A New Route Towards More Harmonious Intergroup Relationships in England?

Majority Members' Proximal-Acculturation

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Abstract

Although the ways that immigrants relate to UK culture has been a hot topic since the EU-referendum, little attention has been given to how majority group members such as Host Country Nationals (HCNs) relate to immigrants' culture. Thus, we explored English HCNs' globalisation-based *proximal*-acculturation – the extent to which they prefer to adopt aspects of immigrants' cultures and/or maintain their national culture. Using two-step cluster analysis, a pilot study (N = 63) revealed a separated, integrated, and undifferentiated cluster, with separated HCNs perceiving cultural diversity more as a threat and less as an enrichment. Using latent profile analysis in a second study (N = 220) also revealed a three strategy-solution, identifying assimilated, integrated and separated profiles. Again we examined how these strategies differed across perceptions of cultural threat and enrichment as well as other psychosocial characteristics: identifying with fellow English citizens, recognizing cultural differences whilst not being culturally embedded (constructive marginalization), and various forms of intergroup contact. Separated HCNs identified more with fellow English citizens, endorsed less constructive marginalization, perceived less cultural enrichment yet more cultural threat than HCNs following some of the other strategies. These results stress that the onus of cultural adoption lies with both groups – minorities and majority members – with English HCNs showing distinct proximal-acculturation strategies. Lastly, when exploring a variable-centred approach, proximal-acculturation orientations (cultural maintenance/adoption) mediated the relationship between cultural threat, cultural enrichment, and intergroup contact on positive feelings towards immigrants. Thus, the ways that HCNs acculturate may provide a new route towards harmonious intergroup relations.

Keywords: latent profile analysis, acculturation, globalisation, majority group members, intergroup relations, multiculturalism

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How do host country nationals (HCNs) – as members of a cultural majority group – acculturate towards immigrants' cultures? In times when immigrants represent the fifth largest population group in the world (United Nations, 2019), but anti-immigration movements are on the rise (Davis & Deole, 2018), a better understanding not only of immigrants' but also HCNs' acculturation could provide new insights into their current and future intergroup relationships. Nevertheless, this has been a neglected topic in acculturation research ever since Redfield et al. (1936) proposed a two-way acculturation process. While a vast body of literature sheds light on the acculturation orientations and strategies of immigrants towards their respective host culture and HCNs' expectations of how immigrants should acculturate towards the host culture (Berry, 2017; Horenczyck et al., 2013), little is known about HCNs' globalisation-based *proximal*-acculturation[1] – that is, their preference for adopting minority members' cultural identities, values, and behaviours and/or maintaining their national culture. In fact, only Lefringhausen and colleagues (2016, 2020) as well as Haugen and Kunst (2017; Kunst et al., 2021) have so far examined the nature, antecedents, and outcomes of such *proximal*-acculturation among majority members.

Therefore, the present research aimed to replicate and extend this prior work. Specifically, we attempted to replicate the outlined work by asking: do majority members adopt some of the cultural values, behaviours and identities of immigrants and/or maintain their national culture – as the definition of a two-way acculturation process would suggest (Redfield et al., 1936)? We further extended previous work by investigating proximal-acculturation within an English context, which holds particular importance given that attitudes towards immigration constituted one of the defining elements of the 2016 EU-referendum in the UK (Ashcroft, 2016, 24 June; Carl, 2018). Additionally, we examined the

relationships of proximal-acculturation with distinctive psychosocial variables (e.g., perceiving immigrants as cultural threat or enrichment), and tested whether the ways that HCNs acculturate may explain the relationship between such variables and attitudes toward immigrants. In so doing, we employed the less prominent person-centred approach in acculturation research to identify acculturation strategy groups (e.g., integration; Nieri et al., 2011) and the more common variable-centred approach to investigate the explanatory power of HCNs' acculturation orientations (i.e., minority culture adoption and/or national culture maintenance; Ward & Geeraert, 2016).

The Bidimensional Acculturation Model

Contact between members of different cultural groups can result in continuous changes at both individual (e.g., values and identities) and group levels (i.e., social and cultural systems; Graves, 1967; Redfield et al., 1936; Safdar et al., 2013). Berry's (1980, 1997) bidimensional acculturation model proposes two underlying orientations for minority group members such as immigrants, which Bourhis et al. (1997) refined at the individual level: the degree to which individuals wish to maintain their original/heritage culture, and the degree to which they desire to adopt features of another culture. When crossing these two orientations, four acculturation strategies can be identified: integration through endorsing heritage culture maintenance and adoption of the new culture; assimilation by taking on the characteristics of the new culture whilst shedding one's heritage culture; separation from the mainstream culture whilst maintaining one's heritage culture; and marginalization through low levels of both cultural maintenance and cultural adoption.

These strategies have been differently operationalized over the years. Most acculturation research measures either each strategy individually or the two underlying acculturation orientations on two independent continuous scales to then split them via mean/median/scale midpoint into strategies or use their interaction (Arends-Tóth & van de

Vijver, 2003; Demes & Geeraert, 2014; Ward & Rana-Deuba, 1999). In opposition to these common variable-centred approaches (Ward & Geeraert, 2016), the person-centred approach uses cluster analysis to group individuals into different strategy clusters on the basis of similarity in scores on the two underlying orientations (Rudmin, 2009). This approach works well for acculturation research because it overcomes the common assumption that the cultural orientation of a sample applies to all of its participants by using a statistically sound method to identify different strategy groups (Grigoryev & van de Vijver, 2018; Schwartz & Zamboanga, 2008). For example, work on HCNs' acculturation expectations reported anything between three to six strategy clusters in different population groups (Grigoryev & van de Vijver, 2018; Nieri et al., 2011; Schwartz & Zamboanga, 2008). Thus, such a bottom-up approach may be particularly valuable in the less developed field of HCNs' proximal-acculturation, enabling a data-driven investigation of whether acculturation strategies typically found among immigrants can also be observed among HCNs.

Majority Members' Acculturation

Whilst early acculturation research either denied a reciprocal process (Graves, 1967) or ignored it (Foster, 1960), current work conceptualizes it in terms of HCNs endorsing expectations, ideologies and policies on how to accommodate immigrants (Berry, 2017; Horenczyk et al., 2013). For example, the Interactive Acculturation Model (Bourhis et al., 1997) and the Relative Acculturation Expanded Model (Navas et al., 2007) focus on HCNs' expectations of how immigrants should acculturate whilst Berry et al. (1977; Berry, 2017) and others (e.g., Wolsko et al., 2000; Whitley & Webster, 2019) describe HCNs' preferences for how their society should manage immigrants' acculturation via adapting (or not adapting) national institutions to their needs (e.g., multiculturalism in education or labour). Relatedly, Stuart and Ward (2019) recently introduced the exploration of HCNs' perceptions of societal descriptive norms about intergroup contact, multicultural policies and practices, and diversity

ideologies. The focus of such concepts stems from their strong influence on immigrants' successful integration (Brown & Zagefka, 2011). Yet, although acknowledging the role of HCNs in shaping the acculturation process of immigrants, how HCNs themselves acculturate remains largely unaddressed.

One early exception to this is Chen et al. (2008) who distinguished between immigration- and globalization-caused processes related to acculturation; the former refers to attitudinal changes in individuals who move to another country whilst the latter refers to changes in individuals due to direct/proximal and indirect contact with cultures existent within and outside of their home country. For Chen et al. (2016), two underlying dimensions of feelings, thoughts, and behaviours arise from living in a globalized world: multicultural acquisition and ethnic protection. However, both dimensions do not solely focus on acculturation. Multicultural acquisition includes a mix of support for multiculturalism, openness to learning other cultural customs, and liking to travel, whereas ethnic protection includes feelings of being threatened by multiculturalism. Thus, multicultural acquisition can mean that HCNs remain monocultural by only alternating their behaviours depending on the cultural context.

Ferguson and Bornstein (2012; Ferguson et al., 2020), by contrast, focused on globalisation-caused *remote*-acculturation via indirect and/or intermittent exposure (e.g., food or tourism) to geographically distant cultures. Using cluster analyses, they first found two acculturation strategies of Jamaican youths towards North American culture (Ferguson & Bornstein, 2012; 2015): an Americanized Jamaican group and a Traditional Jamaican group. Given that the Americanized group still identified more strongly with Jamaican culture than with American culture, it showed a trend towards integration. Recently, Ferguson et al. (2017) even detected a remotely British Assimilated Malawian group, demonstrating that there is either a functional advantage in assimilating or some form of pressure for HCNs to

adopt British culture. Despite these research advances, we argue that a third form of globalisation-caused acculturation remains ignored: HCNs' proximal-acculturation towards minority members' cultures within a shared society.

Majority Members' Proximal-Acculturation

Given that acculturation depends on intergroup relationships (Brown & Zagefka, 2011), we need to apply an intergroup lens when discussing HCNs' proximal-acculturation. That is, whereas remote-acculturation proposes majority members to acculturate to geographically distant groups of minority (Ozer & Schwartz, 2016) and majority status (Ferguson et al., 2016), HCNs' proximal-acculturation is directed towards minority cultures of lower ethnolinguistic vitality (i.e., status, demographic strengths, and institutional support; Giles et al., 1977) within a shared, yet HCN dominated, society. Thus, HCNs acculturation to minority cultures challenges their embeddedness in a more powerful/privileged group where individuals usually seek stability in their cultures, often resulting in more resistance to (perceived) cultural change (i.e., cultural inertia; Zárate et al., 2012). Then, proximal-acculturation may be less likely to occur, may occur more on a peripheral level (e.g., contact or behaviours) than resulting in changed cultural identities or values, as well as may take more time to happen than remote-acculturation or immigration-based acculturation.

When exploring such potential cultural changes of HCNs, Lefringhausen and Marshall (2016) found support for two underlying orientations of HCNs' globalisation-based proximal-acculturation across various continent groups (North America, Europe, and Asia): national culture maintenance and minority culture adoption. Meanwhile, Haugen and Kunst (2017), who employed a person-centred approach, identified three acculturation strategies within a Norwegian sample of which two corresponded to Berry's (1997) theory. An integrated group maintained their national culture whilst adopting aspects of immigrants' cultures, a separated group maintained their national culture only, and an undifferentiated

group in which participants scored around the midpoint on both orientations. Within a White US American sample, Kunst et al. (2021) again identified these three strategy groups as well as a marginalized cluster.

Hypothesis 1. Thus, we expected a minimum of three acculturation strategies to emerge for English HCNs in the present research – separation, integration and undifferentiation.

However, we further explored whether additional strategies would occur given that Berry (1997) proposes four strategies, Kunst et al. (2021) reported an additional marginalized group and remote-acculturation research suggests that HCNs can assimilate to other cultures (Ferguson et al., 2017). Then, to better understand each strategy's distinctive characteristics, we outline their expected associations with the various psychosocial characteristics presented below.

Constructive Marginalization

Different to marginalization among immigrants and other minority groups that often is correlated with worse psychological well-being (Schmitz & Berry, 2009), the undifferentiated cluster discovered by Haugen and Kunst (2017) did not significantly differ in the level of life satisfaction from the integrated and separated groups. Moreover, undifferentiated individuals expressed lower levels of identity threat and ethnic discrimination than separated HCNs. Thus, we propose that rather than being marginalized, these undifferentiated individuals may show a trend towards endorsing cultural independence or constructive marginalization (J. M. Bennett, 1993; 2014; Kunst & Sam, 2013). Constructive marginalization, as proposed by the Developmental Model of Intercultural Sensitivity, describes a resolution to the identity negotiations induced by the integration state of intercultural sensitivity (J. M. Bennett, 1993; J. M. Bennett & M. J. Bennett, 2004). Specifically, constructively marginalized individuals consciously shift between different

cultural frames rather than belonging to a specific one, which fosters rather than reduces their well-being (M. J. Bennett, 1993; Yoshikawa, 1987). Such individuals experience cultures in context to each other, recognize cultural differences whilst lacking a specific cultural embeddedness. For example, Mexicans who were remotely-acculturated towards the USA expressed constructive marginalization and, like their bicultural peers, were more likely to achieve an upper management status than separated Mexicans (Gillespie et al., 2010). Notably, this state of marginalization does not regard other cultural groups as threatening and was found to positively relate to *worldmindedness* (i.e., individuals regard the world as their frame of reference; Hammer et al., 2003).

Hypothesis 2: Taken together, we suggest that HCNs who follow an undifferentiated acculturation strategy will be more likely to endorse constructive marginalization than integrated or separated HCNs.

Identification with Fellow English Citizens

We further examined whether HCNs following different proximal-acculturation strategies would vary in their identification with English citizens. We follow this approach because we measure HCNs' cultural orientations with an instrument that does not differentiate their orientations across domains (e.g., behaviours or values; Demes & Geeraert, 2014). However, cultural values and identification are more resistant to change in the acculturation process (Snauwart et al., 2003). Indeed, Haugen and Kunst's (2017) qualitative findings indicated that their Norwegian participants experienced cultural changes mostly in terms of behaviours rather than values, echoing Chen et al.'s (2016) assumption that HCNs' multicultural acquisition does not imply bi- or multiculturalism per se. This further relates to Zárate et al.'s (2012) findings that majority members are more resistant to cultural change, and thus that proximal-acculturation may occur more on a peripheral (e.g., behaviours) rather than core level (e.g. identity and values). However, Lefringhausen and Marshall (2016)

reported that acculturated HCNs varied in their national culture maintenance endorsement, which was positively related to commitment towards one's national group, a sub-component of ethnic identification (Phinney & Ong, 2007).

Hypothesis 3: Consequently, we expected that undifferentiated HCNs show lower levels of identification with fellow English citizens (i.e., indicating potential acculturation beyond a behavioural domain; Haugen & Kunst, 2017) than integrated and separated HCNs.

Cultural Threat and Enrichment

Intergroup relations theories emphasize the central role of threat in predicting intergroup attitudes (Callens et al., 2019; LeVine & Campbell, 1972; Riek et al., 2006). For example, Integrated Threat Theory (Stephan et al., 2009) holds that higher levels of perceived threats can encourage prejudice towards outgroup members whilst hindering favourable outgroup attitudes. Berry et al. (1977; Berry, 2017) proposed that only when HCNs are secure in their cultural identities will they be able to accept those who differ from them; in contrast, when they feel that their identities are threatened, hostility and discrimination will result (Multiculturalism Hypothesis). Indeed, past research has shown that multiculturalism – the acknowledgement and appreciation of cultural differences as the basis for harmonious intergroup relations – is often experienced as a threat to HCNs' national group (Kauff et al., 2013; Plaut et al., 2011; Yogeeswaran & Dasgupta, 2014).

Specifically, Lefringhausen and colleagues (2016, 2020) found that HCNs' minority culture adoption negatively correlated with perceptions of intergroup threat and ethnocentrism (i.e., stereotypical thinking about other cultures paired with feelings of intergroup threat; M. J. Bennett, 1993). Haugen and Kunst (2017) also reported that their separated HCNs experienced greater identity threat than those who followed other strategies. Conversely, some HCNs experience the existence of cultural diversity as a benefit to their society as it allows cultural stimulation and inspiration, resulting in their support for

multicultural policies (Ginges & Cairns, 2000; Leong, 2008). Thus, we expected that not only the absence of threat but the perception of cultural enrichment through immigrants will be associated with more welcoming proximal-acculturation strategies:

Hypothesis 4: Separated English HCNs will perceive a higher level of cultural threat than integrated and undifferentiated HCNs.

Hypothesis 5: Integrated HCNs will perceive higher levels in cultural enrichment than separated HCNs. Also, undifferentiated HCNs will show higher levels in cultural enrichment than separated individuals given that such HCNs are likely to be constructively marginalized, and thus are expected to be individuals who thrive in plural societies (J. M. Bennett, 1993).

Degree of Intergroup Contact

Intergroup contact enhances the experience of acculturation and therefore the potential to adopt other cultures (Redfield et al., 1936; Sam & Berry, 2010; Sixtus et al., 2019). Indeed, Intergroup Contact Theory (Allport, 1954; Pettigrew & Tropp, 2006) postulates that – if particular conditions are met – positive intergroup contact reduces negative attitudes and raises favorable attitudes towards the contact partner. However, when Haugen and Kunst (2017) inspected the influence of an objective indicator of intergroup contact – the level of neighbourhood diversity in Oslo – on HCNs' acculturation, results showed that individuals living in more diverse areas were more likely to endorse separation. Conversely, Christ et al. (2014) demonstrated across seven multilevel studies that when living in an environment where people in general have more intergroup contact, even prejudiced individuals who avoid direct contact with minority members still benefit from the "contextual effect of contact" (p. 3999) – that is, they express lower levels of prejudice than when living in environments with less general intergroup contact.

Meanwhile, Semyonov et al. (2004) stress that it is not the objective level of diversity but its perception that may encourage prejudice. Indeed, Lefringhausen et al. (2020) reported

that perceived contact frequency combined with positive contact quality related positively rather than negatively with HCNs' minority culture adoption. Meanwhile, we live in the 21st century where contact often happens online with geographically distant (i.e., those who live in another country) and proximal individuals (i.e., those who live in the same country; Reaney, 2012, March 27). Given that online contact encourages remote-acculturation to geographically distant groups (Ferguson & Bornstein, 2012) as well as reduces prejudice (Imperato et al., 2021), it may also encourage proximal-acculturation towards immigrants who live in the UK.

Hypothesis 6: Thus, integrated and undifferentiated English HCNs are expected to live in more diverse local authority districts, have higher levels of perceived direct as well as online contact with immigrants and geographically distant groups than separated HCNs.

The Present Research

As suggested by Sakaluk (2016), we first conducted a pilot study to gain preliminary insights into the occurrence of different acculturation strategies (Hypothesis 1) and psychosocial differences across strategy groups. Specifically, we tested whether the acculturation strategy groups differed in their perceptions of cultural threat and enrichment (Hypotheses 4 and 5). We then conducted our main study. Here we used Latent Profile Analysis (LPA) to test Hypothesis 1. This is because two-step cluster analysis is regarded as an inductive approach (Pastor et al., 2007) whereas LPA, a model-based procedure like cluster analysis (Lubke & Muthén, 2005), provides fit indices including significance tests that enable a more elaborate comparison of different models. Thus, the researcher can make a more informed decision about the number of underlying classes (Grigoryev & van de Vijver, 2018; Pastor et al., 2007). Lastly, to obtain more robust estimates for our main study, we also considered social desirability and positive feelings towards immigrants as control variables.

In particular, Brown and Zagefka (2011) stressed to control for pre-existing levels in prejudice when exploring acculturation attitudes held by HCNs.

Pilot Study - Methods

Participants and Procedure

The 63 participants in this study had to be White, 18 years or older, hold solely UK citizenship, be born in England and currently be living in England. Data was collected between November 2017 and February 2018. Thirty-one (49.2%) were recruited via the online platform Prolific, receiving £1.67 after survey completion, and 32 were collected via snowball sampling on social media to achieve a diverse sample of participants. Participants were between 18 and 72 years old (see Table 1 for *M* and *SD*), mostly female (55.6%), employed (52.4%) and earned less than £20,000 per year (42.9%) with two thirds having no migratory experience (i.e., had never lived abroad, 69.8%; see supplementary materials, p. 4).

Materials

We adapted the 8-item Brief Acculturation Scale (Demes & Geeraert, 2014) on a 7-point Likert scale (1 "*strongly disagree*" - 7 "*strongly agree*"), by rephrasing both 4-item subscales which originally measured immigrants' heritage culture maintenance and host culture adoption to address English HCNs' cultural maintenance and tendency to adopt immigrants' cultures (e.g., "It is important for me to take part in English traditions/traditions of immigrants"). Cronbach's alphas indicated good reliability for both subscales ($\alpha s > .85$). Given that we only aimed to gather some first insights with this preliminary study into the relationships between proximal-acculturation strategies and psychosocial variables, we did not ask about specific threat/enrichment domains, but asked whether for participants in general "(t)he presence of immigrants' cultures forms a threat/enrichment to my culture and traditions" (Piontkowski et al., 2002). Answers for each item were given on a 7-point Likert scale (1 "*does not describe my feelings*" - 7 "*clearly describes my feelings*").

Results

We first tested whether our two different sampling techniques (1 = Prolific, 2 = Non-Prolific) impacted our main variables. This was the case for cultural threat (Prolific, M = 1.71, SD =1.01; Non-Prolific, M = 2.53, SD = 1.63), $t(51.97) = 2.42$, $p = .019$, and for national culture maintenance (Prolific, M = 4.30, SD = 1.44; Non-Prolific, M = 5.34, SD = 1.20) $t(61) = 3.10$, $p = .003$. Thus, we included the source of our sample as a control variable in the further analyses. The correlations among all variables is shown in Table 1.

We conducted a two-step cluster analysis with the log-linear method in SPSS (Chiu et al., 2001; Dalmaijer et al., 2020) – that is, we ran an unspecified cluster search, inputting the continuous mean variables national culture maintenance and immigrant culture adoption. A Schwartz's Bayesian Information Criterion (BIC, Schwarz, 1978) closer to 0 indicates a better model fit as well as a silhouette measure of cohesion and separation of more than .50 (Sarstedt & Mooi, 2014).

Results revealed a two-cluster solution with a silhouette measure above .50 and a BIC of 90.238, with 42 participants (66.7%) belonging to the first cluster and 21 participants (33.3%) belonging to the second cluster. Yet, the smallest BIC (89.874) indicated that a three-cluster solution provided a better fit to the data. We therefore conducted a second analysis, specifying the expected clusters to three. The silhouette measure was again above .50 with the identified clusters corresponding to integrated, undifferentiated, and separated proximal-acculturation strategies (see Figure 1). Further follow up analyses supported Hypothesis 1, stressing that HCNs express at least three proximal-acculturation strategies (see supplementary materials, pp. 1-2).

Given our small sample size, we used a stricter alpha (.01) when interpreting the results for Hypotheses 4 and 5 – that is, we conducted one-way ANCOVAs for cultural threat and cultural enrichment with the source of our sample (Prolific vs. Non-Prolific) as a control

variable (see Figure 1 for *M*s and *SD*s). For cultural threat, Levene's test of equality of error variances was significant; yet the differences across acculturation strategies still met a stricter alpha (.001; Tabachnick & Fidell, 2013), $F(2, 59) = 40.79$, $p < .001$, $\eta_p^2 = .58$. Bonferroni-corrected post-hoc tests showed that HCNs following integration and undifferentiation scored lower in cultural threat than those who followed a separation strategy (*p*s < .001). The reverse was true for cultural enrichment, $F(2, 59) = 13.76$, $p < .001$, $\eta_p^2 = .32$, where post-hoc tests showed that integration ($p < .001$) and undifferentiation ($p = .003$) had higher scores than separation. No significant differences were found between undifferentiated and integrated individuals across tests. Interestingly, the effect sizes for both cultural threat and enrichment were large (> .14; Cohen, 1988), indicating the predictive power of HCNs acculturation strategies on such relevant psychosocial variables for intergroup relationships.

Main Study

The pilot study replicated Haugen and Kunst's (2017) findings by identifying three-proximal-acculturation strategies for English HCNs as well as showing that both integration and undifferentiation related to more positive attitudes towards immigrants (i.e., more enrichment, less threat). To provide further support for the role of HCNs' proximal-acculturation in fostering harmonious intergroup relations, we provide both a person-centred and the more common variable-centred approach in this main study (Ward & Geeraert, 2016). That is, besides addressing our Hypothesis 1 to 6, we explored whether national culture maintenance and immigrant culture adoption mediated the relationship between cultural threat, cultural enrichment and intergroup contact on positive feelings towards immigrants. This exploration is based on the Multiculturalism Hypothesis (Berry et al., 1977), Integrated Threat Theory (Stephan et al., 2009) and the Intergroup Contact Theory (Allport, 1954), which all explain why levels of prejudice vary across HCNs. Here, a vast body of research operationalizes perceived intergroup threat as a mediator between

intergroup contact and prejudice (Aberson, 2019; Stephan & Stephan, 2000). Yet, Stephan and Stephan (2017) also emphasize that the relationship between intergroup threat and contact can be reciprocal. Indeed, Abrams and Eller (2017) proposed that they can function as parallel predictors of prejudice due to their temporal variations which then informs the context of the next intergroup encounter. Yet again, we assume that not just the lack of cultural threat, but also the experience of other cultures as an enrichment may foster HCNs' positive outgroup attitudes (Leong, 2008). As such, we tested whether one reason why perceived threat, enrichment, and contact are associated with bias toward immigrants is because they alter HCNs' proximal-acculturation orientations.

Method

All materials, the original wording of our hypotheses, and the analysis plan are reported as part of a larger pre-registered project on the Open Science Framework platform (https://osf.io/jqub8). Some of the hypotheses listed above deviate from our initial pre-registered expectations and, to ensure comprehensibility, we only report our main findings in this study (see LINK). Lastly, our variable-centred analysis was not pre-registered, but added as an exploratory test.

Procedure

Data was collected from the 15th to the 29th of March, 2019 via the online platform Prolific. After the term immigrant was defined ("People who were born outside of the UK [from the EU and non-EU countries] and who are legally living in the UK.") and asking for demographic information, scales and items appeared in random order. Each participant received £5 upon completion of the survey. Ten respondents failed both attention check questions described below and were excluded from further analysis. To further improve data quality, we expanded our pre-registration exclusion criteria to address short response times (below 14.69 minutes, which is 1*SD* below M_{Duration} = 27.95 minutes, *SD* = 13.26), excluding

17 participants. To meet our pre-registered sample size, we then collected an additional 27 responses from Prolific.

Participants

Inclusion criteria were the same as for the pilot study; also, participants had to consider English as their primary language. The final 220 respondents were mostly female, employed, had a Bachelor's degree, had no migratory experiences or parent who was born outside of the UK, mostly voted to remain in the European Union on the 23rd of June, 2016, and tended to live in a less diverse local authority district (Table 2). The age ranged between 18 to 68 years.

Materials

All scales were assessed on 6-point Likert scales, unless stated otherwise. Cronbach's alphas are reported in Table 3.

Attention check questions. The first attention check question asked participants to enter the word "fruitcake" when they had to indicate their favourite colour. The second one appeared in the form of an additional item of another scale, with the instructions reading "Please click 'Much less creative' in this row". Participants who failed both tests were excluded from further analyses.

Control variables. We used four items of Hart et al.'s (2015) 6-item impression management subscale as an indicator for social desirability (e.g., "I never cover up my mistakes"). Answers ranged from *"not true"* (1) to *"very true"* (6) with high scores indicating a lower impression management tendency. Although the Cronbach's alpha score was lower than our pre-registered threshold of $\alpha \geq .70$ (McMillan & Schumacher, 2001), the average inter-item correlation score was .29, and thus fell within the acceptable range of .15 and .50 (Clark & Watson, 1995). We also employed a 1-item affect thermometer measure (Campbell, 1971) which asked participants to provide a number between 0° ("*extremely*

cold") and 100° ("*extremely warm*") that best represented their overall feeling towards immigrants who are living in England.

Cultural threat and enrichment. Again, we employed Piontkowski et al.'s (2002) measure, yet assessed participants' perception of threat and enrichment across all four domains (work, family, club and neighbourhood) that originally were part of the scale. Thus, four items each measured feelings of cultural threat (e.g., I would feel threatened by having migrants as work colleagues.) and cultural enrichment (e.g., "I would feel enriched by having migrants in the neighbourhood.") with responses ranging from "*not at all*" (1) to "*very much*" (6).

Constructive marginalization. As the Intercultural Development Inventory (Hammer, 2011) is not publicly accessible, we developed a 5-item scale to measure HCNs' level of constructive marginalization. To do so, we created items that strongly follow its definition provided by J. M. Bennett (1993), Mohanty and Newhill (2010), as well as used statements extracted from a qualitative study by Fail et al. (2004; e.g., "I enjoy having no roots as I feel at home wherever I am."). The description of the development and validation of the final 4-item scale can be found on OSF (LINK).

Identification with English nationals. We included the subscale of the Identification With All Humanity Scale (McFarland et al., 2012) asking about HCNs' identification with English citizens. A total of nine items asked participants, for example, "How close do you feel to this following group?" followed by a 5-point Likert scale (*"not at all close"* (1) to *"very close"* (5)).

Degree of intergroup contact. To achieve a roughly equal size of HCNs from highly (non UK-born population level of 30%-53%; e.g., Newham) versus little diverse neighbourhoods (non UK-born population level of $\leq 29.9\%$) as an objective indicator of participants' exposure to immigrants, we specified on prolific to collect 110 participants

solely from the City of London and the other 110 only from areas outside of London (Office for National Statistics, 2018). As a follow up, we presented participants with a list of all highly diverse local authority districts as part of the online survey.

Additionally, we assessed three other types of contact. With answers raging from "*never*" (1) to "*every day*" (6), we used three items to assess participants' perceived degree of direct contact with migrants (e.g., "How often do you interact with migrants in your social life?"; Ward & Masgoret, 2008), and one item respectively to measure electronic contact with migrants, and electronic contact with internationals living outside of the UK, asking: "How often do you interact with migrants who live in the UK/people who are not British and live outside of the UK via electronic tools".

National culture maintenance and immigrant culture adoption. We used the same scale as described in the pilot study. However, the scaling was changed to a 6-point Likert measure to avoid a neutral midpoint and the wording for one item of the immigrant culture adoption subscale was changed from "Develop my immigrants' cultures' characteristics" to "Become more similar to migrants", to ensure better comprehensibility.

Results

Person-Centred Approach: Preliminary Analyses

The final sample included 91 (41.4%) residents from culturally diverse districts and 129 (58.6%) from less diverse areas within England. As per our preregistered data analysis plan, we also tested whether the main continuous variables significantly differed across demographics and control variables, and thus, whether the latter should be included in further analyses. The following variables showed a significant and medium (> .06) to large effect (> .14), which is why they were included as control variables (supplementary materials, pp. 5-8; Table 3; Cohen, 1988): qualification, occupation, migratory experiences, participants' referendum vote and positive feelings towards immigrants. Notably, positive feelings towards

immigrants was treated as a control variable in our person-centred approach, but as an outcome variable in our exploratory variable-centred analyses.

English HCNs' Proximal-Acculturation Strategies

To explore the number of HCNs' strategies towards immigrants (Hypotheses 1), we conducted LPA using tidyLPA (Rosenberg et al., 2018) in R. We included the following fit indices to determine the final class number: the Log-Likelihood (LL), the Bayesian information criterion (BIC), the sample-size adjusted Bayesian information criterion, and the Akaike information criterion, with values closer to 0 indicating a better fit. We also inspected the parametric Bootstrapped Likelihood Ratio Test (BLRT), with a value closest to 0 and being significant indicating a better fit than the other class solutions, and the entropy statistic (ranging from 0 to 1), with higher values indicative of higher classification utility. Lastly, the minimum class size should not contain less than 5% of the respondents. Using both subscales of the adapted Brief Acculturation Scale (Demes & Geeraert, 2014), LPA models containing up to a four-class solution were fitted to the data.

With the exception of the LL and BIC values, all other indices, especially the BLRT, indicate a three-class model solution (class sizes = 26/142/52) as the best fit to the data (Table 4). Based on the follow up analyses, we named the three strategies integration, separation and assimilation (Figure 2) – that is, we ran one-way ANCOVAs including the acculturation strategies as our independent variable, positive feelings towards immigrants as a control variable, and national culture maintenance/immigrant culture adoption as outcome variables (Table 5). Results showed that national culture maintenance significantly varied across the three strategies. Bonferroni-corrected post-hoc tests revealed that separation showed the highest level in national culture maintenance, followed by integration and then assimilation. For immigrant culture adoption, results were also significant. The post-hoc tests found that separation showed lower levels in immigrant culture adoption than integration as

well as assimilation, with the latter two not significantly differing from each other. Notably, the effect sizes indicate that national culture maintenance more than immigrant culture adoption contributed to the cluster distinction. Lastly, additional analyses further supported Hypothesis 1 (supplementary materials, p. 3).

Demographics across acculturation strategies were not significant including social desirability, except for HCNs' occupation, and more interestingly, their referendum vote (Table 2): assimilated HCNs showed the highest percentage in Remain Votes whereas separated HCNs showed the lowest.

Hypotheses 2-6

To test Hypotheses 2-6, we conducted one-way ANCOVAs including the three strategies as our independent variable, positive feelings towards immigrants, qualification, occupation, migratory experiences, and participants' referendum vote as control variables, and cultural threat/enrichment, identification with English citizens, constructive marginalization, and intergroup contact as our outcome variables.

Levene's test of equality of error variances was significant for cultural threat ($p <$ .001) and enrichment ($p = .049$), which is why we used a stricter alpha (.01) when inspecting the results (Table 6). Although no undifferentiated strategy group was identified for our main study, we still tested for differences in HCNs' tendencies towards constructive marginalization (Hypothesis 2). Here, the assimilated and integrated groups showed higher levels in constructive marginalization than the separated group, with no difference between the integrated and assimilated groups. Supporting Hypotheses 3, the separated group had the highest level of identification with English citizens, followed by the integrated group and lastly by the assimilated group. Partially in line with Hypothesis 4, the separated group scored higher in perceived cultural threat than the integrated group, whereas no difference was revealed between the assimilated and the integrated or separated groups. Also partially

supporting Hypotheses 5, the assimilated group endorsed more cultural enrichment than the separated group, with no differences revealed between the integrated and the assimilated or separated group. Moreover, the effect size for cultural enrichment was rather small (< .06; Cohen, 1988), for cultural threat and constructive marginalization of medium size, with the largest amount of variance being explained by acculturation strategies for identification with English citizens.

Lastly, we conducted a Pearson's chi-square test including acculturation strategies and local authority districts. Although individuals following an integration strategy were most likely to live in more diverse areas, this difference was not statistically significant (Table 3). In sum, in opposition to our expectations, Hypotheses 6 was not supported.

Variable-Centred Approach

Before testing our parallel mediation model in AMOS 26, we inspected Table 4 which showed significant correlations for all our variables in question. This was also the case for a generic intergroup contact indicator (collapsed across intergroup contact variables; rs $\leq .73$, $p < .01$), which we used as a latent exogenous variable in the SEM (structural equation model). Variance inflation factors for intergroup contact, cultural threat/enrichment and both acculturation orientations ranged between 1.20 - 2.15, thus indicating no multicollinearity (Kutner et al., 2004).

Participants' referendum vote, gender, and local authority districts showed a significant and medium to large effect on both mediators and/or the outcome variable, which is why we included them as control variables in our SEM (supplementary materials, pp. 9-10). We dummy coded participants' referendum vote into two variables, using 'voted remain' as a reference group coded 0. As fit indices, we followed Kline's suggestion (2016) which includes the chi-square test (should be non-significant), the comparative fit index (CFI; should be greater than .90), the root-mean-square error approximation (RMSEA; should be

smaller than .05), and the standardized root-mean-square residual (SRMR; should be .08 or less). As the chi-square statistic is sensitive to sample size, we also included the relative chi-square as a parsimony fit indication, where a score between 3 to 1 indicates an acceptable fit between the hypothetical model and the sample data (Byrne, 2006).

To test our parallel mediation model, we regarded intergroup contact as well as cultural enrichment and threat as the exogenous variables relating to positive feelings towards immigrants (endogenous variable) via national culture maintenance and immigrant culture adoption (mediators). A covariance path was included between the residuals of the three exogenous variables and both mediators. For intergroup contact, we created a latent variable by assigning the mean variable of direct contact and each item for electronic contact as its observed variables.

Our proposed model did not show a good fit to the data, $\chi^2(233) = 614.66$, $p < .001$; $\chi^2/df = 2.65$, CFI = .91, RMSEA = .09 (CI = .08, .10), SRMR = .12. An inspection of the modification indices indicated a required path from cultural enrichment to the dummy coded 'remain vs. leave' variable. The modified model fitted the data significantly better, but not well enough to meet our fit indices, $\chi^2(232) = 560.81$, $p < .001$; $\chi^2/df = 2.43$, CFI = .92, RMSEA = .08 (CI = .07, .09), SRMR = .09; $\chi^2\Delta(1) = 53.85$, $p < .001$. Here modification indicators revealed the need to include a path from cultural threat to the endogenous variable. This final model (Figure 3) fitted the data significantly better, especially with regard to the SRMR value; $\chi^2(231) = 488.17$, $p < .001$; $\chi^2/df = 2.12$, CFI = .94, RMSEA = .07 (CI = .06, .08), SRMR = .08; $\chi^2\Delta\ (1) = 72.64$, $p < .001$. Measurement weights for all main variables are reported in the Appendix (Table A.1). Standardized structural path coefficients, significance values and covariance between residuals can be found in Figure 3 for all main variables (for all control variables, see supplementary materials, p. 11). All structural pathways showed

significant relationships, with the exception of cultural threat not relating to immigrant culture adoption and intergroup contact not relating to national culture maintenance.

We then conducted a bootstrap procedure with 95% bias-corrected confidence intervals (CI) from 5,000 bootstrap samples (Preacher & Hayes, 2008). As shown in Table 6, only national culture maintenance explained the relationship between cultural threat and positive feelings towards immigrants; only immigrant culture adoption explained the relationship between intergroup contact and positive feelings. However, both mediators explained the relationship between cultural enrichment with HCNs' positive feelings towards immigrants.

General Discussion

The present study addresses the lack of research on acculturative change among majority members such as Host Country Nationals (HCNs) that goes beyond acculturation expectations, intergroup ideologies, multicultural policy support or the normative perception thereof (cf., Berry, 2008; Graves, 1967; Horenczyk et al., 2013; Stuart & Ward, 2019). Indeed, our results add a third strand to Chen et al.'s (2008) proposed globalization-caused acculturation process by examining HCNs' *proximal*-acculturation towards their national and immigrant cultures through living in the same country. Below we discuss all outcomes across both studies in detail.

Person-Centred Approach

Acculturation strategies. Using two-step cluster analysis and latent profile analysis respectively, our pilot and main study revealed four acculturation strategies for English HCNs (Hypothesis 1): separation, integration and undifferentiation (pilot study) and assimilation (main study). This demonstrates that Berry's (1997) bidimensional acculturation model also, at least in parts, applies to HCNs' acculturation towards immigrants. Both studies also showed that separated HCNs scored higher in national culture maintenance and lower in

immigrant culture adoption than the other groups; whilst undifferentiated (pilot study) and assimilated HCNs (main study) showed the lowest level in national culture maintenance.

Notably, in line with past globalization-caused remote- and proximal-acculturation research, integrated HCNs still endorsed their national culture more than immigrants' cultures (Ferguson & Bornstein, 2015; Haugen & Kunst, 2017). After all, HCNs are still embedded in their more powerful or privileged majority group and are more resistant to cultural change (Zárate et al., 2012).

Yet, similar to work on remote-acculturation (Ferguson et al., 2017), we found an assimilated group which indicates that there may be potential functional benefits or pressures to adopt other cultures that are usually faced by immigrants (cf., Castles, 2011; Deaux, 2006). Indeed, some English HCNs live in contexts similar to those which promote assimilation among immigrants (Ward & Geeraert, 2016). For example, English HCNs' work environment increasingly becomes multicultural through growing numbers in foreign-born employees and the implementation of more diversity and inclusion policies (GOV.UK, 2019, April 1). Such group level enforcement of multiculturalism can encourage individual acceptance of cultural diversity (Guimond et al., 2014), and thus the assimilation to this type of environment may become functionally beneficial.

Constructive marginalization. To better understand the undifferentiated group, we intended to explore its relationship with constructive marginalization (Hypothesis 2; J. M. Bennett, 1993). However, no undifferentiation profile occurred in our main sample. Instead, separated English HCNs endorsed a weaker tendency towards constructive marginalization than integrated and assimilated HCNs. This echoes past findings by Lefringhausen and Marshall (2016) where immigrant culture adoption was negatively related to ethnocentrism and positively related to ethnorelativism. That is, ethnorelativists understand other worldviews as equal which can enable them to change frames of cultural reference and thus

to act and feel in a culturally appropriate manner (Hammer et al., 2003) - which also underlines constructive marginalization (J. M. Bennett, 1993).

Identification with English Citizens. Further support for our proximal-acculturation strategies was provided by significant differences in identification with English citizens (Hypothesis 3). In opposition to Chen et al.'s (2016) assumptions that HCNs' multicultural acquisition does not necessarily imply bi- or multiculturalism, we found that integrated and, even more so, assimilated HCNs de-emphasised their identification with English citizens in comparison to separated individuals. Then, although Haugen and Kunst's (2017) qualitative responses indicated cultural changes to happen more at the peripheral level (e.g., behaviours), our results suggest that some HCNs' may even experience changes to their cultural identity. Yet because HCNs do not expect this to happen (Nortio et al., 2020), they may be less aware of such core changes; this could explain why Norwegian HCNs did not report identity changes in Haugen and Kunst's (2017) work.

Cultural threat and enrichment. Separated English HCNs perceived higher levels of cultural threat from immigrants than integrated (main and pilot study) and undifferentiated HCNs (pilot study, Hypothesis 4). By contrast, separated English HCNs perceived less enrichment through cultural diversity than assimilated (main study), integrated (pilot study), and undifferentiated HCNs (pilot study; Hypothesis 5). Thus, our results are in line with past findings (Haugen & Kunst, 2017; Lefringhausen et al., 2020) and support the Multiculturalism Hypothesis (Berry, 2017) in that majority members' who feel secure in their cultural identities (rather than feeling threatened) will be more likely to accept cultural others. Moreover, these findings demonstrate that not only the absence of threat but also the perception of cultural diversity as a benefit to the larger society plays a role for majority members' proximal-acculturation (Ginges & Cairns, 2000; Leong, 2008). However, this was not the case for integrated HCNs in the main study. One explanation could be that their

stronger endorsement of the national culture relative to assimilated HCNs may have reduced the positive implications of their immigrant culture adoption. Most interestingly, our undifferentiated group showed a tendency towards constructive marginalization by deemphasising cultural group memberships (i.e. scoring around the mid-point) whilst experiencing cultural diversity as an enrichment (Bennett, 2014; Kunst & Sam, 2013).

Intergroup contact. Our main study did not confirm that integrated and undifferentiated HCNs lived in more diverse areas than separated HCNs (Hypothesis 6; cf., Haugen & Kunst, 2017). This may be because our chosen threshold for differentiating culturally diverse from less diverse areas was too arbitrary rather than matching other characteristics that may play a role for HCNs' proximal acculturation. As we also did not find significant differences across perceived contact frequency in the present research, potentially contact *quality*, especially in the form of cross-group friendships (Davies et al., 2011), may be more relevant for HCNs' acculturation. Indeed, HCNs' proximal-acculturation orientations were in previous work significantly related with intergroup contact when measured as a variable that combined positive contact quality and contact frequency (Lefringhausen et al., 2020).

Alternatively, and as suggested by Haugen and Kunst (2017), perceived multicultural norms and intergroup ideologies are likely to demonstrate stronger relationships with HCNs' acculturation strategies (Guimond et al., 2014; Stuart & Ward, 2019). For example, the imposed assimilationist/exclusionist ideology advocated in the Brexit campaign (Carl, 2018) could have diminished some English citizens' orientation towards their national culture (e.g., Ditrich et al., 2021). That is, the EU referendum resulted in a societal split in the UK, with Remain voters identifying less as solely English whilst being positively inclined towards immigration, and with the opposite being true for Leave voters (Ashcroft, 2016, 24 June). Immigrants who experience or perceive such assimilation pressures often turn towards their

ethnic culture (Rumbaut, 2008). Here, Remain voters may experience the reverse where they feel pushed towards immigrants' cultures to counter the assimilationist ideology they perceive to reign in the UK. Indeed, assimilated English HCNs consisted of significantly more Remain voters relative to the other groups (Table 2).

Variable-Centred Approach

Our exploratory parallel mediation model, which followed the variable-centred approach commonly used in the social sciences (Ward & Geeraert, 2016), demonstrated the potentially crucial role of HCNs' proximal-acculturation in fostering harmonious intergroup relations. As suggested by the theory of acculturation (Redfield et al., 1936) in combination with the Intergroup Contact Theory (Allport, 1954), perceived intergroup contact related to more positive feelings towards immigrants via increased immigrant culture adoption.

In contrast, the relationship between cultural threat and positive feelings was only partially mediated by national culture maintenance. This may be because separated HCNs interpret their English culture differently to the other HCN groups, which would moderate the mediation process. For example, the Brief Acculturation Scale (Demes & Geeraert, 2014) includes items asking about the importance to hold on to one's English characteristics. For integrated HCNs, English characteristics may include being inclusive/civic whilst for separated HCNs it may indicate the opposite (ethnocentric/exclusive; McLaren, 2017), with the latter named relating to less favorable intergroup attitudes (Chen et al., 2008).

Lastly, cultural enrichment was related to more positive feelings towards immigrants through less national culture endorsement and more immigrant culture adoption. This stresses again the need to inspect threat and enrichment simultaneously as they are not opposite ends of the same pole (cf., Berry, 2017). Practically speaking, supporting English HCNs' adoption of immigrants' cultures may strengthen the link between enrichment and positive feelings towards immigrants. Meanwhile, maintaining ones' national culture should not be equalized

with ethnic protectionism (cf., Chen et al., 2008). Instead, intercultural trainers and policy makers should consider that depending on how HCNs interpret their national characteristics, it may not necessarily hinder positive attitudes towards immigrants.

Limitations and Future Research

This research is not without limitations. First, both samples were collected from an English participant pool post EU-referendum. Despite the parallels to Haugen and Kunst's (2017) results, the generalization of our findings to other sociocultural contexts may therefore be limited. Second, rather than using a generic acculturation measure, future research may follow Schwartz et al.'s (2010) advice and inspect HCNs' acculturation strategies across different domains (values, behaviours and identification). We also employed 6-point Likert scales, which may produce less reliable results; thus a variation of measurement methods should be used in future work. Third, different representations of national identification and their moderating effects should be explored, rather than assuming that one homogenous understanding for all HCNs prevails in a society. Fourth, acculturation expectations starkly vary depending on whether majority members are asked to think about a valued or devalued minority group (Montreuil & Bourhis, 2010). The same may apply to their proximal-acculturation orientations and should be considered in future work. Fifth, whether or not HCNs who follow an undifferentiation strategy lean towards constructive marginalization could not be clarified. Future research should therefore investigate how acculturation strategies are related with intergroup ideologies (e.g., colorblindness) and other indicators of constructive marginalization (e.g., well-being). Finally, to achieve more reliable results as well as to allow any claims of causality between effects, future research is needed that manipulates both predictors and mediators or that measures the constructs over time in larger samples.

Conclusion

The present research offers further support for psychosocially distinct *proximal*-acculturation strategies of HCNs in the form of integration, separation, assimilation, and undifferentiation. Thus, we extended the literature on globalisation-caused acculturation by a third strand, addressing the reciprocal implications of immigration on HCNs and thus the realization that the onus of cultural adoption lies with both – majority and minority members. Moreover, by using a person-centred approach, we stress the heterogeneity of cultural strategy groups within the same population which should not be ignored if one aims to understand the complexity of majority members' acculturation. Lastly, although these findings represent only a snapshot of the acculturation process (Graves, 1967), they still provide insights into a potentially new route towards more harmonious intergroup relationships in England.

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Footnotes

[1]We chose the term *globalisation-based proximal-acculturation* to provide a clear terminological distinction for this phenomena under study here and other well established areas in the literature that describe majority members' acculturation. For example, the term 'majority members' acculturation' is often used to describe majority members' acculturation expectations of immigrants (see Horenczyck et al., 2013). The term proximal-acculturation was introduced by Ferguson et al. (2020) to distinguish from her concept of remote-acculturation. Thus, we adopted this terminology to describe majority members' psychological acculturation towards minority group-members.

Table 1

Pilot Study: Correlation between Main Variables, Ms and SDs for the Total Sample and each Acculturation Cluster

Variables		1	2	3	4	5
1 National Culture Maintenance						
2 Immigrant Culture Adoption		-.11				
3 Cultural Threat		**.59****	**-.62****			
4 Cultural Enrichment		-.13	**.63****	**-.54****		
5 Age[1]		-.09	-.03	.42	.17	
Total	*M*	4.82	3.60	2.13	3.03	44.02
(*N* = 63)	*SD*	1.42	1.40	1.41	1.51	18.06
	Median	4.75	3.75	-	-	-

Note. In bold: $p < .05$, *$p < .01$, and **$p < .001$.

[1]Two missing values in the separated cluster (9.5% of the cluster members).

Table 2

Demographic Variables Across the Three Acculturation Strategy Groups of English HCNs

		Total (N =220)		Assimilation (n = 26)		Integration (n = 142)		Separation (n = 52)		Comparison across Groups (Chi-Square Test)
Variables		n	%	n	%	n	%	n	%	
Gender	Female	139	63.2	16	61.5	94	66.2	29	63.8	$x^2(2, 220) = 1.81$, $p = .404$
	Male	81	36.8	10	38.5	48	33.8	23	44.2	
Occupation	employed	150	68.2	16	65.1	94	66.2	40	76.9	$x^2(6, 220) = 18.05$, $p = .006$[a]
	unemployed	33	15	2	7.7	20	14.1	11	21.2	
	student	30	13.6	6	23.1	23	16.2	1	1.9	
	retired	7	3.2	2	7.7	5	3.5	0	0	
Qualification	Bachelor	77	35	7	26.9	52	36.6	18	43.6	$x^2(8, 220) = 4.32$, $p = .828$[b]
	A-level	60	27.3	7	26.9	40	28.2	13	25	
	Above Bachelor	41	18.6	7	26.9	26	18.3	8	15.4	
	GCSC	41	18.6	5	19.3	23	16.2	13	25	
	None	1	0.5	0	0	1	0.7	0	0	
Migratory	NA	169	76.8	23	88.5	104	73.2	42	80.8	$x^2(6, 220) = 9.18$, $p = .164$[c]
Experiences	Less than one year	23	10.5	2	7.7	17	12	4	7.7	
	Between one to two years	20	9.1	0	0	17	12	3	5.8	
	More than 2 years	8	3.6	1	3.8	4	2.8	3	5.8	

[a]The likelihood ratio test coefficient was inspected because 5 cells (41.7%) had an expected count of less than 5.

[b]The likelihood ratio test coefficient was inspected because 5 cells (33.3%) had an expected count of less than 5.

[c]The likelihood ratio test coefficient was inspected because 5 cells (41.7%) had an expected count of less than 5.

Table 2
Continued

		Total (*N* =220)		Assimilation (*n* = 26)		Integration (*n* = 142)		Separation (*n* = 52)		Comparison across Groups (Chi-Square Test, One-way ANOVA)
Variables		n	%	n	%	n	%	n	%	
Migratory Background	None	184	83.6	22	84.6	115	81	47	90.4	$x^2(4, 220) = 7.66$, $p = .105$[d]
	One parent	23	10.5	1	3.8	20	14.1	2	3.8	
	Both parents	13	5.9	3	11.5	7	4.9	3	5.8	
Referendum Vote	Voted Remain	136	61.8	22	84.6	94	66.2	20	38.5	$x^2(4, 220) = 32.09$, $p < .001$[e]
	Voted Leave	47	21.4	0	0	23	16.2	24	46.2	
	No Vote	37	16.8	4	15.4	25	17.6	8	15.4	
Local Authority Districts	Non UK-born population: 30%-53%	91	41.4	9	34.6	64	45.1	18	34.6	$x^2(2, 220) = 2.23$, $p = .322$
	Non UK-born population ≤ 29.9%	129	58.6	17	65.4	78	54.9	34	65.4	
Age *M*(*SD*)		37.40(12.51)		34.81(13.00)		36.82(12.71)		40.31(11.40)		$F(2,217) = 2.14$, $p = .120$
Social Desirability *M*(*SD*)		3.36(0.94)		2.96(0.99)		3.39(0.88)		3.42(1.05)		$F(2,217) = 2.68$, $p = .071$

[d]The likelihood ratio test coefficient was inspected because 3 cells (33.3%) had an expected count of less than 5.
[e]The likelihood ratio test coefficient was inspected because 1 cell (11.1%) had an expected count of less than 5.

Table 3

Pearson's Correlation Coefficients, Means, Standard Deviations and Cronbach's Alpha Coefficients for all Main Variables

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Social Desirability											
2. Positive Affect towards Immigrants	.003										
3. Cultural Threat	.01	**-.67****									
4. Cultural Enrichment	-.05	**.73****	**-.57****								
5. Constructive Marginalization	.10	**.40****	**-.29****	**.47****							
6. Identification with English Nationals	**.17**	**-.15**	**.28****	**-.17**	-.11						
7. Direct Intergroup Contact	.06	**.44****	**-.27****	**.47****	**.39****	-.04					
8. Electronic Contact with Immigrants	.02	**.26****	**-.20***	**.36****	**.27****	.08	**.71****				
9. Electronic Contact with Internationals	.10	**.18***	-.10	**.27****	**.28****	-.01	**.45****	**.52****			
10. National Culture Maintenance	.13	**-.48****	**.47****	**-.47****	**-.37****	**.57****	**-.27****	**-.15**	**-.19***		
11. Immigrant Culture Adoption	-.01	**.57****	**-.37****	**.61****	**.51****	**-.18***	**.45****	**.32****	**.25****	**-.35****	
Scale Range	1-6	0-100	1-6	1-6	1-6	1-5	1-6	1-6	1-6	1-6	1-6
M	3.36	69.34	1.55	4.37	2.92	3.62	3.48	3.35	3.11	3.89	2.94
SD	0.94	22.72	0.97	1.34	1.09	0.70	1.29	1.57	1.52	1.15	1.06
α	.64	-	.95	.97	.83	.86	.81	-	-	.90	.89

Note. In bold $p < .05$, *$p < .01$, and ** $p < .001$.

Table 4

Model Fit Indices for the 1-, 2-, 3-, and 4-Class Solution

Classes	Fit indices				Likelihood ratio test		Entropy	Min. class size
	LL	BIC	SSBIC	AIC	BLRT	*p*		
1	-665.577	1352.727	1340.051	1339.153	NA	NA	NA	220
2	-644.928	1327.611	1305.428	1303.856	41.297	.010	0.700	52
3	-638.955	1331.845	1300.155	1297.909	11.945	.049	0.791	26
4	-637.193	1344.503	1303.306	1300.386	3.524	.386	0.714	21

Note. LL = log-likelihood; BIC = Bayesian information criterion; SSBIC = sample-size adjusted Bayesian information criterion; AIC = Akaike information criterion; BLRT = parametric bootstrapped likelihood ratio test for k-1 (H_0) vs. k classes.

Table 5

Mean Differences across Proximal-Acculturation Strategies for all Main Variables

H	Variables	Assimilation (n = 26)	Integration (n = 142)	Separation (n = 52)	Pairwise comparison		p	η_p^2
		$M(SD)$	$M(SD)$	$M(SD)$		$F(2, 216)$		
1	National Culture Maintenance[1]	1.89(0.49)	3.71(0.55)	5.4087 (0.45)	S** > I** > A**	302.87	.000	.74
1	Immigrant Culture Adoption[2]	3.42(0.94)	3.16(0.92)	2.0721(1.00)	I = A, A*/I** > S	7.88	.000	.07
						$F(2, 212)$		
2	Constructive Marginalization[3]	3.53(1.11)	3.06(0.97)	2.24(1.07)	S < A*/I*, A = I	7.00	.001	.06
3	Identification with English Citizens[4]	3.00(0.83)	3.53(0.58)	4.19(0.55)	S** > I** > A**	33.26	.000	.24
4	Cultural Threat[5]	1.09(0.27)	1.33(0.64)	2.39(1.37)	S > I*, I/S = A	6.63	.002	.06
5	Cultural Enrichment[6]	5.39(0.81)	4.58(1.10)	3.28(1.50)	S < A*/I, A/S = I	4.81	.009	.04
6	Direct Intergroup Contact[7]	3.82(1.31)	3.67(1.20)	2.80(1.29)	S = A = I	1.03	.359	.01
6	Electronic Contact with Immigrants[8]	3.65(1.65)	3.46(1.54)	2.92(1.55)	S = A = I	.09	.916	.001
6	Electronic Contact with Internationals[9]	3.73(1.37)	3.14(1.49)	2.73(1.59)	S = A = I	2.14	.120	.02

Note. *$p < .05$, ** $p < .001$. H: Hypothesis. S: Separated. I: Integrated. A: Assimilated. Results for positive affect towards immigrants were significant, [1]$F(1, 216) = 3.50$, $p = .035$, $\eta_p^2 = .02$; [2]$F(1, 216) = 54.53$, $p < .001$, $\eta_p^2 = .20$; [3]$F(1,212) = 14.58$, $p < .001$, $\eta_p^2 = .07$; [4]$F(1, 212) = 4.32$, $p = .039$, $\eta_p^2 = .02$; [5]$F(1, 212) = 103.00$, $p < .001$, $\eta_p^2 = .33$; [6]$F(1, 212) = 147.59$, $p < .001$, $\eta_p^2 = .41$; [7]$F(1, 212) = 27.54$, $p < .001$, $\eta_p^2 = .12$; , [8]$F(1, 212) = 8.51$, $p = .004$, $\eta_p^2 = .04$. Results for qualification were significant, [4]$F(1, 212) = 4.20$, $p = .042$, $\eta_p^2 = .02$; [6]$F(1,212) = 4.19$, $p = .042$, $\eta_p^2 = .02$; [7]$F(1, 212) = 6.76$, $p = .010$, $\eta_p^2 = .03$. Results for migratory experiences were significant, [3]$F(1, 212) = 13.21$, $p < .001$, $\eta_p^2 = .06$; [9]$F(1, 212) = 10.45$, $p = .001$, $\eta_p^2 = .05$. Results for occupation was significant, [7]$F(1, 212) = 13.36$, $p < .001$, $\eta_p^2 = .06$; [8]$F(1, 212) = 6.47$, $p = .012$, $\eta_p^2 = .03$.

Table 6

Specified and Total Indirect Effects

		Specified Indirect Effects (95% CI)				Total Indirect Effec (95% CI)			
Exogenous Variable	Mediator	*B*	Lower-Bouds	Upper-Bounds	*p*	*b*	Lower-Bouds	Upper-Bounds	*p*
Cultural Threat	NCM	-.95	-2.16	-.17	**.021**	-.03	-.09	.03	.273
	ICA	.24	-.76	1.41	.614				
Intergroup Contact	NCM	.18	-.32	1.12	.341	.07	.010	.15	**.021**
	ICA	1.67	.26	3.72	**.016**				
Cultural Enrichment	NCM	.68	.03	2.05	**.032**	.23	.14	.33	**.001**
	ICA	2.24	.92	4.03	**< .001**				

Note. In bold $p < .05$, $p < .001$. NCM: National Culture Maintenance. ICA: Immigrant Culture Adoption.

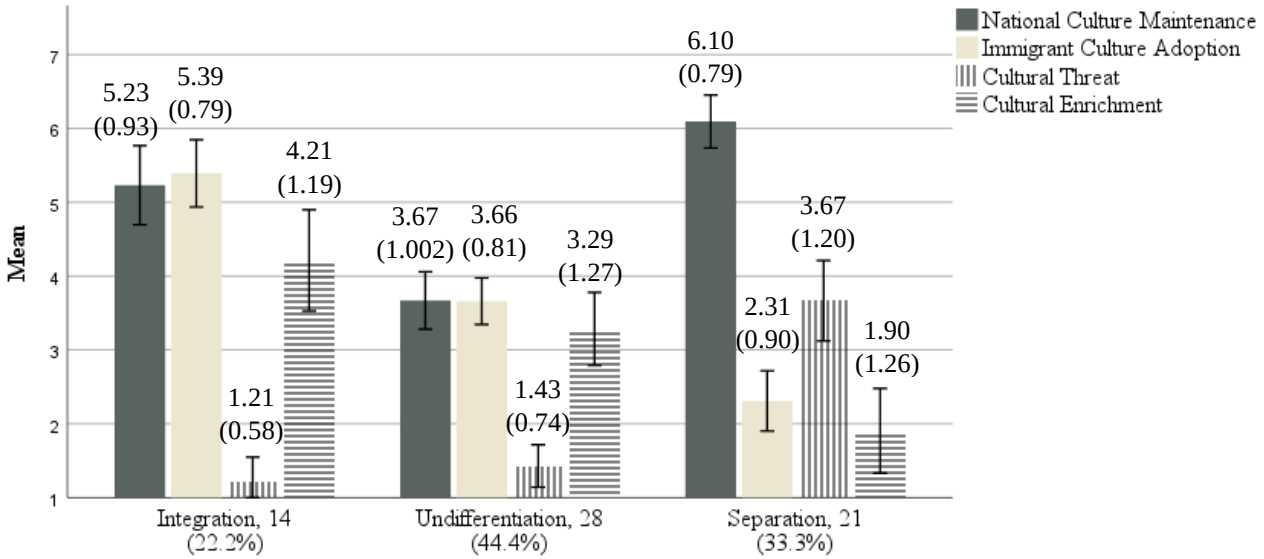

Figure 1. Acculturation clusters based on national culture maintenance and immigrant culture adoption scores. ± 1 Standard Error is displayed. Mean scores displayed over the bars and standard deviations in brackets.

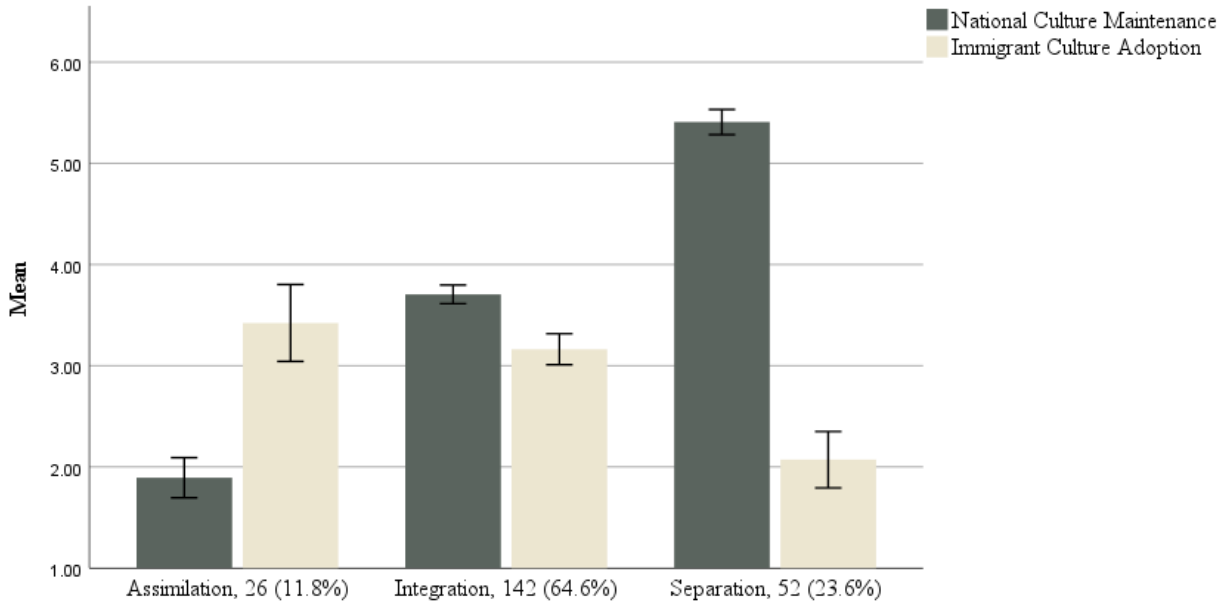

Figure 2. Acculturation profiles based on national culture maintenance and immigrant culture adoption scores whilst controlling for positive affect towards immigrants. ± 1 Standard Errors is displayed.

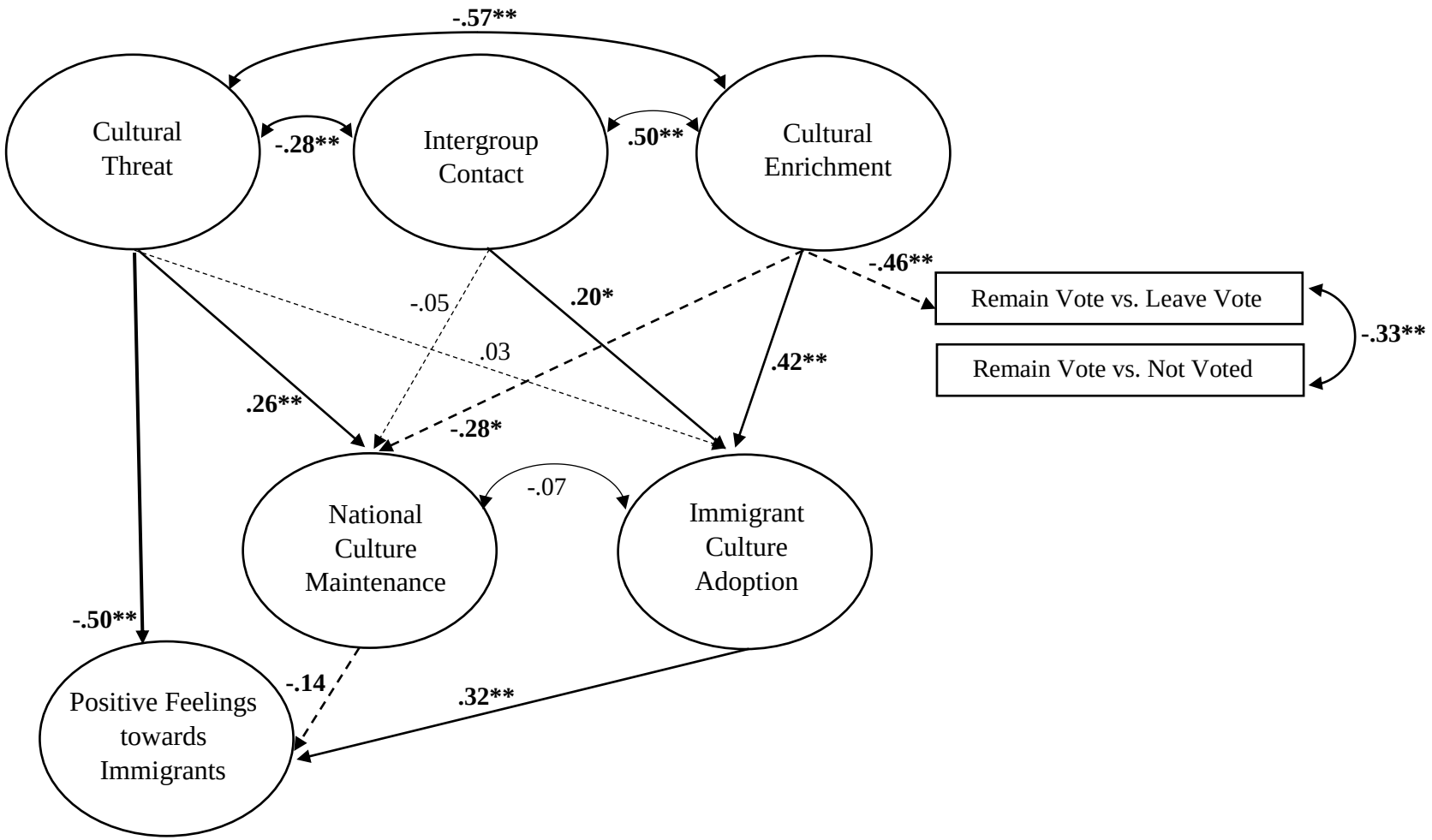

Figure 3. In bold: $p < .05$, $*p < .01$ and $**p < .001$. Standardized structural path coefficients are displayed as well as covariance between residuals. A straight line indicates a positive relationship and a dashed line indicates a negative relationship.

Appendix

Table A.1

Measurement Weights of all Latent Variables

Observed Variable	Latent Variable	β	B	*SE*	*p*
Electronic Contact with Internationals		.57	1.00		
Direct Intergroup Contact	Intergroup Contact	.86	1.28	.16	***
Electronic Contact with Immigrants		.83	1.50	.18	***
Item 1	Cultural Threat	.91	1.00		
Item 2		.95	1.07	.04	***
Item 3		.93	1.28	.06	***
Item 4		.86	1.04	.05	***
Item 1	Cultural Enrichment	.96	1.00		
Item 2		.93	.99	.03	***
Item 3		.97	1.00	.03	***
Item 4		.95	1.04	.03	***
Item 1	National Culture Maintenance	.73	1.00		
Item 2		.79	1.12	.10	***
Item 3		.90	1.28	.10	***
Item 4		.91	1.32	.10	***
Item 1	Immigrant Culture Adoption	.76	1.00		
Item 2		.87	1.17	.09	***
Item 3		.79	.91	.08	***
Item 4		.89	1.02	.08	***

Note. $p < .001$***.

Supplementary Materials

Pilot Study: Follow Up Analysis

Given our small sample size, we used a stricter alpha (.01) when interpreting the results for all following tests. We first conducted a one-way ANCOVA including national culture maintenance as outcome variable, the acculturation strategies as independent variable and the source of our samples as control variable. This is because the source of our sample showed a significant difference across national culture maintenance. There was a significant difference in national culture maintenance levels across the three strategy clusters, $F(2,59) = 36.20$, $p < .001$, $\eta_p^2 = .55$, and none for the nature of the sample ($p = .084$). Bonferroni-corrected post-hoc test showed that integrated participants scored higher in national culture maintenance than undifferentiated participants ($p < .001$), but almost less than separated participants ($p = .053$), whereas undifferentiation showed lower national culture maintenance than separation ($p < .001$; see Figure 1 for *M*s and *SD*s).

A one-way ANOVA including immigrant culture adoption as outcome variable and the acculturation strategies as independent variable, also showed a significant difference, $F(2, 60) = 57.22$, $p < .001$, $\eta_p^2 = .66$. Post-hoc test indicated that integration showed higher levels in adopting immigrants' cultures than undifferentiation ($p < .001$) and separation ($p < .001$); yet undifferentiation still scored higher in immigrant culture adoption than separation ($p < .001$). Furthermore, the effect sizes for both national culture maintenance and immigrant culture adoption were large, indicating the importance of both variables when determining acculturation clusters.

We further inspected whether the mean scores for both acculturation orientations within each group fell above or below the group mean, the scale midpoint and the median. For the separated and integrated group, all three criteria supported their respective classification. Although undifferentiated HCNs' scored below the median for both proximal-

acculturation orientations, both orientations also showed values above the scale midpoint and their immigrant culture adoption levels were above the group mean.

Meanwhile, paired samples *t*-tests revealed that only the separated group showed a significant difference in the endorsement of both acculturation orientation and in the expected direction, $t(20) = 14.10$, $p < .001$. Overall, we can support previous findings that suggest HCNs express at least three acculturation profiles (Hypothesis 1).

Main Study: Follow Up Analysis

Again, we inspected whether the mean scores of both acculturation orientations within each group fell above or below the group mean, the scale midpoint and the median (immigrant culture adoption media = 3.00, national culture maintenance media = 3.88). All three criteria supported the classification of the separated group. A paired samples *t*-test also showed a significant differences in HCNs national culture maintenance and immigrant culture adoption, $t(51) = 21.80$, $p < .001$ (see Table 5 for *M*s and *SD*s).

The assimilated group endorsed immigrants' cultures above the group mean and median, yet below the scale midpoint. Nevertheless, this group showed a significantly stronger endorsement of immigrants' cultures than their national culture, $t(25) = -8.73$, $p < .001$ (see Table 5 for *M*s and *SD*s).

The integrated group scored only above the scale midpoint in national culture maintenance, and above the group mean and median in immigrant culture adoption. Yet they reported significantly higher scores for national culture significantly than immigrant culture adoption, $t(141) = 6.16$, $p < .001$ (see Table 5 for *M*s and *SD*s).

Table 1 – Supplementary Materials

Pilot Study: Demographic Variables for the Total Sample and Across Acculturation Clusters

		Total (N = 63)		Integrated (n = 14)		Undifferentiated (n =28)		Separated (n = 21)		Chi-square test
Variables		*n*	%	*n*	%	*n*	%	*n*	%	
Gender	Female	35	55.6	8	57.1	17	60.7	10	47.6	$x^2(2,63) = 0.85$, $p = .653$
	Male	28	44.4	6	42.9	11	39.3	11	52.4	
Occupation	Employed	33	52.4	9	64.3	13	46.4	11	52.4	$x^2(6, 63) = 2.62$,
	Unemployed	8	12.7	2	14.3	4	14.3	2	9.5	$p = .855$[a]
	Student	10	15.9	1	7.1	6	21.4	3	14.3	
	Retired	12	19.0	2	14.3	5	17.9	5	23.8	
Income[1]	Below £20,000	27	42.9	6	42.9	13	46.4	8	38.1	$x^2(6, 62) = 4.38$,
	£20,000-£30,000	22	34.9	5	35.7	8	28.6	9	42.9	$p = .626$[b]
	£30,000-£40,000	5	7.9	-	-	3	10.7	2	9.5	
	Above 40K	8	12.7	3	21.4	3	10.7	2	9.5	
Migratory	No	44	69.8	10	71.4	18	64.3	16	76.2	$x^2(2, 63) = 0.83$, $p = .661$
Experiences	Yes	19	30.2	4	28.6	10	35.7	5	23.8	

Note. [a]The likelihood ratio test coefficient was inspected because 8 cells (66.7%) had an expected count of less than 5.

[b]The likelihood ratio test coefficient was inspected because 7 cells (58.3%) had an expected count of less than 5.

[1]One value is missing in the undifferentiated cluster (3.6% of the sub-sample).

Table 2 – Supplementary Materials

Differences of Demographics across Outcome Variables

Demographic Variables	Continuous Variables	*t/F*	*p*	d/η_p^2
Gender	Cultural Threat[1a]	**2.38**	**.020**	.33
df(218)	Cultural Enrichment[2]	**-2.57**	**.011**	.36
	Constructive Marginalization[b]	.60	.550	
	Direct Intergroup Contact	.66	.509	
	Electronic Contact with Immigrants	.56	.577	
	Electronic Contact with Internationals	.90	.368	
	Identification with English Citizens	.75	.456	
Occupation	Cultural Threat	1.72	.164	
*df(*3, 216)	Cultural Enrichment	2.20	.089	
	Constructive Marginalization	2.13	.099	
	Direct Intergroup Contact[3]	8.83	< **.001**	.11
	Electronic Contact with Immigrants[4]	3.72	**.012**	.05
	Electronic Contact with Internationals	1.02	.386	
	Identification with English Citizens	1.56	.201	

Note. Significant results ($\alpha < .05$) are in bold face. Given that gender included only two categories, independent samples *t*-test was conducted. For all other variables, we conducted one-way ANOVAs with the demographic variables as predictors. Where a significant test result was found, Bonferroni post-hoc test was performed.

a) Levene's test for equality of variance was significant (*df* = 122.05).

b) Levene's test for equality of variance was significant (*df* = 148.66).

1) Males (*M* = 1.77, *SD* = 1.18) scored significantly higher in cultural threat than females (*M* = 1.42, *SD* = .79).

2) Women (*M* = 4.54, *SD* = 1.28) endorsed significantly more cultural enrichment than men (*M* = 4.07, *SD* = 1.40).

3) Students (*M* = 3.92, *SD* = 1.27) and employed participants (*M* = 3.62, *SD* = 1.26) have more direct intergroup contact than unemployed participants (*M* = 2.56, *SD* = 0.98; *p* < .001, respectively). No differences were found between employed and student participants, between these two groups and retired participants (*M* = 2.76, *SD* = 1.27) and not between retired participants and unemployed participants.

4) Students (*M* = 3.83, *SD* = 1.78) endorsed significantly higher levels of electronic contact with immigrants than unemployed participants (*M* = 2.67, *SD* = 1.36; *p* = .018). No further differences between groups were found (employed, *M* = 3.44, *SD* = 1.52; retired, *M* = 2.71, *SD* = 1.70).

Table 2. *Continued*

Demographic Variables	Continuous Variables	*F*	*p*	η_p^2
Qualification[d]	Cultural Threat	.67	.569	
df(3, 215)	Cultural Enrichment[5]	3.09	**.028**	.04
	Constructive Marginalization[6]	2.68	**.048**	.04
	Direct Intergroup Contact[7]	6.71	< **.001**	.09
	Electronic Contact with Immigrants	2.18	.092	
	Electronic Contact with Internationals	.98	.402	
	Identification with English Citizens[8]	3.85	**.010**	.05

Note. d) The category "no qualification" contained only one person. To allow for a meaningful comparison across groups, we therefore excluded this category from the ANOVA.

5) Participants with a qualification above a Bachelor degree (*M* = 4.88, *SD* = 1.26) experienced significantly more enrichment through cultural diversity than those with A levels (*M* = 4.14, *SD* = 1.33; *p* = .037) and a trend to significance for GCSC (*M* = 4.13, *SD* = 1.37; *p* = .070), whilst no difference was revealed to those with only a bachelor degree (*M* = 4.41, *SD* = 1.33). No differences were found between GCSCs, A-levels and Bachelor degrees.

6) Participants with a qualification above a Bachelor degree (*M* = 3.25, *SD* = 1.08) were significantly more likely to be constructive marginalized than those with A levels (*M* = 2.65, *SD* = 1.06; *p* = .037). No differences were found between those with qualifications above a Bachelor degree and a GCSC (*M* = 3.01, *SD* = 1.00) or above a Bachelor degree, nor were any differences revealed between GCSCs, A-Levels and Bachelor degrees (*M* = 2.94, *SD* = 1.10).

7) Participants with a qualification above a Bachelor degree (*M* = 4.02, *SD* = 1.35) were significantly more likely to have direct intergroup contact than those with A levels (*M* = 3.22, *SD* = 1.37; *p* = .009) and those with GCSCs (*M* = 2.94, *SD* = 1.00), but not to those with Bachelor degrees (*M* = 3.65, *SD* = 1.17). In fact, those with a Bachelor degree also reported significantly more direct intergroup contact than those with GCSCs, but not more than those with A-levels. No differences were revealed between those with A-levels and GCSCs qualifications.

8) Participants with GCSCs (*M* = 3.91, *SD* = 0.70) were significantly more likely to identify as English citizens than those with A-levels (*M* = 3.49, *SD* = 0.72; *p* = .018) and those that have a qualification above a Bachelor's degree (*M* = 3.46, *SD* = 0.75; *p* = .026), but not to those with Bachelor degrees (*M* = 3.66, *SD* = 0.63). No differences were detected between those with A-levels and a Bachelor degree or above, nor between a Bachelor degree and those that have a qualification above a Bachelor's degree.

Table 2. *Continued*

Demographic Variables	Continuous Variables	*F*	*p*	η_p^2
Migratory Experience	Cultural Threat	.31	.818	
df(3, 216)	Cultural Enrichment	.94	.424	
	Constructive Marginalization[9]	3.99	**.009**	.05
	Direct Intergroup Contact	2.36	.073	
	Electronic Contact with Immigrants	1.33	.266	
	Electronic Contact with Internationals[10]	5.99	**.001**	.08
	Identification with English Citizens	1.85	.140	
Migratory Background	Cultural Threat	.18	.836	
df(2, 217)	Cultural Enrichment	1.09	.339	
	Constructive Marginalization	.95	.390	
	Direct Intergroup Contact	1.48	.229	
	Electronic Contact with Immigrants	2.10	.125	
	Electronic Contact with Internationals[11]	3.24	**.041**	.03
	Identification with English Citizens	.26	.770	

Note. 9) No significant differences were reported by the post-hoc test for constructive marginalization between participants with no migratory experiences (*M* = 2.80, *SD* = 1.09), less than one year (*M* = 3.07, *SD* = 1.11), between one-two years (*M* = 3.41, *SD* = 0.92), and more than two years (*M* = 3.78 *SD* = 0.66); although the last group showed a trend towards significance (*p* = .071) in comparison to those with no migratory experience.
10) Participants who had no migratory experience (*M* = 2.89, *SD* =1.42) endorsed significantly less electronic contact with internationals than those who spent less than one year abroad (*M* = 4.04, *SD* =1.55; *p* = .003). No further differences were found (between one-two years, *M* = 3.75, *SD* =1.89; and more than 2 years, *M* = 3.63, *SD* = 1.06).
11) No significant differences were found by the post-hoc test for electronic contact with internationals between participants with no migratory background (*M* = 3.00, *SD* =1.48), one foreign-born parent (*M* = 3.65, *SD* = 1.70), and both parents being foreign born (*M* = 3.77, *SD* = 1.42).

Table 2. *Continued*

Demographic Variables	Continuous Variables	*F*	*p*	η_p^2
Referendum Vote	Cultural Threat[12]	**15.64**	**< .001**	.13
df(2, 217)	Cultural Enrichment[13]	**33.53**	**< .001**	.24
	Constructive Marginalization[14]	**19.48**	**< .001**	.15
	Direct Intergroup Contact[15]	**6.18**	**.002**	.05
	Electronic Contact with Immigrants	1.46	.234	
	Electronic Contact with Internationals	0.65	.526	
	Identification with English Citizens[16]	**6.53**	**.002**	.06

Note. 12) Participants who voted for Leave (*M* = 2.18, *SD* = 1.36) endorsed significantly higher levels of cultural threat than those who voted Remain (*M* = 1.31, *SD* = 0.60, *p* < .001) and those who did not vote (*M* = 1.61, *SD* = 1.12, *p* = .014). No differences were revealed between Remain and None-Voters.

13) Remain-Voters (*M* = 4.85, *SD* = 1.04) endorsed significantly higher levels in cultural enrichment than Leave- (*M* = 3.29, *SD* = 1.30) and None-Voters (*M* = 3.94, *SD* = 1.48; *p* < .001, respectively). In addition, None-Voters endorsed significantly more cultural enrichment than Leave voters (*p* = .040).

14) Remain-Voters (*M* = 3.25, *SD* = 1.00) scored significantly higher levels in constructive marginalization than Leave-Voters (*M* = 2.35, *SD* = 0.94; *p* = .002), whereas no differences were revealed between None-Voters (*M* = 2.43, *SD* = 1.11) and the other two groups

15) Similarly, Remain-Voters (*M* = 3.69, *SD* = 1.24) scored significantly higher in direct intergroup contact than Leave-Voters (*M* = 2.94, *SD* = 1.29; *p* = .002), whereas no differences were revealed between None-Voters (*M* = 3.41, *SD* = 1.28) and the other two groups.

16) Leave-voters (*M* = 3.94, *SD* = 0.57) scored significantly higher in identifying with English citizens than remain-voters (*M* = 3.53, *SD* = 0.70; *p* = .001), and none-voters (*M* = 3.55, *SD* = 0.79; *p* = .031), whereas no differences were revealed between none- and remain-voters.

Table 3 – Supplementary Materials

Differences of Demographics across SEM's Mediators and Outcome Variable

Demographic Variables	Continuous Variables	*F/t*	*p*	d/η_p^2
Gender	National Culture Maintenance	.31	.756	
df(218)	Immigrant Culture Adoption[1]	**-2.21**	**.028**	.31
	Positive Affect towards Immigrants[2]	**-2.19**	**.030**	.31
Occupation	National Culture Maintenance[3]	**3.60**	**.014**	.05
df(3, 216)	Immigrant Culture Adoption	2.18	.091	
	Positive Affect towards Immigrants	2.05	.108	
Qualification	National Culture Maintenance	1.02	.386	
df (3, 215)	Immigrant Culture Adoption[4]	**3.38**	**.019**	.05
	Positive Affect towards Immigrants	1.38	.250	
Migratory Experiences	National Culture Maintenance	.29	.835	
df (3, 216)	Immigrant Culture Adoption[5]	2.97	**.033**	.04
	Positive Affect towards Immigrants	.46	.710	

Note. Significant results ($\alpha < .05$) are in bold face. Given that gender and local authority district included only two categories, independent samples *t*-tests were conducted. For all other variables, we conducted one-way ANOVAs with the demographic variable as predictor, and when significant differences were found, a Bonferroni post-hoc test was performed. Notably, for qualification we excluded the one person who answered "none" to allow for a meaningful comparison across groups.

1) Females endorsed higher levels in immigrant culture adoption (*M* = 3.06, *SD* = 1.05) in comparison to male participants (*M* = 2.73, *SD* = 1.04).

2) Females endorsed more positive affect towards immigrants (*M* = 71.87, *SD* = 21.30) than males (*M* = 64.99, *SD* = 24.50).

3) Unemployed HCNs had higher levels in national culture maintenance (*M* = 4.21, *SD* = 1.16) than students (*M* = 3.37, *SD* = .97, *p* = .020). No difference was found between students and the retired (*M* = 3.43, *SD* = 0.95) or employed (*M* = 3.95, *SD* = 1.15), as well as for the unemployed and the retired as well as the employed.

4) HCNs with GCSCs scored lower in immigrant culture adoption (*M* = 2.66, *SD* = 1.09) in comparison to those with a degree above Bachelor level (*M* = 3.37, *SD* = 1.20, *p* = .014). No other differences were found for the other groups (A-level, *M* = 2.88, *SD* = 1.01; Bachelor degree, *M* = 2.92, *SD* = 0.93).

5) Bonferroni post-hoc test revealed no significant differences across groups: NA, *M* = 2.83, *SD* = 1.05; less than 1 year, *M* = 3.10, *SD* = 1.05; between 1-2 years, *M* = 3.26, *SD* = 1.05; and more than 2 years, *M* = 3.75, *SD* = 0.82.

Table 3. *Continued*

Demographic Variables	Continuous Variables	*F/t*	*p*	d/η_p^2
Migratory Background	National Culture Maintenance	.20	.823	
df (2, 217)	Immigrates' Cultures Adoption	.34	.721	
	Positive Affect towards Immigrants	.06	.943	
Referendum Vote	National Culture Maintenance[6]	**18.29**	**< .001**	.14
df (2, 217)	Immigrates' Cultures Adoption[7]	**27.00**	**< .001**	.20
	Positive Affect towards Immigrants[8]	**21.60**	**< .001**	.16
Local Authority District	National Culture Maintenance	-.79	.430	
df (218)	Immigrates' Cultures Adoption[9]	**3.39**	**.001**	.46
	Positive Affect towards Immigrants[10]	**2.84**	**.005**	

Note. Significant results ($\alpha < .05$) are in bold face. Given that gender and local authority district included only two categories, independent samples *t*-tests were conducted. For all other variables, we conducted one-way ANOVAs with the demographic variable as predictor, and when significant differences were found, a Bonferroni post-hoc test was performed. Notably, for qualification we excluded the one person who answered "none" to allow for a meaningful comparison across groups.

6) Leave voters ($M = 4.70$, $SD = 0.98$) showed higher scores in national culture maintenance than those who voted to remain ($M = 3.61$, $SD = 1.07$, $p < .001$) or who did not vote ($M = 3.91$, $SD = 1.14$; $p = .002$, respectively). No difference was found between the latter named groups.

7) Leave-voters ($M = 2.12$, $SD = 0.92$) showed lower scores in immigrant culture adoption than remain-voters ($M = 3.28$, $SD = 0.95$; $p < .001$) and none-voters ($M = 2.716$, $SD = 1.06$; $p = .015$). Remain-voters had also higher scores in immigrant culture adoption than none-voters ($p = .005$).

8) Leven's test of homogeneity of variances was significant ($p < .001$). Thus, we report Welch's $F(2, 66.17)$ statistic and est. ω^2 in the table. Remain-voters scores higher in positive affect towards immigrants ($M = 76.17$, $SD = 16.67$) than leave voters ($M = 54.17$, $SD = 24.43$) and none-voters ($M = 60.46$, $SD = 27.05$; $p < .001$, respectively). No difference was found for the latter named groups.

9) Those who live in more diverse districts show higher levels in immigrant culture adoption ($M = 3.22$, $SD = 1.02$) than those who live in less diverse areas ($M = 2.74$, $SD = 1.04$).

10) Those who live in more diverse areas showed higher levels in positive affect towards immigrants ($M = 74.43$, $SD = 21.24$) than those who live in less diverse areas ($M = 65.74$, $SD = 23.11$).

Table 4 – Supplementary Material

Standardized Structural Path Coefficients for all Control Variables

Exogenous Variables	Endogenous Latent Variables	β	*B*	*SE*	*p*
Voted Remain versus Not Voted	National Culture Maintenance	.01	.02	.15	.919
	Immigrant Culture Adoption	-.08	-.19	.15	.199
	Positive Affect towards Immigrants	-.13	-7.36	2.70	**.006**
Voted Remain versus Voted Leave	National Culture Maintenance	.19	.42	.15	**.007**
	Immigrant Culture Adoption	-.23	-.52	.15	*******
	Positive Affect towards Immigrants	-.03	-1.33	2.82	.637
Gender	National Culture Maintenance	.07	.13	.11	.238
	Immigrant Culture Adoption	.10	.20	.11	.069
	Positive Affect towards Immigrants	.02	.80	2.00	.690
Local Authority Districts	National Culture Maintenance	-.03	-.07	.11	.550
	Immigrant Culture Adoption	-.08	-.15	.11	.166
	Positive Affect towards Immigrants	-.09	-3.94	1.94	**.043**

Note. Significant results ($\alpha < .05$) are in bold face. $p < .001$***

OSF-form

Deviations from OSF Pre-registration

Our manuscript entitled "A New Route Towards More Harmonious Intergroup Relationships in England? Majority Members' Proximal-Acculturation" published in IJIR (>>doi to be included here<<) refers to our OSF pre-registered Study 1 - Understanding HCN's acculturation profiles (https://osf.io/jqub8). However, we have to notify several deviations from our pre-registered plans, which will be outlined here. First, we did not include any data from local councils due to a 0% response rate. Second, we did not test the pre-registered Hypotheses 5a-c for Study 1 because we felt that it stretches the scope of the present study focus too far. Meanwhile, the pre-registered Hypothesis 5d for Study 1 will be tested and discussed as part of another pre-registered study (https://osf.io/b2etq). Third, we changed some of the original hypotheses' wording in our manuscript to simplify our expectations and thus to ensure the clarity of our manuscript. Lastly, to further reduce the complexity of our manuscript, we excluded the results for the variables individualization and identification with all humanity which were noted in our pre-registered hypotheses H2 and H3a.

Thus, in the following, we will first outline the deviations from our pre-registered hypotheses in more detail (see Deviations from Pre-registered Hypotheses, pp. 2-3). Then, we will explain the development of an individualism (or individualization) and constructive marginalization scale of which only the latter was used for further analysis in the manuscript (see Individualization and Constructive Marginalization Scales, pp. 4-5). Lastly, we will provide the results for the variables individualization and identification with all humanity (see Results, pp. 6-7).

Deviations from Pre-registered Hypotheses

Pre-registration. In our pre-registered form, we stated our expectation of three acculturation strategy clusters to emerge for majority members: integrated, separated and diffuse – with the latter being a synonym for an undifferentiated group.
Manuscript. *Hypothesis 1.* Thus, we expected a minimum of three acculturation strategies to emerge for English HCNs in the present research – separation, integration and undifferentiation.

Pre-registration. *H1a:* The integrated cluster will report significantly lower levels in threat than the separated cluster. The diffuse cluster will be significantly lower or not significantly different in threat scores in comparison to the integrated cluster, but will be significantly lower in threat scores in comparison to the separated cluster.
Manuscript. *Hypothesis 4:* Separated English HCNs will perceive a higher level of cultural threat than integrated and undifferentiated HCNs.

Pre-registration. *H1b:* The integrated cluster will report significantly higher levels in enrichment than the separated cluster. The diffuse clusters will be significantly lower in enrichment than the integrated cluster, but significantly higher or similar to the separated cluster.
Manuscript. *Hypothesis 5:* Integrated HCNs will perceive higher levels in cultural enrichment than separated HCNs. Also, undifferentiated HCNs will show higher levels in cultural enrichment than separated individuals given that such HCNs are likely to be constructively marginalized, and thus are expected to be individuals who thrive in plural societies (J. M. Bennett, 1993).

Pre-registration. *H2 -Exploration:* The diffuse cluster will be significantly higher in individualism or constructive marginalization than the separated cluster and the integrated cluster.
Manuscript. *Hypothesis 2:* Taken together, we suggest that HCNs who follow an undifferentiated acculturation strategy will be more likely to endorse constructive marginalization than integrated or separated HCNs.
Please note that we followed our reviewers' advice to reduce the manuscript's complexity and excluded individualism (or individualization) from our manuscript. Yet, we still report the results here (pp.6-7).

Pre-registration. *H3a:* The separated cluster will report significantly lower identification with all humanity in comparison to the integrated and diffuse cluster. No significant difference is expected between diffuse and integrated clusters.
Manuscript. Please note that we followed our reviewers' advice to reduce the manuscript's complexity and excluded identification with all humanity from our manuscript. Yet, we still report the results here (pp.6-7).

Pre-registration. *H3b:* The separated cluster will report significantly higher identification with English citizens than the diffuse and integrated cluster. The diffuse cluster will be significantly lower in identifying with English citizens in comparison to the integrated cluster.
Manuscript. *Hypothesis 3:* Consequently, we expected that undifferentiated HCNs show lower levels of identification with fellow English citizens (i.e., indicate potential acculturation beyond a behavioural domain; Haugen & Kunst, 2017) than integrated and separated HCNs.

Pre-registration. *H4:* The integrated and diffuse clusters will be higher in **a)** direct contact, **b)** electronic contact with migrants living in the UK, and **c)** electronic contact with internationals living outside of the UK than the separated cluster.
H4d - Exploration: We will inspect whether there are significant differences in areas of residency (highly diverse vs. not) across acculturation clusters.
Manuscript. *Hypothesis 6:* Thus, integrated and undifferentiated English HCNs are expected to live in more diverse local authority districts, have higher levels of perceived direct and online contact with immigrants as well as online contact with geographically distant groups than separated HCNs.

Individualization and Constructive Marginalization Scales

To test whether our measures for individualization and constructive marginalization have achieved an acceptable level of validity and reliability, we explored the following elements. First, we inspected whether two factors would occur that relate to constructive marginalization and individualization. As both theoretically de-emphasize the attachment and belonging to particular cultural groups (Bennett, 1993; Bourhis et al., 1997), we expected an oblique relationship between them. Second, we also expected for both constructs a negative or none-significant correlation with national group commitment and secure-preoccupied nation attachment (convergent validity). Yet, constructive marginalized still require the existence of cultural group boundaries to thrive between them (Bennett, 1993) whilst individualist may not be as dependent on them, given their focus on individual rather than group characteristics in contact situations (Bourhis et al., 1997). Therefore, constructive marginalization should relate positively to cultural enrichment (convergent validity) whereas no such relationship was expected for individualization (discriminant validity). These expectations were pre-registered before data collection (https://osf.io/jqub8).

Materials

The following materials can be found as part of a larger pre-registered project on OSF (https://osf.io/jqub8).

National group commitment (NGC). We reworded the 3-item Multigroup Ethnic Identity Measure-Revised (Phinney & Ong, 2007) to assess participants' level of national group commitment. Using a 6-point Likert scale rather than the original 5-point Likert scale, ranging from "*strongly disagree*" (1) to "*strongly agree*" (6), participants were asked to indicate their opinion to statements such as "I have a strong sense of belonging to my own national group.". Cronbach's alpha was acceptable .91. We then used the 3-items to create a mean variable for national group commitment (M = 3.85, SD = 1.13).

Secure-preoccupied nation attachment (SPNA). We employed Ferenczi and Marshall's (2013) nation attachment subscale as an alternative indicator of participants' relationship to their national group. Participants were asked to indicate the extent to which each of the 5 items was descriptive of themselves on a continuous 6-point Likert scale rather than the original 5-point Likert scale (1 "*not at all like me*" - 6 "*extremely like me*"; e.g., "I know my country will be there when I need it to be."). Cronbach's alpha was acceptable .87 and all items were used to create a mean variable (M = 3.45, SD = .97).

Results

Factor analysis. We conducted exploratory factor analysis in form of principal axis factoring (PAF) with promax rotation with all items for the individualization and constructive marginalization scales. With a KMO value of .81, the scree plot showed two emerging factors – Factor 1 with an eigenvalue of 3.42, explaining 37.95% of variance, and Factor 2 with an eigenvalue of 1.76, explaining 16.63% of variance – resulting in 54.56% of total variance explained. Yet, when considering only items that met the pre-registered factor loading threshold of above .45 (https://osf.io/jqub8), one item of the individualization scale had to be excluded (i.e., "I judge other people by their personal characteristics rather than by their cultural group membership."). Notably, the reversed coded item for the constructive marginalization scale – "I fully belong to multiple cultural groups." – loaded negatively onto its respective factor. Thus, we also excluded this item from further analysis. Lastly, and against our assumptions, the factor correlation was positive and significant (.19, $p < .05$), but it was too small to indicate an oblique relationship (Tabachnick & Fiddell, 2007).

Therefore, we conducted a second PAF with varimax rotation excluding the two items previously mentioned (see Table 1). Again two factors emerged, with 59.35% of the total variance explained (KMO = .74). All factor loadings were above .45, with four items loading on constructive marginalization and two items loading on individualization. Cronbach's alphas were acceptable for constructive marginalization (α = .83), similar to the Spearman-Brown reliability coefficient for individualization (.76, Eisinga et al., 2013). Pearson's correlation also revealed a small positive association between the two variables, r = .20, p = .003.

Table 1
Rotated Factor Loadings for Constructive Marginalization and Individualization

	Components	CM	I
1	I move and live harmoniously between two or more cultures.	**.82**	-.03
2	I thrive by living between cultures rather than being fully part of them.	**.80**	.08
3	I enjoy having no roots as I feel at home wherever I am.	**.53**	.21
4	I float between cultural groups, but can fit into any.	**.83**	.14
5	I do not identify with any cultural group, but with values I have as an individual.	.09	**.78**
6	I regard myself as an individual rather than a member of a specific cultural group(s).	.10	**.77**
	EIGENVALUES	2.82	1.51
	% OF VARIANCE	40.53	18.82

Notes. Factor loadings > .45 in boldface. CM: constructive marginalization. I: Individualization.

Convergent and discriminant validity. We proposed that both constructs show a negative or none-significant correlation with national group commitment (NGC) and secure-preoccupied nation attachment (SPNA, convergent validity). This was supported with individualization revealing a small negative correlation with NGC, r = -.26, p < .001, and a none-significant relationship with SPNA, r = -.13, p =.054. Similarly, constructive marginalization showed a small negative correlation with NGC, r = -.33, p < .001, and a none-significant relationship with SPNA, r = -.06, p = .389.

Lastly, and as expected, constructive marginalization indicated a medium positive correlation with cultural enrichment, r = .47, p < .001, whilst individualization indicated a none-significant correlation, r = .13, p = .060. Thus, we conclude that our measures for individualization and constructive marginalization have achieved an acceptable level of validity and reliability.

Results

Here we report the missing results for the variables individualization and identification with all humanity which were noted in our pre-registered hypotheses H2 and H3a. First, Table 2 shows how these two variables correlate with all other main variables as well as their Means and Standard Deviations. Notably, individualization significantly and positively related to positive affect towards immigrants, constructive marginalization, and identification with all of humanity as well as negatively to cultural threat, identification with English nationals, and national culture maintenance. Identification with all humanity correlated significantly and positively with positive affect towards immigrants, cultural enrichment, constructive marginalization, identification with English nationals, all contact variables and immigrant culture adoption as well as negatively with cultural threat and national culture maintenance.

Table 2

Pearson's Correlation Coefficients, Means and Standard Deviations for all Main Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Social Desirability													
2. Positive Affect towards Immigrants	.003												
3. Cultural Threat	.01	**-.67****											
4. Cultural Enrichment	-.05	**.73****	**-.57****										
5. Constructive Marginalization	.10	**.40****	**-.29****	**.47****									
6. Individualization	.02	**.16**	**-.24****	.13	**.20***								
7. Identification with English Nationals	**.17**	**-.15**	**.28****	**-.17**	-.11	**-.17**							
8. Identification with all Humanity	.09	**.62****	**-.46****	**.61****	**.47****	**.18***	**.23****						
9. Direct Intergroup Contact	.06	**.44****	**-.27****	**.47****	**.39****	-.08	-.04	**.35****					
10. Electronic Contact with Immigrants	.02	**.26****	**-.20***	**.36****	**.27****	-.02	.08	**.28****	**.71****				
11. Electronic Contact with Internationals	.10	**.18***	-.10	**.27****	**.28****	-.08	-.01	**.21***	**.45****	**.52****			
12. National Culture Maintenance	.13	**-.48****	**.47****	**-.47****	**-.37****	**-.24****	**.57****	**-.30****	**-.27****	**-.15**	**-.19***		
13. Immigrant Culture Adoption	-.01	**.57****	**-.37****	**.61****	**.51****	.02	**-.18***	**.49****	**.45****	**.32****	**.25****	**-.35****	
Scale Range	1-6	0-100	1-6	1-6	1-6	1-6	1-6	1-5	1-5	1-6	1-6	1-6	1-6
M	3.36	69.34	1.55	4.37	2.92	4.60	3.62	3.38	3.48	3.35	3.11	3.89	2.94
SD	0.94	22.72	0.97	1.34	1.09	1.00	0.70	0.73	1.29	1.57	1.52	1.15	1.06

Note. In bold $p < .05$, *$p < .01$, and ** $p < .001$. [a]Spearman-Brown reliability coefficient is reported (Eisinga et al., 2013).

Then we conducted one-way ANCOVAs including the three strategies as our independent variable, positive feelings towards immigrants, qualification, occupation, migratory experiences, and participants' referendum vote as control variables, and identification with all humanity and individualization as our outcome variables. As can be seen in Table 3, no significant differences were revealed across the three strategy groups for individualization or individualism (H2) and none for identification with all humanity (H3a).

Table 3

Mean Differences across Proximal-Acculturation Strategies for all Main Variables

Hs	Variables	Assimilation (n = 26)	Integration (n = 142)	Separation (n = 52)	Pairwise comparison	$F(2, 212)$	p	η_p^2
3	Identification with all Humanity[1]	3.79(0.61)	3.44(0.63)	2.99(0.87)	S = A = I	.72	.486	.01
4	Individualization[2]	5.02(1.04)	4.63(0.94)	4.31(1.07)	S = A = I	2.66	.072	.02

Note. *$p < .05$, ** $p < .001$. Hs: Hypotheses. S: Separated. I: Integrated. A: Assimilated. Results for positive affect towards immigrants were significant, [1]$F(1,212) = 98.27$, $p < .001$, $\eta_p^2 = .32$. Results for qualification were significant, [2]$F(1,212)$: 5.48, $p = .020$, $\eta_p^2 = .03$.

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