheless be expected to be related and potentially, following the arguments made in the literature on political ideology (e.g. Sibley & Duckitt, 2013), mutually reinforcing.

Effects of Acculturation on Prejudice

Focusing on the effects of culture maintenance on prejudice, one might expect culture maintenance to be positively related to prejudice for minority members but negatively for majority members. Minority members wanting to maintain their original culture should result in increased distinctiveness and thus mark them out as a potential target in an intergroup context. Further, cultural maintenance might often be interpreted as symbolic threat by majority members (Tip et al., 2012). It might be (potentially inaccurately) perceived as a rejection of the majority culture. As a result, minority members who cherish culture maintenance might be more at risk to experience rejection and negative reactions by majority members, which in turn might enhance prejudice levels among minority members exposed to such negative reactions. For majority members, on the other hand, a preference for minority members' maintaining their original culture might lead to reduced levels of prejudice. As outlined in Brown and Zagefka (2011), the endorsement of culture maintenance by the majority implies an acceptance of the minority group culture, and such a liberal outlook might well reinforce more tolerant intergroup attitudes. The idea that political attitudes might be mutually reinforcing is commonly accepted in the literature (e.g. Sibley & Duckitt, 2013), and we propose that similar mechanisms might be at play in the present context.

Regarding the effects of culture adoption on prejudice, again, a mirror image of the effects described earlier might be expected. For minority members, a desire for culture adoption might lead to less prejudice, because a demonstration of culture adoption will be positively perceived among majority members and will therefore be likely to lead to more pleasant intergroup encounters and ultimately reduce prejudice. More directly, because minority members wanting to adopt the majority culture implies an acceptance and positive attitude towards the cultural outgroup, such a positive disposition might well reinforce other more tolerant intergroup attitudes and therefore lower prejudice.

For majority members, a desire that minority members adopt the majority culture has a decidedly more negative taste and might even be interpreted as a form of cultural colonialism. Therefore, the outlook of majority members who demand that minority members become 'cultural converts' is likely to be located in the right of the political spectrum, and such views can be expected to be self-reinforcing and to be linked to more intergroup prejudice. Indeed, recent evidence supports the notion that a demand for culture adoption by majority members that is induced by perceived realistic or symbolic intergroup threat can result in prejudice (Zagefka et al., 2013). Moreover, minority members will find it hard to fulfil categorical requests for total culture adoption, because it will be difficult for them to drop, for example, their food preferences or accent completely overnight. Thus, a strong preference for culture adoption among majority members is likely to be frustrated, further perpetuating prejudiced attitudes. It should be noted that the effects of culture maintenance and culture adoption desire on prejudice are

thought to be independent from intergroup contact effects as previously tested (Binder et al., 2009), especially given that both acculturation dimensions focus on culture (maintenance or adoption) rather than contact desire.

Interaction Effects of Cultural Maintenance and Cultural Adoption

Having outlined these hypothesized main effects of culture maintenance and culture adoption on prejudice, it is also worth pondering if these two acculturation dimensions might interact in their effect on intergroup outcomes. Indeed, a popular idea in the acculturation literature is that the strategy of 'integration', which implies a positive attitude towards both culture adoption and culture maintenance, holds a somewhat special status and is associated with the most positive intergroup outcomes (Berry, 1997; Zagefka & Brown, 2002). Therefore, a further aim was to discover if the effects described earlier might be qualified in such a way that a combination of a positive attitude towards both culture maintenance and adoption might have particularly beneficial effects on reduced prejudice, as would be expected on the basis of the acculturation literature (Brown & Zagefka, 2011).

Similarity as a Moderator

The question of moderators has received comparatively little attention in the field of acculturation research (Brown & Zagefka, 2011). When it comes to relationships between acculturation preferences and prejudice, however, the question almost automatically arises whether relationship strength is dependent on additional characteristics of the intergroup setting. Research more specifically on intergroup bias has shown that the similarity among groups is an important determinant of ingroup favouritism (Roccas & Schwartz, 1993), intergroup competition (Brown & Abrams, 1986) and discrimination (Hornsey & Hogg, 2000). Consequently, a further aim in the present work was to test whether the effects of culture maintenance and culture adoption on prejudice are moderated by perceived intergroup similarity.

We expected the effects of desire for culture maintenance and desire for culture adoption on prejudice to be particularly pronounced under conditions of low perceived intergroup similarity. After all, if minority and majority members are perceived to be similar, attitudes towards maintaining a culture that is not very different and distinct from the majority culture should be less pertinent, contested and relevant. Likewise, if similarity is high, there will not be that much scope for culture adoption, and attitudes towards culture adoption should be less pressing and important. To put it simply, if intergroup similarity is low, there is more at stake, and people should care more about acculturation choices, and it is therefore reasonable to expect that effects of acculturation attitudes on prejudice will be stronger. That is not to say that all issues of acculturation will be resolved under high similarity. Indeed, Social Identity Theory (Tajfel & Turner, 1986) argues that a need for group distinctiveness will operate with highly similar groups. In the intercultural contexts of interest here, however, it seems unlikely that distinctiveness threats will be particularly potent, and we therefore expect less urgency for acculturation questions under high similarity.

These were the hypotheses that we tested using a sample of more than 1600 ethnic minority and majority members in three European countries, Belgium, England and Germany. To briefly sketch out the context of these three settings at the time of data collection, in Belgium, the predominant ethnic minorities are from North Africa, followed by Southern Europe, particularly Turkey (Direction générale statistique et information économique, 2004). In Germany, there is a particularly sizeable immigration from Turkey and other Southern European countries (Bundesamt für Migration und Flüchtlinge, 2006). In England, particularly salient groups are Asians of Indian, Bangladeshi and Pakistani descent; Afro-Caribbeans; Chinese; and Eastern Europeans (Office for National Statistics, 2005).

Although in all three countries the public discourse is such that racism and discrimination are not openly condoned except by those in the far right of the political spectrum, ethnic minorities in all three countries still have to fight against prejudices from the majority group. For example, a large-scale survey in the UK in 2005 revealed that over one third of respondents viewed multiculturalism as a threat rather than something that has improved British society (BBC, 2005). Prejudice is also an issue in Germany, particularly in the East (Wagner, van Dick, Pettigrew, & Christ, 2003). This is no different in Belgium, where the European Commission against Racism and Intolerance in 2009 expressed its concern over racist, Islamophobic and xenophobic discourses in both political and public life, and identified Muslim and Jewish communities, travellers, refugees and asylum seekers as vulnerable groups (<http://www.minorityrights.org/?lid=1507>).

METHOD

Sample

The samples from Belgium, Germany and England are identical with those reported to test the contact hypothesis in Binder et al. (2009). Although the same participants were used in this present paper, crucially, the research question and several of the important measures utilized are different from the previous publication. While previously we were concerned with the effects of contact on prejudice, here, we are interested in the mutual relationship between acculturation strategies (i.e. culture maintenance and culture adoption preferences) and prejudice. Moreover, the moderators highlighted in the two contributions are different. The initial sample in the first wave of data collection comprised 3667 participants—1034 in Belgium, 1124 in England and 1509 in Germany.

For 1655 of the 3667 participants, data were obtained at a second point in time. The overall percentages for female, male and unspecified were 48.5%, 50.7% and 0.8%. Of the 1655 longitudinal participants, 512 were members of ethnic minorities and 1143 were members of ethnic majorities. More specifically, in Belgium, there were 210 minority and 404 majority members; in England, there were 101 minority and 255 majority members; and in Germany, there were 201 minority and 484 majority members.

Participants were asked to indicate their ethnic group membership. The five biggest groups in Belgium were Italians, followed by Moroccans, Africans, Turks and Poles. In England, the five biggest groups were Bangladeshis, Africans, Afro-Caribbeans,

Pakistanis and Indians. In Germany, the biggest groups were Turks, resettlers from Eastern Europe and Russia (Aussiedler), Poles, Italians, and Serbians/Montenegrans. This indicates that minority samples were overall in line with population demographics as outlined earlier.

Materials and Procedure

Both waves of data collection took place at secondary schools, with an average of 6 months between waves. Research assistants distributed questionnaires in classes during school time. Here, the wording of the English questionnaire is given. The questionnaires in Germany were in German, and the questionnaires in Belgium were in French (only French speakers participated in the study). Instead of 'Belgium/England/Germany', the relevant country was used. Questionnaires included one section for majority members and one section for minority members, and participants chose themselves which section was applicable to them. They then filled out the section of their choice. The item order was identical in both sections. The participants' membership in an ethnic minority or majority was assessed at the beginning. Respondents were asked to decide between two options, one being 'My family has always lived in Belgium/England/Germany and I feel mainly "native"', and the other 'My family came to Belgium/England/Germany from another country and I am not a "native Belgian/white English/German".' Depending on their choice, they were then directed to the minority or majority part of the questionnaire.

A definition of ethnic minority members was then given. For minority members, the opening sentence was 'These are the questions for people who said that their family came to Belgium/England/Germany from another country and they are not "native Belgian/white English/German".' For majority members, the wording was 'These are the questions for people who said that their family has always lived in Belgium/England/Germany and they feel mainly "native".' The next paragraph was identical for both versions: 'People whose family came to Belgium/England/Germany from another country and who are not "native Belgian/white English/German" are sometimes called ethnic minority members. However, there are lots of different ethnic minority groups. For example, Pakistanis are an ethnic minority group, and Turks are another ethnic minority group.' The closing sentences of this introduction were 'Of course you yourself belong to an ethnic minority group also' for the minority part and 'Of course you yourself belong to the group of "native Belgians/white English/Germans"' for the majority part. Respondents were then asked to identify their own specific ethnic group. They were given a list of examples (e.g. Turks and Moroccans) but were also able to write down groups not explicitly listed.

In the contexts of the study, minorities and majorities do not necessarily differ by skin colour. This is why we used immigration background as the main defining feature for ethnic minority or majority status. However, Britain is to some extent a special case because 'British' identity is often understood to incorporate different ethnic and national groups, both with (e.g. British Indian) and without (e.g. Welsh) migration background. In correspondence to our focus in the other countries of assessment, we chose the label 'white English',

which ensured that ethnic minorities were delineated from a majority group that was defined in exclusivist terms.

Measures

For all items, 5-point rating scales were used. Reliabilities were computed for the whole sample of 1655 matched participants. The subsamples did not show markedly different scale reliabilities. Here, the wording for the English questionnaire is given, but obviously where necessary, the wording was adapted to the different national contexts (e.g. German participants were asked if they wanted members of their group to speak German rather than English).

Culture maintenance and adoption

The measures were based on items by Zagefka and Brown (2002). Two items measured desire for culture maintenance: 'I think it would be good if members of (my group/ethnic minorities) spoke (our/their) original language often', and 'I think it would be good if members of (my group/ethnic minorities) kept as much as possible (our/their) culture of origin and way of living' (Cronbach's $\alpha = .74$ at time 1 and $\alpha = .77$ at time 2; test-retest $r = .66$). Two items measured desire for culture adoption: 'I think it would be good if members of (my group/ethnic minorities) spoke English often', and 'I think it would be good if members of (my group/ethnic minorities) took on as much as possible the English culture and way of living' ($\alpha = .62$ at time 1 and $\alpha = .63$ at time 2; test-retest $r = .61$).

Prejudice

Past research has identified various components of prejudice, including an affective component and a behavioural intention component such as desire for social distance (Bogardus, 1933; Park, 1925; Pettigrew & Meertens, 1995; Vanneman & Pettigrew, 1972; Weaver, 2008). Accordingly, we had six items to assess negative intergroup emotions and five items to measure desire for social distance. Regarding emotions, the introductory question was 'In general, what are your feelings toward the [outgroup]?', followed by a list of three positive and three negative feelings ('Do you admire them?', '...trust them?', '...like them?', '...feel angry toward them?', '...feel irritated by them?' and '...feel annoyed by them?'). Positive values were reversed so that higher values indicate more negative emotions. Regarding social distance, participants were asked how much they would like or would be bothered by having outgroup classmates, teachers, neighbours, house guests or in-laws.

The 11 items were combined into one overall scale of prejudice ($\alpha = .88$ and $.88$ at time 1 and time 2, respectively, test-retest $r = .74$). Although it might be desirable to analyse different facets of prejudice in some settings, in this context, we considered an overall index to be more useful, because of our focus on the bi-directional mutual relationships between acculturation and prejudice and our consequent need to be able to include prejudice as both a predictor and an outcome variable in longitudinal analyses. Moreover, given that the affective and behavioural aspects of prejudice can be expected to be highly related, entering them simultaneously in a regression analysis would likely cause multicollinearity problems.

We therefore combined the facets into one overall prejudice index. Indeed, the psychometric properties of the scale indicate that this was a sensible move, because negative emotions and social distance were correlated at time 1 ($r = .57, p < .001$) and time 2 ($r = .62, p < .001$), and the magnitude of these associations was such that it was comparable with the stability of negative emotions ($r = .62, p < .001$) and social distance ($r = .75, p < .001$). Moreover, the overall prejudice index also showed a slightly better reliability than the separate scales for the two facets.

Similarity

Perceived intergroup similarity was measured with a direct one-item measure with high face validity, with higher values corresponding to higher similarity: 'How similar is your group to the white English' (for minority participants) and 'How similar are the white English to ethnic minorities' (for majority participants), test-retest $r = .40$.

RESULTS

The results are presented in three sections. After some preliminary analyses, we investigate the direction and size of cross-lagged effects from prejudice to acculturation preferences and vice versa. Then, the potential moderating effects of similarity are tested.

Preliminary Analyses

Checking for Selective Attrition

As in Binder et al. (2009), an ANOVA was computed using a 2 (matched participants across the two waves vs unmatched participants) * 2 (majority vs minority) * 3 (Belgium vs England vs Germany) design. All time 1 variables relevant for the present investigation were entered as dependent variables. No main effect or interactions involving the matching factor emerged that yielded a $\eta^2 > .006$, indicating that differences were negligible. Further, the average difference between matched and unmatched participants in bi-variate correlations between all variables was much smaller ($M(\Delta|r|) = 0.06$) than the average bi-variate correlation for unmatched ($M(|r|) = 0.21$) or matched ($M(|r|) = 0.27$) participants, again indicating that selective attrition is unlikely to have influenced the results.

Mean Scores and Correlations

Intercorrelations for all variables, separately for the minority and majority sample, are presented in Table 1. The pattern of coefficients was very similar in both waves.

Means and standard deviations for all variables are presented in Table 2. To check for differences between majority and minority groups and changes over time, 2 * 2 (majority vs minority; time 1 vs time 2) ANOVAs with repeated measures on the time factor were performed on all variables. The two factors did not interact significantly in any of the analyses. Time significantly affected two of the variables, but both effect sizes were small ($F(1, 1648) = 15.37, p < .001, \eta^2 = .009$ for prejudice; $F(1, 1630) = 7.63, p < .01, \eta^2 = .005$ for culture

Table 1. Bi-variate correlations

	Culture adoption preference	Prejudice	Similarity
<i>Majority sample</i>			
Culture maintenance preference	-.53*** -.54***	-.54*** -.57***	.33*** .38***
Culture adoption preference		.44*** .45***	-.30*** -.30***
Prejudice			-.53*** -.54***
<i>Minority sample</i>			
Culture maintenance preference	-.12** -.10*	.15*** .15***	-.13** -.07
Culture adoption preference		-.35*** -.37***	.26*** .33***
Prejudice			-.36*** -.38***

Note: The first correlation refers to time 1, and the second correlation refers to time 2. * $p < .05$; ** $p < .01$; *** $p < .001$.

adoption). This indicates that there was somewhat more prejudice and somewhat less endorsement of culture adoption at time 2 compared with time 1. Group status affected all four variables: culture maintenance, $F(1, 1633) = 553.09$, $p < .001$, $\eta^2 = .25$; culture adoption, $F(1, 1630) = 300.46$, $p < .001$, $\eta^2 = .16$; prejudice, $F(1, 1648) = 7.44$, $p < .01$, $\eta^2 = .004$; and similarity, $F(1, 1564) = 39.28$, $p < .001$, $\eta^2 = .03$. Minority members showed more desire for culture maintenance but less desire for culture adoption, slightly less prejudice, and less perceived similarity.

Cross-lagged Effects

Differences between Minority and Majority on Lagged Effects

It was hypothesized that the longitudinal effects of acculturation preferences on prejudice and vice versa would differ between the minority and majority groups to the extent that even the valence of the effects would be different. To test this, and to justify subsequently conducting separate analyses for the two groups, a series of regression equations was estimated. In all analyses, the respective dependent variable at time 2 was predicted by the respective independent variables at time 1, and group status (minority vs majority) was also entered as a predictor in the equation. In all models, the dependent variable at time 1 was controlled for (Cook & Campbell, 1979; Finkel, 1995).

To test moderation by group status of the effect of acculturation on prejudice, prejudice at time 2 was predicted from

prejudice at time 1, culture maintenance preference time 1, culture adoption preference time 1 and group status. The two-way interactions between status and the two focal independent variables culture maintenance and culture adoption were entered in a second step in the hierarchical regression analysis. Crucially, status interacted significantly with culture maintenance, $\beta = -.15$, $p < .05$, and with culture adoption, $\beta = .19$, $p < .05$.

To test moderation by group status of the effect of prejudice on culture maintenance, culture maintenance preference time 2 was predicted from culture maintenance preference time 1, prejudice at time 1, group status, and the interaction between prejudice and status that was entered in a second step. The interaction was again significant, $\beta = -.15$, $p < .01$.

To test moderation by group status of the effect of prejudice on culture adoption, culture adoption preference time 2 was predicted from culture adoption preference time 1, prejudice at time 1, group status and the interaction. The interaction was again significant, $\beta = .19$, $p < .05$. Overall, results suggest that the lagged effects of acculturation preferences on prejudice and vice versa are substantially different for minority and majority members. Hence, analyses were conducted for the two groups separately in the following.

Effects of Acculturation on Prejudice and Vice Versa

To test whether prejudice would longitudinally and therefore potentially causally predict acculturation preferences and vice versa, several regression analyses were conducted. In all analyses, the respective dependent variable at time 2 was predicted by the respective independent variable at time 1, and the dependent variable at time 1 was controlled for. To test for potential interactions between the two acculturation dimensions when predicting prejudice, their interaction was entered in a second step in hierarchical regression. In all models involving interactions between continuous variables, the predictors were centred on the mean. Effects of prejudice on acculturation preferences are summarized in Table 3. Effects of acculturation preferences on prejudice are summarized in Table 4.

In line with the hypotheses, we found effects of prejudice on acculturation preferences (Table 3). As predicted, among majority members, prejudice longitudinally induced a reduction in culture maintenance desire and an increase in culture adoption preference. For minority members, prejudice did not have any lagged effects on culture maintenance preference, but it did have a negative effect on culture adoption preference. As anticipated, the valences of the effects of prejudice on acculturation preferences were exactly opposite for minority and majority members. Moreover, an inspection of the beta weights and lack of overlap in the confidence intervals for minority and majority members when focusing on the same

Table 2. Means (and standard deviations) for all measures

	Culture maintenance preference		Culture adoption preference		Prejudice		Similarity	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Majority	2.57 (1.08)	2.57 (1.06)	3.83 (0.91)	3.75 (0.91)	2.58 (0.87)	2.66 (0.90)	2.77 (1.06)	2.75 (1.05)
Minority	3.74 (1.06)	3.76 (1.04)	3.05 (1.02)	3.00 (0.98)	2.48 (0.71)	2.53 (0.69)	2.45 (1.23)	2.41 (1.14)

Note: Standard deviations in parentheses.

Table 3. Lagged effects of prejudice on acculturation preferences

DV time 2	R ²	Predictors	
		DV time 1	Prejudice
<i>Majority sample</i>			
Culture maintenance preference	.41***	.45***	-.27*** (-.39; -.27)
Culture adoption preference	.33***	.45***	.21*** (.16; .27)
<i>Minority sample</i>			
Culture maintenance preference	.25***	.49***	.05 (-.04; .18)
Culture adoption preference	.33***	.54***	-.09* (-.22; -.01)

Note: DV, dependent variable. Standardized regression coefficients are given. Numbers in parentheses refer to lower and upper bounds for the 95% confidence intervals of the unstandardized coefficients. **p* < .05; ***p* < .01; ****p* < .001.

Table 4. Lagged effects of acculturation preferences on prejudice

R ²	DV time 1	Predictors		
		Culture maintenance (CM) preference time 1	Culture adoption (CA) preference time 1	Interaction CM * CA
<i>Majority sample</i>				
.66***	.76***	-.05* (-.07; -.001)	.06** (.02; .10)	-.03*
<i>Minority sample</i>				
.40***	.59***	.07* (-.09; .008)	-.06* (-.02; .06)	.03

Note: DV, dependent variable. Standardized regression coefficients are given. Numbers in parentheses refer to lower and upper bounds for the 95% confidence intervals of the unstandardized coefficients. **p* < .09; ***p* < .05; ****p* < .01; *****p* < .001.

effects revealed that—as expected—the effects were notably stronger among the majority sample than the minority sample. This is in line with what we expected because of the discrepancies between minority and majority.

As predicted, we also found lagged *effects of acculturation preferences on prejudice* (Table 4). However, these were only marginally significant among the minority sample, while they reached significance in the majority sample. All effects were in the expected direction, with the effect of culture maintenance on prejudice being negative for majorities and positive for minorities, and the effect of culture adoption being positive for majorities and negative for minorities.²

No difference in the effect magnitude had been expected between the two groups, and indeed, an inspection of the beta weights and overlap in confidence intervals confirmed that the

²Despite the theoretical reasons to combine negative emotions and social distance into one overall index of prejudice, additional analyses were carried out to ascertain if the same patterns hold for acculturation on prejudice effects and prejudice on acculturation effects of these two components are analysed separately. This was indeed the case. The magnitudes of effects using the separate indices were very close to the magnitudes reported in Tables 3 and 4.

effects were of comparable strengths. However, they reached significance in the majority sample, probably because of the larger sample size of this group.

Along the same lines, the two acculturation dimensions interacted significantly when predicting prejudice among majority members but not among minority members. Simple slopes showed that the effect of culture maintenance on prejudice was more pronounced when culture adoption desire was high rather than low, $\beta = -.41, p < .001$ vs $\beta = -.34, p < .001$. Translating this pattern back into Berry's (1997) fourfold schema, one could argue that those participants who are low on culture adoption fall in either the separation or marginalization condition, whereas those high on culture adoption are either assimilationists or integrationists. Among the latter two, the augmenting effect of supporting culture maintenance on prejudice was particularly strong. Put differently, the pattern suggests that prejudice reduction was strongest for those majority members who were high on both culture adoption and culture maintenance; that is, those who do indeed—as acculturation theory would predict—fall into the integration category.³

Finally, although a cautionary note should be added because the analyses in Tables 3 and 4 are not mirror images of each other (with Table 4 having two focal predictors and Table 3 just one), an inspection of the overlap between confidence intervals allows some preliminary conclusions about the respective strengths of the effects of prejudice on acculturation and vice versa. Interpreted this way, it seems that for majority members, the effects of prejudice on acculturation are stronger than vice versa, whereas for minority members, the effects are not only notably weaker than for majority members, but both directions seem to be of roughly equal magnitude.⁴

Lagged Effects Still Hold when Controlling for Contact

Additional analyses were carried out to ascertain that the findings reported in the present paper are theoretically and empirically distinct from the results reported in Binder et al. (2009). The focus of this previous publication was the relationship between contact and prejudice, while the focus of this present paper is the relationship between acculturation preferences and prejudice. Although in this present paper acculturation was operationalized in terms of culture adoption and culture maintenance rather than contact desire as is sometimes the case in the acculturation literature, we felt that it is nonetheless important to demonstrate that the mechanisms proposed here operate independently of any effects yielded by contact.

³There is debate in the literature as to how acculturation preferences should be conceptualized: Should the classification criterion be an individual's score relative to the scale median or to the scale midpoint? Here, we use the scale median. This is because we are not interested in a numerical count of people who fall in each of Berry's four quadrants but in causal processes relating a stronger or weaker preference for culture maintenance/adoption to other outcome variables. In this sense, the prejudice reduction among majority members was strongest not for those who were 'integrationists' in absolute terms but for those who tended to be more towards the 'integrationist' profile than other participants in the sample.

⁴'Country' was not used as a control variable in the analyses presented in Tables 3 and 4. However, we also tested for difference of acculturation and prejudice effects between countries using dummy-coded variables and their interaction with acculturation preferences and prejudice as additional predictors in regression analyses for all analyses presented in Tables 3 and 4. None of the interactions were significant, indicating that the hypothesized effects did not differ between countries.

To this end, the analyses reported in Tables 3 and 4 were replicated, but this time, contact was included as an additional predictor in the analyses. Following the format of the analyses in Binder et al. (2009), we included either contact quantity or contact quality (using the same indices as in the previous publication). The aim of this was to ascertain that the effects reported in the present paper would not be substantially reduced when contact is controlled for. Although it was particularly important to demonstrate that the effects of acculturation on prejudice still stand when controlling for contact (Table 4), for symmetry reasons, we also tested the effects of prejudice on acculturation when controlling for contact (Table 3).

Focusing first on the results reported in Table 3, the effect of prejudice on cultural maintenance preference for majority members was $\beta = -.28, p < .001$ when controlling for contact quantity and $\beta = -.27, p < .001$ when controlling for contact quality (compared with $\beta = -.27, p < .001$ when not controlling for contact; Table 3). The effect of prejudice on culture adoption for majority members was $\beta = .22, p < .001$ when controlling for contact quantity and $\beta = .21, p < .001$ when controlling for contact quality (compared with $\beta = .21, p < .001$ when not controlling for contact). The effect of prejudice on cultural maintenance preference for minority members was $\beta = .07$ when controlling for contact quantity and $\beta = .06$ when controlling for contact quality (compared with $\beta = .05$ when not controlling for contact). The effect of prejudice on culture adoption for minority members was $\beta = -.09, p < .05$ when controlling for contact quantity and $\beta = -.08, p < .09$ when controlling for contact quality (compared with $\beta = -.09, p < .05$ when not controlling for contact). Overall, the effects of prejudice on acculturation preferences were not substantially altered by controlling for contact.

Focusing next on Table 4, for the majority sample, the effect of culture maintenance on prejudice remained at $\beta = -.05, p < .05$ when controlling for contact quantity and moved to $\beta = -.03$ when controlling for contact quality. The effect of culture adoption on prejudice changed from $\beta = .06, p < .01$ to $\beta = .07, p < .01$ when controlling for contact quantity and to $\beta = .07, p < .01$ when controlling for contact quality. The interaction between maintenance and adoption, formerly $\beta = -.03, p < .05$, remained at $\beta = -.03$ no matter whether we controlled for contact quality or quantity. For the minority sample, the effect of culture maintenance on prejudice remained at $\beta = .07$ no matter whether we controlled for contact quantity or quality. The effect of culture adoption on prejudice remained at $\beta = -.06$ no matter whether we controlled for contact quantity or quality. The interaction between maintenance and adoption, formerly $\beta = .03$, remained nonsignificant no matter whether we controlled for contact quantity or quality. Overall, it can be concluded that the effects of prejudice on acculturation, and of acculturation on prejudice, remain stable when controlling for contact and that the results reported in the present paper are therefore theoretically as well as empirically distinct from those reported in Binder et al. (2009).

Moderation of Longitudinal Effects on Prejudice by Similarity

To test if the effects of acculturation preferences on prejudice are moderated by perceived intergroup similarity, this variable (operationalized as the mean of the time 1 and time 2 measure) was entered as an additional predictor when regressing

prejudice on culture maintenance and culture adoption, and the interactions between similarity and culture maintenance and between similarity and culture adoption were entered in a second step.

For the minority sample, similarity did not interact significantly with culture maintenance, but it did interact significantly with culture adoption, $\beta = .08, p < .05$. The same pattern held for the majority sample, where the interaction with culture maintenance was nonsignificant, but the interaction with culture adoption reached significance, $\beta = -.06, p < .01$.

Simple slopes showed that as expected effects were somewhat stronger when perceived similarity was low: the effect of culture adoption on prejudice for minority members was $\beta = -.26, p < .001$ compared with $\beta = -.19, p < .01$, and the same effect for majority members manifested at $\beta = .39, p < .001$ vs $\beta = .30, p < .001$.

DISCUSSION

Results supported the predictions that acculturation preferences and prejudice are bi-directionally related. Prejudice decreased culture maintenance desire and increased culture adoption desire for majority members. As expected, the valence of the effects was the opposite for minority members (although the effect on culture maintenance did not reach significance for this sample). In line with expectations, prejudice effects were notably stronger for majority participants than for minority participants. The effects of prejudice levels on acculturation preferences among the majority sample were in fact stronger than any other observed effects.

Having said this, acculturation preferences also had lagged effects on prejudice, in the form of a negative effect of culture maintenance and a positive effect of culture adoption for majority members, and again effects of the opposite valence for minority members (although acculturation effects only reached marginal significance for this sample). Moreover, there was evidence that the two acculturation dimensions interact in their effect on prejudice such that the most positive outcomes were observed for those aligned with a preference for integration. However, again, this pattern only reached significance for majority but not minority participants. Further, lagged effects were independent of intergroup contact. This not only distinguishes the present work from previous analyses of the data (Binder et al., 2009); it also indicates an important theoretical distinction from work that has equated or replaced culture adoption with desire for intergroup contact.

Last but not the least, the effects of desire for culture adoption (but not culture maintenance) on prejudice were qualified by perceived intergroup similarity in both samples, such that stronger effects were observed when perceived similarity was low (although a 1-item measure of similarity was less than ideal, an issue that could be addressed in future research). These findings were obtained from an unusually large, two-panel sample from three different countries.

This work presents a theory-based and inaugural test of the mutual effects of prejudice and acculturation choices. Although, as noted in the introduction, these variables have been observed to correlate systematically in numerous cross-sectional datasets, a parsimonious and comprehensive account

of why these relationships are to be expected is to date still outstanding. By providing such an account, it is hoped that the present work will contribute to the integration of the acculturation literature and the literature on prejudice reduction.

The work nicely complements some recent insights into how preferences for identity management strategies might be driven by the minority or majority status of the respondents. For example, Hehman et al. (2012) found that majority members tend to favour assimilationist policies, while minority members are more enamoured with pluralist policies. The present contribution demonstrates that policy preferences do not only differ between minorities and majorities in terms of their mean levels but also in terms of their correlates.

While the results are exciting, a few limitations to this contribution and opportunities for further exploration should be noted. Firstly, although panel data can give some indication of causal effects, of course, experimentation is preferable to obtain certainty. Hence, although we do see clear advantages to our present very diverse and comparatively large sample, future studies could endeavour to employ an experimental design. Secondly, the hypothesized effects of culture maintenance desire and culture adoption desire on prejudice for minority members were partly based on the assumption that certain minority choices will generate 'friendlier' reactions from majority members, leading to more pleasant intergroup experiences. This, of course, was not directly tested, and this could be an interesting topic for further investigation. Thirdly, our samples, while heterogeneous and quite diverse, are not representative samples of their respective national populations. The findings should therefore be generalized only with caution. Fourthly, there is evidence that majority attitudes differ for different ethnic minority groups (Bourhis & Dayan, 2000). However, because ethnic minorities are often lumped together by the media and in public discourse, we would argue that although of course it is sensible to analyse attitudes towards specific minority groups, majority members still have attitudes about minorities in general. It is these latter attitudes we were interested in, and we see research questions about group specific attitudes and general attitudes not as mutually exclusive. In the same vein, different ethnic minorities might have different mean levels of prejudice or acculturation preferences. However, the correlational and causal processes outlined in this paper were hypothesized to be generic across different ethnic minority groups, a state of affairs that is entirely compatible with the manifestation of different mean levels on key variables for different groups. To test the generalizability of processes across different groups, in an ideal world, we would have liked to demonstrate the stability of effects across different ethnic minority groups. Alas, the reasonably small sample sizes for particular ethnic groups precluded such an analysis. However, such a test remains an important issue for future research.

It should also be noted that a number of the observed effects are not particularly strong. However, we would like to highlight that in some ways, we believe it is remarkable that robust effects were found at all, given that there was a substantial time lag between the two points of data collection and given that our tests, which always controlled for the dependent variable at time 1, were statistically quite stringent. It has particularly been noted how difficult it can be to detect

moderation in survey data (McClelland & Judd, 1993), which might be why the interaction between the acculturation dimensions only reached significance for the (larger) majority sample but not the minority sample, and why similarity was only found to moderate the effects of one acculturation dimension but not the other. We therefore believe that the effects we did find are even more noteworthy, especially since they describe processes that—in spite of their relatively modest statistical magnitude—will make real, notable differences to the lives of ethnic minority members.

We believe some clear policy implications can be drawn from the present findings. Firstly, because prejudiced majority members will end up with a reduced desire for culture maintenance but an increased desire for culture adoption, they can be thought of as having a resultant preference for assimilation. However, this strategy has not been linked to particularly beneficial psychosocial health outcomes for minority members (Berry, 1997), nor is it particularly popular among minority members (Zagefka & Brown, 2002), nor is it compatible with minority members' own preferences in situations of intergroup conflict (as shown in the present data, which exhibited a negative effect of prejudice on culture adoption desire for minorities). Overall, then, it appears that mutual prejudice 'pushes' minority and majority members into different directions when it comes to acculturation strategy preferences, thereby multiplying opportunities for further prejudice inducing conflict. Thus, if one wants to create consensual 'buy in' among both groups for the acculturation strategy with the demonstrably most positive outcomes (i.e. integration; Berry, 1997), it seems one will first of all have to address prejudice levels among both minority and majority members, if the endeavour is to be successful. The best starting point seems the majority group, because effects for this group were notably stronger than for the minority group.

Secondly, culture maintenance desire seems to worsen intergroup attitudes for minority members but ameliorate them for majority members. Further, culture maintenance preference levels tend to be higher for minority than majority members. Therefore, a good approach might be to simultaneously aim to decrease somewhat minority support for culture maintenance but increase somewhat the majority's support for this issue. The reverse argument can be made for culture adoption desire: this improves intergroup attitudes for minorities but adversely affects them for majorities. Moreover, in terms of mean levels, there is more support among majority members for culture adoption compared with minority members. Therefore, a reasonable conclusion would be to simultaneously aim to increase culture adoption readiness among minorities but decrease the demand for it among majorities. However, at the same time, the interaction between the two acculturation dimensions in predicting majority members' prejudice also suggested that a desire for culture adoption might be less problematic if culture maintenance desire is simultaneously high. Therefore, another potentially promising strategy for an intervention would be to accept the majority's demand for culture adoption as long as it exists in combination with high support for culture maintenance. Support for both approaches can be found in the data, as well as evidence that such approaches would be all the more beneficial in situations of low perceived intergroup similarity. Taken together, these measures might help

move us along the path towards more harmonious interethnic relations. At the same time, decreasing the minority's desire for culture maintenance and increasing their culture adoption desire might, while being positive for intergroup harmony, not lead to the establishment of a truly multicultural society. The question of which group should change their preferences is a matter of ideological debate. Research can inform that debate but cannot ultimately be used to make a political judgement call.

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