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With an Open Mind: Openness to Experience Moderates the Effect of Interethnic Encounters on Support for Immigration

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Abstract This paper examines whether the effect of interethnic encounters on natives' attitudes toward immigration varies with the Big Five personality trait Openness to Experience. We hypothesize that individuals who score high on openness, and who therefore are more appreciative of and responsive to new experiences, react more positively/less negatively to interethnic encounters. We test this conjecture on two surveys collected in Denmark and Canada. In line with our expectations, the analyses suggest that openness positively moderates the effect of interethnic encounters on immigration attitudes: Compared to those with lower levels of openness, more open individuals express more pro-immigration attitudes when experiencing both personal interethnic contact and self-reported exposure to ethnic diversity in the neighborhood.

Keywords: Immigration attitudes; Interethnic contact; Out-group exposure; Openness to Experience; Personality.

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Introduction

Western societies continue to experience massive immigration in the first part of the 21st century, and immigrants and descendants of immigrants constitute an increasing share of the population in the receiving countries. As a consequence, the question of how natives respond to growing ethnic diversity is increasingly pertinent, and a central aspect concerns how interethnic encounters shape natives' political attitudes on immigration and immigrants as well as ethnic minorities more generally.¹ Two strands of literature examine this question: One focuses on proximity (i.e. exposure) to immigrants in (mainly) residential contexts (e.g., Enos 2014; Hopkins 2010; Oliver and Wong 2003) and the other on the role of personal contact (for reviews see Brown and Hewstone 2005; Pettigrew and Tropp 2006; Pettigrew 1998).² Findings diverge across these two traditions: Personal interethnic contact is mainly found to promote pro-immigration/immigrant attitudes, while the effect of contextual exposure to ethnic minorities on attitudes towards immigration is more mixed (Brown and Hewstone 2005; Fetzer 2000; Hainmueller and Hopkins 2014; Pettigrew and Tropp 2006; Schneider 2008; Semyonov and Glikman 2008; Wagner et al. 2006).

The two perspectives focus on different types of interethnic encounters, but traditionally apply the same basic premise that natives respond uniformly to such experiences. That is, whether having personal contact with or casually observing ethnic minorities in residential settings, natives are assumed—at least implicitly when modelled statistically—to react independently of their personal characteristics and situational or contextual circumstances. Recently, however, scholars have gone beyond this assumption of a uniform response to interethnic encounters and examined under which conditions these encounters influence immigration attitudes and related constructs. Specifically, studies have documented that the effect of interethnic encounters varies with features of the national and residential context (Branton and Jones 2005; Cho and Baer 2011; Hopkins 2010; Newman 2013; Sønderskov and Thomsen 2015), as well as with personal characteristics such as individuals' structural position (e.g., socio-economic status) and ideological beliefs (e.g., Hawley 2011; Karreth, Singh, and Stojek 2015; Quillian 1995).

In this study we expand on the idea that the effect of interethnic encounters on immigration attitudes is contingent. However, instead of scrutinizing contextual moderators, or socio-economic or ideological moderators at the individual level, we focus on a different, and hitherto overseen, class of moderators in the literature on interethnic

encounters, namely deeply-held individual predispositions in terms of personality traits. In line with recent research (Gerber et al. 2010; Mondak 2010), we theorize and examine how the Big Five personality trait openness to experience moderates the impact of various types of interethnic encounters on attitudes toward immigration. Because openness to experience influences how and in what light novel and alternative impressions and experiences are processed (Costa & McCrae, 1992; Goldberg, 1992; McCrae & Costa, 1999), we argue that this trait is likely to moderate how natives react to interethnic encounters. More specifically, since individuals who score higher on openness are more appreciative of new experiences and alternative ways of life, we expect interethnic encounters to generate more support for immigration among those who score high on this trait than among those who score lower.

We examine the hypothesized moderating impact of openness on the relationship between interethnic encounters and attitudes towards immigration using survey data from Canada and Denmark. The empirical analyses corroborate our expectations and show that openness positively moderates the association between interethnic encounters and immigration attitudes in models controlling for a wide-range of potentially confounding variables including the other four Big Five traits. The results suggest that the positive effect of personal interethnic contact on pro-immigration attitudes is stronger for people with higher scores on openness, while the negative effect of self-reported neighborhood exposure is stronger for people with low scores on openness.

Theories on the Consequences of Diversity: Conflict and Contact

Throughout the past sixty years, scholars have debated how interethnic encounters affect individuals' attitudes toward out-groups, including those of different ethnicity and—in the case of natives—immigrants. Proponents of the so-called conflict theory argue that out-group members are perceived as competitors for scarce resources, and that interethnic encounters therefore generate prejudice and increased interethnic hostility (e.g. Blalock 1967; Blumer 1958; Bobo 1999; Key 1949). Proponents of contact theory, on the other hand, argue that out-group encounters may breed interethnic understanding and thus diminish prejudice (Allport 1954; Pettigrew 1998). In support of contact theory numerous studies conclude that personal contact tends to reduce prejudice and promote more positive out-group attitudes (Pettigrew and Tropp 2006; Semyonov and Glikman 2008;

Wagner et al. 2006). Moreover, recent studies conclude that neighborhood out-group exposure—even without personal contact—can improve interethnic relations (Oliver & Wong, 2003) and may also affect policy attitudes by increasing support for immigration (Hood & Morris, 1997; Hopkins, 2013). Yet, the positive effect of neighborhood exposure is highly contested: A number of studies report that residential interethnic exposure generates opposition to immigration, and still others find that exposure does not significantly affect out-group attitudes (Enos 2014; Fetzer 2000; Rocha et al. 2011; see Hainmueller and Hopkins 2014 for a review).

Qualifying the debate, the literature has recently turned to examine under which conditions interethnic encounters influence immigration (and racial) attitudes, and multiple studies conclude that the effect is not universal, but rather depends on both contextual and individual factors. For instance, research has shown that negative exposure effects are more likely in socio-economically deprived areas (Branton & Jones 2005; Cho & Baer 2011), segregated areas (Rocha & Espino 2008), and areas that have previously been ethnically homogenous (Newman 2013). Relatedly, Hopkins (2010) and Sønderskov & Frølund (2015) demonstrate that national media or political attention to immigrant issues moderates the out-group exposure effect on immigration/immigrant attitudes. At the individual level, the relationship is found to be moderated by socio-economic status (Quillian 1995), political ideology/authoritarianism (Asbrock et al. 2011; Hawley 2011; Karreth, Singh, and Stojek 2015), political sophistication (Danckert, Dinesen and Sønderskov 2017), and uncertainty aversion (Johnston, Newman, and Velez 2015).

While the abovementioned studies have advanced the debate by pointing to moderators of the effect of interethnic encounters at the national, residential, and individual level, the moderating role of individual dispositional differences in terms of personality has received surprisingly scant attention. This is unfortunate as such differences are fundamentally linked to how individuals react to experiences (Gerber et al., 2010; Mondak, 2010), and therefore plausibly also to how individuals respond to interethnic encounters. Indeed, new research shows that individual differences with regard to authoritarianism and risk aversion moderate individuals' reactions to neighborhood exposure to immigrants (Asbrock et al. 2012; Johnston, Newman, and Velez 2015). While this clearly points to the relevance of focusing on the moderating role of individual dispositions, individual differences related to other, more generalized aspects of personality remains unexplored.

Moreover, how individual dispositions affect individuals' reactions to personal interethnic encounters rather than merely neighborhood exposure to immigrants has to our knowledge not been addressed previously. Accordingly, the contribution of this article is to introduce and test (selected) personality traits as moderators of the impact of interethnic encounters on immigration attitudes.

Openness to Experience as Moderator of Interethnic Encounters

Personality refers to stable patterns of cognition, emotion and behavior that vary systematically among individuals (Mischel, Shoda, & Smith, 2003). In recent years, the Five Factor Model, with the associated Big Five personality traits Agreeableness, Conscientiousness, Extraversion, Neuroticism, and Openness to Experience, has emerged as one (arguably the) dominant model of human personality in psychology (Costa and McCrae 1992; Goldberg 1992; John, Naumann, and Soto 2008), which has spilled over to other fields, including research on political and social attitudes (e.g., Gerber et al. 2010; Mondak 2010). Much of the recent interest in personality in the literature on attitudes has evolved around how personality traits interact with various situational and environmental factors in shaping attitudes. In essence, the idea is that individuals—depending on their personality—respond differently to the same cues or experiences when they form attitudes or act politically (Dinesen, Klemmensen, and Nørgaard 2016; Gerber et al. 2010). Or, conversely, that the effect of personality on political behavior plays out differently depending on the situation and context (Mondak, 2010).

Parallel to the focus of theories of interethnic contact and exposure, personality psychology has long been concerned with prejudice and related attitudes (Adorno et al. 1950; Altemeyer 1996; Sibley and Duckitt 2008). However, despite their common preoccupation with inter-group attitudes, the literatures on personality psychology and interethnic encounters have been largely disconnected.³ We argue that the two can be fruitfully combined by suggesting that personality plays a role in moderating the effect of interethnic encounters on immigration attitudes. In doing so, we build on the Dual Process Model suggested by Sibley et al., which posits that “prejudice [in this case, immigration attitudes] are activated by specific situational or contextual factors, which when paired with individual differences in personality, generate prejudice toward specific groups” (Sibley et al. 2013, 554–555). Here, however, we consider personality traits rather than interethnic

encounters (i.e. the situational or contextual trigger) as the moderating factor (we return to this question in relation to the empirical results).

Specifically, our argument concerns the personality trait Openness to Experience because some of its defining characteristics are likely to shape appraisal of cues regarding the ethnic background of others in social encounters. More generally, openness is a deep-seated individual difference in the processing of experiences (McCrae & Costa, 1997, p. 826). Individuals on the high end of this trait appreciate alternative ideas, people and ways of life (McCrae & Costa, 1997) and actively seek out new and unfamiliar experiences (McCrae & Costa, 1997, p. 839). Conversely, less open individuals tend to have a preference for familiarity and simplicity, which in turn leads them “to draw sharp lines between in-group and out-group and prefer the former to the latter” (McCrae, 1996, p. 326). Openness is thus related to how we experience people who are different from us. Because peoples’ ethnic background is a cardinal category in this regard, it seems plausible that interethnic encounters influence immigration attitudes differently depending on individuals’ level of openness. Given their attraction to the alternative and the unfamiliar, more open people are likely to respond more positively to interethnic encounters. Conversely, less open individuals will likely feel threatened by immigrants who are different from themselves on a number of dimensions.⁴ Thus, to the extent that interethnic encounters affect immigration attitudes, we expect the effect to be more positive/less negative for people with higher levels of openness.

As a follow-up to the conjecture of the moderating role of openness, one may speculate whether this operates identically for residential interethnic exposure and more intimate social interaction with people of different ethnic background. *Prima facie* there is no reason to expect differences across these types of encounters. Yet, previous studies generally show positive effects of personal contact, while the effects of neighborhood exposure are less consistent (see Hainmueller & Hopkins, 2014; Pettigrew & Tropp, 2006; Pettigrew, 1998 for reviews). In effect, higher levels of openness might amplify the positive effects of personal interaction and mitigate the potentially negative effects of residential exposure.

Moreover, one point of clarification is needed regarding the nature of the relationship between openness and interethnic encounters. Specifically, we expect the relationship to be characterized by two processes. First of all, individuals with higher levels

of openness may self-select into interethnic encounters as they are generally attracted to diverse others (Jackson & Poulsen, 2005). Yet, our point is that when placed in the same social context, i.e. a residential area or a social circle with a certain share of ethnic others, individuals are likely to respond differently to these encounters based on their level of openness. The latter process is the main focus of this paper, although we also address the former.

While we consider openness to be a particularly likely moderator of the relationship between interethnic encounters and immigration attitudes, other personality traits may also condition the relationship. For instance, research has shown that the other traits in the Big Five model also correlate with individuals' immigration attitudes (Dinesen, Klemmensen, and Nørgaard 2016; Gallego and Pardos-Prado 2014), and may therefore also moderate the effect of interethnic encounters on immigration attitudes. As our argument specifically concerns openness, the empirical analyses primarily focus on the interaction between interethnic encounters and this personality trait. However, in subsequent analyses we also address potential interactions between interethnic encounters and the other four Big Five personality traits (neuroticism, extraversion, agreeableness, and conscientiousness) to put the openness analyses in perspective.

Research Design

To test the expectations, we use two cross-sectional surveys conducted in Canada and Denmark, respectively. To our knowledge, no other surveys encompass all necessary variables: the relevant personality items along with measures of interethnic encounters and immigration attitudes.

Denmark and Canada are very different in many respects with relevance for our study, most notably the composition of the immigrant population and national policy responses to immigration. As a consequence of the Canadian point system for immigration, the immigrant population in Canada has a considerably higher skill-level than immigrants in Denmark and other European countries (Kymlicka, 2010). Moreover, political responses to immigration in the two countries differ substantively. Whereas Canada emphasizes a policy of multiculturalism, Danish immigration policy has since 2001 mainly reflected an assimilationist approach (Hedetoft 2006; Kymlicka 2010). These substantive differences imply that finding parallel patterns in Canada and Denmark would indicate that individual

predispositions moderating the relationship between interethnic encounters and immigration attitudes is a more general phenomenon. Nevertheless, such a pattern would obviously have to be replicated in other settings to establish the generality of this claim.

Given that we employ observational data, endogeneity caused by selection makes it impossible to draw definitive conclusions about the effect of interethnic encounters on political attitudes and the moderating role of openness. If individuals select into more or less ethnically diverse social contexts—be it friendship circles or neighborhoods—based on any unmeasured trait, this could potentially bias the estimated effect of interethnic exposure/contact and, consequently, the moderation effect of openness. Similarly, bias could arise if individuals select into more or less ethnically diverse social contexts based on their attitudes towards immigration. While we cannot rule out selection bias, we follow previous studies in trying to limit this by including a wide range of control variables that have previously been found to correlate with immigration attitudes (see below).

Data and Measurement

The Danish data were collected in 2010 as a web-survey,⁵ and the Canadian data were collected as part of the Canadian Election Studies in 2011.⁶ Since we are specifically interested in natives' attitudes, we restricted the samples to this group (based on country of birth (Canada) and citizenship (Denmark)). This leaves us with 645 Canadian respondents (48 % female, $M_{age} = 55$) and 3,584 Danish respondents (53 % female, $M_{age} = 52$).

The survey items used to measure our key variables—immigration attitudes, interethnic encounters, and openness—differ across the Danish and Canadian data. While this obviously complicates direct comparisons of effect sizes across the two countries, we consider the measures employed in both the Canadian and Danish analysis to validly reflect the variables of interest making it possible to compare the identified patterns across the two countries.

Immigration Attitudes: In the Danish data, we measure immigration attitudes by an item asking whether Denmark should accept more immigrants (response categories: "strongly agree," "somewhat agree," "somewhat disagree," and "strongly disagree").⁷ The item is treated as continuous and rescaled to range between 0 and 10 (from minimum to maximum support for immigration) with a mean of 5.0 (std. dev. = 3.4). In the Canadian

data, immigration attitudes are measured by an index comprised of two items. The first item reads: "Do you think Canada should admit more immigrants, fewer immigrants, or about the same?" (coded 1, 0 and 0.5, respectively). The second item asks respondents about their support for an immigration application from a fictitious Sri Lankan person. Response categories included "strongly support," "somewhat support," "somewhat opposed," and "strongly opposed" (coded 1, 0.67, 0.33, and 0, respectively).⁸ The two items correlate significantly and strongly ($\gamma = 0.53$). They were therefore combined to a summated scale, which was recoded to range between 0 and 10 (from minimum to maximum support for immigration). The mean value for the scale is 5.8 (std. dev.=2.4).^{9, 10}

Interethnic Encounters: We measure interethnic encounters along two dimensions: personal interethnic contact and neighborhood exposure to people of foreign ethnic origin. Personal interethnic contact is measured by a dummy variable indicating contact. In the Danish data, we consider respondents to have personal interethnic contact if they report having immigrant/refugee friends or talking to immigrants/refugees "every now and then," "often," or "very often" (coded 1). In the Canadian data, respondents are considered to have personal interethnic contact if they socialize with recent immigrants or Muslims, or have either close friends or coworkers of foreign ethnic origin.

To measure residential interethnic exposure, we employ administrative data regarding the share of visible minorities living in respondents' neighborhoods. In Canada, this is measured by the share of visible minorities in the census tract¹¹; in Denmark by the share of non-Western first and second generation immigrants in the municipality.¹² Since the geographical units (i.e. census tracts and municipalities), on which the objective measures are based, may be too large to reasonably proxy what individuals experience in their everyday lives (Dinesen and Sønderskov 2015), we supplement the administrative measures with respondents' self-reported level of interethnic neighborhood exposure. This is gauged by the question "How many refugees or immigrants live in your neighborhood?" with response categories "none," "few," "some," and "many" (coded 0, 0.33, 0.67, and 1, respectively). The two measures are correlated at $r = 0.40$. Although the subjective estimate may be influenced by factors other than perceived neighborhood composition (e.g., other attitudes), research indicates that individuals' understanding of their neighborhood is fairly accurate (Enos and Wise 2012; Wong et al. 2012). Unfortunately, a self-report measure is

not available in the Canadian data. Appendix B reports further description and descriptive statistics regarding the various measures of interethnic encounters.

Openness to Experience: In the Danish data, we measure the Big Five personality traits by the NEO-PI-R inventory, which contains 12 distinct items per trait. The openness items correlate as expected ($\alpha = 0.73$). We therefore constructed a summated scale ranging from 0 to 1 (lowest to highest observed level of openness), which has a mean of 0.52 (std. dev.=0.15). In the Canadian data, the Big Five personality traits are measured by the TIPI measure (using a four-point response scale instead of the original seven-point scale) containing two items per trait (Gosling, Rentfrow, and Swann, 2003). Openness is tapped by the following two items with answer categories "strongly agree," "somewhat agree," "somewhat disagree," and "strongly disagree": (1) "You are open to new experiences, complex" (reversed) and (2) "You are conventional, uncreative".¹³ The two items correlate acceptably ($\gamma = 0.37$) and were combined into a summated scale that was recoded to go from 0 to 1 (lowest to highest observed level of openness). It has a mean of 0.64 (std. dev.=0.22). The distribution of openness for both the Canadian and Danish samples is displayed in Appendix C.

Control Variables

To minimize selection bias, we include a number of potentially confounding variables. At the individual level we include the standard controls age, age squared, income, education, and employment status. Additionally, we control for the other four Big Five personality traits (neuroticism, extraversion, agreeableness, and conscientiousness). At the contextual level we control for income, unemployment rate, and population density in the census tract (Canadian analyses) or municipality (Danish analyses). Additionally, we control for mean level of education and the share of single parent households in the Danish analyses (not available in the Canadian data). In the Canadian analyses, we include dummies for the major five geographical regions (BC, Prairies, Quebec, Ontario, and the Western Provinces). Finally, we control for the share of ethnic minorities in the census tract/municipality in the analyses of the effect of interethnic encounters measured at the individual level (i.e. personal contact or perceived neighborhood exposure). The measurement of all variables is described in Appendix A.

Results

We begin by investigating whether openness moderates the effect of personal interethnic contact on immigration attitudes, and then turn to the parallel analysis for neighborhood exposure. All models are estimated by OLS regression.¹⁴ Table 1 reports the analyses regarding the effect of interethnic personal contact (Appendix D reports coefficients on all control variables).^{15,16}

Table 1: OLS Regression analyses regarding the effect of personal interethnic contact (0-1) on immigration attitudes (0-1).

Model	Canada		Denmark	
	1a	1b	2a	2b
Openness	0.233 (0.487)	-1.122 ⁺ (0.657)	4.287*** (0.527)	2.883*** (0.637)
Personal interethnic contact	0.493* (0.215)	-0.688 (0.642)	0.706*** (0.118)	-0.256 (0.367)
Personal interethnic contact*Openness		1.947* (0.893)		1.969* (0.751)
Individual level controls	Yes	Yes	Yes	Yes
Contextual level controls	Yes	Yes	Yes	Yes
Experimental conditions dummies	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	No	No
Constant	Yes	Yes	Yes	Yes
N	588	588	3322	3322
R ²	0.126	0.132	0.371	0.373

Note: Standard errors in parentheses; Standard errors are clustered within municipalities (Danish analyses)/census tracts (Canadian analyses). ⁺ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; two-tailed test.

In both countries, the coefficient of the interaction term is positive and significant (Canada: $b=1.947$; Denmark: $b=1.969$). The analyses thus support the theoretical expectation that openness positively moderates the effect of interethnic encounters on immigration attitudes: Individuals who are more open to experience develop more pro-immigration attitudes than less open individuals when experiencing interethnic personal contact. The results are illustrated in Figure 1. The figure shows that in Canada, the correlation between

interethnic contact and immigration attitudes is negative, but insignificant for individuals with low openness scores. However, with higher levels of openness, personal interethnic contact is increasingly positively related to pro-immigration attitudes. Similarly, in Denmark, the correlation between personal interethnic contact and pro-immigration attitudes is more positive for individuals with higher levels of openness.

Figure 1: The predicted effects of personal interethnic contact on immigration attitudes (0-10) (solid line) with 95 % confidence intervals (broken line).

Note: Vertical dashed lines indicate 10th and 90th percentile values of Openness to Experience

Figure 1 also illustrates that the moderating impact of openness is substantial. In Canada, the predicted effect of interethnic contact for individuals with high openness (the 90th percentile) corresponds to the effect of having a university degree compared to having only a high school degree or less. For individuals with low openness (the 10th percentile), however, the predicted effect of interethnic contact is indistinguishable from zero (the predicted effect is 0.09 and 1.26 for individuals with low and high openness, respectively). The same pattern is evident in Denmark: The predicted effect of interethnic contact for

individuals with high openness (90th percentile) is 1.14, while for individuals with low openness (the 10th percentile) the predicted effect is only 0.42. Similarly to in Canada, this difference in predicted effects corresponds to the difference in immigration attitudes between individuals who have a university degree and individuals who have only attended primary school. These comparisons suggest that openness substantially moderates individuals' attitudinal responses to personal interethnic contact. Additionally, the similarity of the results in the two countries indicates that the moderating impact of openness exists independently of the composition of the immigrant population and the national political context.

We now turn to the analyses regarding the moderating impact of openness on the effect of interethnic neighborhood exposure. The findings are reported in Table 2. Models 3a–4b report results with objective measures of contextual ethnic diversity (census tracts in Canada and municipalities in Denmark). Models 5a and 5b are based on respondents' self-reported measures of interethnic neighborhood exposure in Denmark.

As is evident from model 3b and 4b, measuring the share of ethnic minorities within local contexts (census tracts and municipalities), we do not find a significant moderation by openness, although the coefficients for the interaction terms are all in the expected direction (positive) (Canada: $b=1.054$; Denmark: $b=2.459$).¹⁷ Accordingly, these models do not provide solid evidence in favor of our hypothesis. However, turning to model 5b, the interaction between self-reported neighborhood exposure and openness is positive and significant in the Danish data ($b=2.501$).¹⁸ Figure 2 illustrates this result and shows that interethnic neighborhood exposure is associated with more restrictive attitudes for individuals with low openness. However, the negative relationship is only significant for individuals with quite low openness (approximately below .35) and becomes positive (though not significant) for individuals with higher scores on this trait (above approximately 0.60). This suggests that a high level of openness shields the negative effect of neighborhood exposure.

Table 2: OLS Regression analyses regarding the effect of neighborhood exposure to ethnic minorities on immigration attitudes (0-1).

	Canada		Denmark		Denmark	
Model	3a	3b	4a	4b	5a	5b
Measure of interethnic neighborhood exposure	Census tract share	Census tract share	Municipality share	Municipality share	Self-reported estimate	Self-reported estimate
Openness	0.047 (0.502)	-0.061 (0.499)	4.668*** (0.511)	4.472*** (0.753)	4.684*** (0.535)	3.648*** (0.692)
Neighborhood ethnic diversity	-0.195 (0.877)	-0.918 (2.986)	-1.743 (1.177)	-3.000 (4.862)	-0.219 (0.243)	-1.503* (0.642)
Neighborhood ethnic diversity*Openness		1.054 (4.117)		2.459 (9.042)		2.501* (1.145)
Individual level controls	Yes	Yes	Yes	Yes	Yes	Yes
Contextual level controls	Yes	Yes	Yes	Yes	Yes	Yes
Experimental conditions dummies	Yes	Yes	Yes	Yes	Yes	Yes
Regional dummies	Yes	Yes	No	No	No	No
Constant	Yes	Yes	Yes	Yes	Yes	Yes
N	612	612	3334	3334	3151	3151
R ²	0.111	0.111	0.364	0.364	0.362	0.363

Note: Standard errors in parentheses. Standard errors are clustered within municipalities (Danish analyses)/ census tracts (Canadian analyses); * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; two-tailed test.

Figure 2: The predicted effects of self-reported neighborhood exposure to immigrants/refugees on immigration attitudes (0-10) (solid line) with 95 % confidence intervals (broken line) in Denmark.

Note: Vertical dashed lines indicate 10th and 90th percentile values of Openness to Experience

Notably, the results based on the self-reported neighborhood exposure measure are robust to the inclusion of controls for whether respondents engage in personal interethnic contact (see Appendix E).¹⁹ This indicates that the neighborhood effect is not due to more contact facilitated by the geographic proximity, but is indeed an effect that stems from mere exposure.

Thus, the interaction between neighborhood exposure and openness is significant when measured by the self-reported measure, but not when proxied by the ethnic composition in census tracts and municipalities. This could reflect that subjective perceptions of interethnic exposure matter beyond “objective” realities (Wong et al., 2012). However, this divergence may also be due to the demographic composition of census tracts and municipalities—both relatively aggregate administrative contextual units—being weak indicators of what individuals experience in their everyday lives (Dinesen

and Sønderskov 2015; Wong et al. 2012). Conversely, the self-reported estimate of the ethnic composition of the neighborhood arguably taps into the ethnic diversity of individuals' actual residential surroundings. Future research would benefit from objective (i.e. administrative) data on the ethnic composition of respondents' proximate neighborhood.

In subsequent analyses, we have also investigated whether other Big Five personality traits condition attitudinal responses to interethnic encounters. The results are reported in Appendix F. We find no general pattern of moderation of the effect of interethnic encounters by the four remaining personality traits. In the Danish data, we find indications of conscientiousness and extraversion significantly moderating the impact of personal interethnic contact (stronger effects for high conscientiousness and low extraversion). However, as this finding does not replicate in the Canadian context, nor for the Danish subjective neighborhood measure, and since we did not have strong theoretical expectations in this regard, we will simply note this relationship and leave it to future research to hypothesize and empirically scrutinize it.²⁰

As noted previously, we also expected openness to condition individuals' likelihood of engaging with ethnic others in the first place. Our data generally support this contention. In both Canada and Denmark, openness is significantly positively related to the likelihood of engaging in personal interethnic contact. The same tendency applies to neighborhood exposure (both for the self-reported and objective neighborhood composition measure), although the relationship is not significant at conventional levels (see Appendix G). This indicates that a two-step process occurs in which individuals first select into interethnic encounters based on their level of openness and then subsequently react differently to these encounters based on their levels of this personality trait. We discuss the implication of this process below.

Finally, while finding a positive interaction between interethnic encounters and openness is in line with our theory regarding the moderating influence of openness on the effect of interethnic encounters on immigration attitudes, we cannot, with the current data, rule out that this result reflects the opposite moderation—that interethnic encounters moderate the effect of openness. Yet, the positive interaction between interethnic encounters and openness runs counter to at least one alternative theoretical account based on contact theory, for which the underlying rationale is that outgroup contact reduces the

need to rely on stereotypes and predispositions (Allport, 1954) when forming opinion on these groups. From this perspective one would thus expect a negative interaction between interethnic encounters and openness since the former is expected to “crowd out” the importance of the latter. While far from definitive evidence for the specific moderation suggested by us, this at least renders one alternative account implausible. In sum, the analyses relatively strongly indicate that openness positively moderates both the effect of more intense personal interethnic encounters as well as more subtle cues provided by the ethnic composition of the neighborhood.²¹ Moreover, while conditional on individuals’ level of openness, the findings generally correspond to earlier findings regarding the substantive effects of personal interethnic contact vis-à-vis neighborhood exposure to ethnic diversity. Specifically, the predicted effect of personal contact is positive (or negative and insignificant) for all levels of openness, whereas the effect of neighborhood exposure is negative (or positive and insignificant) for all levels of openness.

Discussion and Conclusion

Core aspects of the Big Five personality trait openness to experience relate to whether individuals appreciate new and foreign experiences, and we therefore hypothesized that openness conditions how interethnic encounters affect individuals’ attitudes towards immigration. Specifically, we expected individuals who score high on this personality trait to be more likely than less open individuals to perceive interethnic encounters positively and therefore to display less restrictive immigration attitudes in response to such contact and exposure. We tested this proposition in two independent surveys, collected in Canada and Denmark, and using various indicators of interethnic encounters we found support for our conjecture: openness strengthens the positive effects of personal contact and shields the negative consequences of less intimate encounters in terms of neighborhood exposure. Moreover, the fact that the results are parallel across Canada and Denmark—countries that face substantively different challenges relating to immigration and are characterized by markedly different public discourses on this topic—indicates that the moderating impact of openness is not confined to specific contexts. Instead, a plausible interpretation is that the moderation by openness exists independent of the political context and is a more general feature related to the way individuals respond to interethnic encounters.

Our findings have marked implications for the development of natives' opinions about immigration in response to interethnic encounters in Western societies. Indeed, interethnic encounters seem to produce distinct reaction patterns depending on individuals' level of openness. Specifically, individuals higher on openness have a greater propensity to take part in personal contact with others of different ethnic background in the first place, and then subsequently become more positive towards immigration based on these encounters compared to their low-openness counterparts. For this group, on the other hand, a negative reinforcement might take place: Because individuals low on openness engage less in personal interethnic contact, they are more likely to obtain their cues about immigrants from other sources—including casual exposure—which would, given their low level of openness, lead them to develop more restrictive immigration attitudes. The contrast between these two reaction patterns is striking and may be one explanation for the salience of and persistent disagreement on immigration as a political issue.

As previously acknowledged, one important limitation of our study is the use of observational data for investigating what is in essence a causal relationship. While we believe that we have reduced concerns over confounding by unobserved variables considerably by including a very rich set of control variables, our results might still reflect reverse causality, i.e., that openness influences the degree to which individuals self-select into interethnic encounters based on their attitudes towards immigration. That said, establishing that the association between interethnic encounters and immigration attitudes varies by openness in the—to our knowledge—best suited existing data is an important first step in verifying what we believe is a plausible theoretical account of the processes underlying immigration attitudes in the face of interethnic encounters. We encourage researchers to follow up and test the conjecture further, preferably by means of experimentally altering interethnic encounters (cf. Enos, 2014 for one approach in this regard), thus allowing for stronger causal statements.

Notes

¹ Throughout the paper, we use the term “encounters” as an overarching label referring to *both* personal contact and casual (residential) exposure. Differentiating between the intensity of encounters, we use the term “personal contact” to refer to more intimate face-to-face interactions, and “exposure” to refer to casual residential exposure.

² Still others examine how interethnic contact mediates the effect of interethnic contextual exposure (Schmid, Ramiah & Hewstone 2014).

³ See Turner et al. (2014) and Jackson & Poulsen (2005) for notable exceptions examining how intergroup contact *moderates* the effect of three Big Five traits on outgroup attitudes.

⁴ Along the same lines, Johnston et al. (2015) argue and show that risk aversion impact individuals’ reactions to increasing shares of immigrants within the local community.

⁵ The sample, drawn from an online panel, was stratified by gender, age, region, and education, and the response rate was 45 percent. To make the sample more representative we employ a post-stratification weight in the analyses.

⁶ The Canadian Election Studies 2011 were carried out in four survey rounds with the same individuals around election time. As the personality items were asked in the last wave, which was administered online as a web-survey, the sample is limited in size and subject to attrition bias. Two-tailed t-tests comparing participants in the fourth and first wave indicate that participants in the fourth round are significantly older ($p < 0.01$), wealthier ($p < 0.01$), more likely to be male ($p < 0.05$), and more educated ($p < 0.01$). Post-stratification weights are employed to increase representativeness.

⁷ The item was part of a survey experiment in which respondents were randomly assigned to one of five versions. Four versions varied two characteristics of the immigrants in question, namely skill level (high-skilled vs. low-skilled) and country of origin (Western vs. non-Western countries outside EU) in a 2x2 design. The fifth version, the control group, specified neither skill level nor place of origin (see Appendix A for the specific wording).

⁸ The item was part of a survey experiment in which respondents were randomly assigned to one of four descriptions of the immigrant varying (a) language skills and (b) educational attainment of the applicant (see appendix A for the specific wording).

⁹ In both the Danish and Canadian analyses we include dummies for the various immigrant descriptions (i.e. the experimental conditions) to take differences in question wording into account.

¹⁰ As a robustness check, we re-estimated all models on the Canadian data using each of the two immigration items separately as dependent variable. These analyses yield results substantively similar to those reported for the combined scale.

¹¹ In Canada, visible minorities are defined as “persons who are non-Caucasian in race or non-white in color and who do not report being Aboriginal” (Statistics Canada 2015).

¹² For a definition of first and second generation immigrants as well as non-Western countries in the Danish data, see Appendix A.

¹³ Previous studies have shown that the Big Five personality traits can be reliably captured using only two measures per personality trait (Gosling, Rentfrow, and Swann 2003; Mondak 2010).

¹⁴ We adjust the standard errors for clustering at the municipality-/census tract-level (using clustered robust standard errors) because observations within municipalities/census tracts may not be independent. As the dependent variable is measured by only four categories in the Danish data, we also estimated the Danish analyses by ordered probit regression. Reassuringly, the results are substantively parallel to the ones obtained using OLS regression (results available upon request).

¹⁵ The Danish analyses were also carried out using municipality fixed effects. This did not substantively alter the results.

¹⁶ The measure of personal interethnic contact is composed of items regarding both friendship and more casual talking or socializing with immigrants/visible minorities in both the Canadian and Danish analyses. In robustness tests, we used each separate item as the independent variable (instead of the composite measure). The results were highly parallel to the primary analyses. Only when interethnic contact is measured exclusively by having coworkers of foreign ethnic origin in the Canadian data is the coefficient of the interaction term insignificant on at least the .10-alpha level (though still positive). This possibly reflects the low number of respondents (N = 354) in this specific analysis.

¹⁷ In the Danish sample, we found indications of multicollinearity between the contextual (municipality) share of immigrants and the control variables at the municipality-level. To probe if this was consequential for our results, we re-estimated the model without any control variables at the municipality-level and still found no significant evidence for an interaction between openness and the share of immigrants at the municipality-level.

¹⁸ Results are substantively parallel if we use a dichotomized version of self-reported measure of neighborhood exposure (Appendix A describes the measure).

¹⁹ Including municipality fixed effects does not substantively alter the results.

²⁰ Focusing specifically on openness, we also tried probing the importance of the six underlying facets (fantasy, aesthetics, feelings, actions, ideas, and values) constituting the overall trait using the Danish data (in which they were available). Interestingly, substituting the overall openness trait for each of these facets (in turn) generated highly similar results (e.g. the interaction with interethnic contact was positive and significant at the $p < 0.10$ -level in all models). While this analysis provides little guidance in this regard, exploring how various facets of openness matter for immigration attitudes—in conjunction with interethnic attitudes and more generally—would clearly be a valuable endeavor for future research.

²¹ In robustness tests, we included additional potentially confounding control variables; specifically, political ideology (regarding economic and social issues), authoritarianism, and social trust. Parallel to previous studies (Mondak 2010), we exclude these attitudinal variables from the primary analyses out of concern that they may be endogenous to the dependent variable (immigration attitudes). Even though these auxiliary analyses represent demanding tests, the inclusion of the additional controls does not substantively alter the results (see Appendix E).

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