Group Boundaries in the Netherlands: how Religion and Ethnicity matter for Social Integration

Online Appendix

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Appendix A – Additional Tables from the Main Analysis

Table Aa1a. Descriptive statistics of all variables used in the analysis, by ethnic group membership

		Turks (N = 2,802)		Moroccans (N = 2,784)		Surinamese (N = 2,828)		Antilleans (N = 2,871)	
	Range	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Dependent variable									
Contact with non-migrant Dutch	1-12	6.91[A]	2.83	7.10[A]	2.81	7.87[B]	2.77	8.08[C]	2.84
Predictors									
Ethnic in-group orientation									
Stronger identification as own ethnic group than Dutch	1-5	3.87	.98	3.62	.95	2.76	1.04	2.94	1.22
Identification with own ethnic group	1-5	4.29	.82	4.19	.75	3.56	1.10	3.54	1.29
Opposition to ethnic intermarriage	1-5	2.83	1.35	2.78	1.28	1.56	.87	1.41	.70
Religious identification									
Belief is an important part of myself	1-5	4.03	1.16	4.31	.94	2.98	1.62	2.80	1.62
Hurt feelings if someone talks badly about my belief	1-5	3.98	1.21	4.04	1.10	2.43	1.45	2.28	1.40
Opposition to religious intermarriage	1-5	3.42	1.39	3.69	1.26	2.00	1.22	1.96	1.22
Attendance of religious meetings	1-5	2.64	1.34	2.66	1.43	1.78	1.09	1.90	1.20
Perceived diversity climate									
General perception of discrimination against immigrants	1-5	2.94	.96	2.95	1.02	2.93	.97	2.75	.95

Table Aa1a. continued

Immigrants have all the opportunities in NL	1-5	2.94	1.15	3.02	1.18	3.17	1.14	3.06	1.13
All your rights are respected as an immigrant	1-5	3.27	1.04	3.34	1.05	3.39	.98	3.27	1.00
NL is a hospital country for immigrants	1-5	3.24	1.06	3.33	1.06	3.52	1.00	3.46	1.00
NL is open to all immigrant cultures	1-5	3.38	.99	3.32	1.04	3.56	.964	3.43	.97
Control variables									
Female	0/1	.50		.51		.55		.53	
Second generation	0/1	.32		.30		.34		.28	
Time spent in NL	1-79	24.73	10.11	23.90	9.72	29.32	11.26	22.91	12.46
Dutch partner	0/1	.09		.08		.20		.23	
Dutch language proficiency	1-3	2.28	.81	2.45	.75	2.92	.31	2.77	.49
Education	1-4	2.26	1.01	2.25	1.06	2.78	.97	2.82	.93
Working	0/1	.48		.47		.62		.59	

Note: Means for *Contact* that are not significantly different for the groups have the same superscript. Education and Dutch language proficiency are treated as continuous to avoid an excessive amount of parameter in the statistical models.

Table Aa1b. Descriptive statistics of all variables used in the analysis, by religious group membership

		Non-religious (N = 2,319)		Christians (N = 2,735)		Muslims (N = 5,555)		Hindus (N = 676)	
	Range	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Dependent variable									
Contact with non-migrant Dutch	1-12	8.53[A]	2.63	7.72[B]	2.87	6.94[C]	2.81	7.48[B]	2.81
Predictors									
Ethnic in-group orientation									
Stronger identification as own ethnic group than Dutch	1-5	2.47	1.14	3.18	1.10	3.75	.96	2.72	.94
Identification with own ethnic group	1-5	3.09	1.26	3.93	1.04	4.26	.76	3.61	.99
Opposition to ethnic intermarriage	1-5	1.39	.72	1.45	.72	2.82	1.31	1.92	1.10
Religious identification									
Belief is an important part of myself	1-5	0	1	3.90	1.04	4.33	.79	4.00	.91
Hurt feelings if someone talks badly about my belief	1-5	0	1	3.01	1.25	4.14	.97	3.35	1.23
Opposition to religious intermarriage	1-5	0	1	2.50	1.20	3.65	1.24	2.66	1.24
Attendance of religious meetings	1-5	0	1	2.40	1.23	2.72	1.36	1.94	1.01
Perceived diversity climate									
General perception of discrimination against immigrants	1-5	2.85	.93	2.77	.98	2.96	.99	3.00	1.01
Immigrants have all the opportunities in NL	1-5	3.12	1.11	3.08	1.16	2.98	1.17	3.19	1.11
All your rights are respected as an immigrant	1-5	3.36	.97	3.27	1.02	3.30	1.04	3.47	.92

Table Aa1b. continued

NL is a hospital country for immigrants	1-5	3.47	.99	3.48	1.03	3.29	1.07	3.60	.95
NL is open to all immigrant cultures	1-5	3.47	.94	3.47	1.00	3.35	1.02	3.64	.92
Control variables									
Female	0/1	.46		.59		.51		.56	
Second generation	0/1	.50		.18		.30		.27	
Time spent in NL	1-79	27.73	12.08	24.36	12.93	24.36	9.85	26.99	9.71
Dutch partner	0/1	.32		.18		.08		.09	
Dutch language proficiency	1-3	2.88	.37	2.79	.48	2.37	.78	2.87	.38
Education	1-4	2.96	.919	2.73	.929	2.25	1.03	2.58	1.02
Working	0/1	.65		.56		.47		.62	

Note: Means for *Contact* that are not significantly different for the groups have the same superscript. Education and Dutch language proficiency are treated as continuous to avoid an excessive amount of parameter in the statistical models.

Table Aa2. Overview of all religious subgroups in the dataset, total N = 11,532

Religious affiliation	N	Total
Hindus		683
Hinduism – Sanatan Dharm	198	
Hinduism – Arya Samay	56	
Hinduism – general/other	429	
Muslims		5,572
Islam – Shiite	111	
Islam – Sunnite	4,233	
Islam – Alevites	113	
Islam – Ahmadiyya	37	
Islam – Salafists	15	
Islam – general/other	1,063	
Christians		2,782
Christian – Roman Catholic	1,584	
Christian – Dutch Reformed	59	
Christian – Reformed	11	
Christian – Protest Church Netherlands	121	
Christian – Evangelical Brotherhood	293	
Christian – Pentecostal Church	299	
Christian – Jehovah’s witness	81	
Christian – general/other	334	
Other		155
Other	145	
Sikhs	1	
Judaism	3	
Buddhism	6	
Non-religious	2,319	2,319
Don’t know/no answer	21	21

To validate factor structures of the three reflexive measurements across the ten ethno-religious groups, we tested measurement invariance using multiple-group confirmatory factor analysis (tAa3). The measurement invariance test indicated partial scalar measurement invariance for all three latent constructs, allowing for the comparison of our mediators across the ethno-religious groups.

Except for the items *opposition to ethnic intermarriage* and *perceptions of discrimination,* maximum factor loadings were above .50 for all factors (tAa4). Since these two items are theoretically important indicators, we nevertheless included them in the factors. *Ethnic in-group orientation* and *perceived diversity climate* show a good reliability (rho > .75). Only for *religious identification,* rho indicates possible measurement error (rho < .70) – demonstrating the necessity to conduct SEM, which allows incorporating measurement errors in the model.

Table Aa3. Measurement invariance test across the ten ethno-religious groups, N = 11,284

Model	*SB χ^2 (df)*	*SB $\Delta\chi^2$ (df)*	*RMSEA*	*CFI*	*TLI*	*SRMR*
M1 configural *(res.var. ei1 fixed to .001 for AN, SN, SC, SM, MN, TN)*	2366.31 (460)		.061	.915	.899	.050
M2 modified configural: Res.cov. (dc4,dc5) (ri3,ei3) all groups (ri1,ri2) for MM and TM *(res.var. ei1 still fixed)*	897.73 (438)		.030	.980	.974	.035
M3 modified metric *(res.var. ei1 fixed to .001 for all groups)*	1859.21 (506)		.049	.940	.935	.089
M4 modified partial metric 3 free loadings: ei2, ei3, ri3 *(res.var. ei1 fixed to .001 for AN, SN, SM, MN, TN)*	940.92 (478)	45.27 (40) (n.s.)	.029	.979	.976	.037
M5 modified partial scalar *(fixed intercept of RI to .001 for TM, res.var. ei1 fixed to .001 for AN, AC, SN, SC, SM, MN, TN)*	1509.17 (521)		.041	.956	.954	.045
M6 modified partial scalar 2 2 metric items: dc1, ri1 *(ei1 fixed to .001 for AN, AC, SN, SC, SM, MN, TN)*	1109.61 (507)	171.99*** (29)	.032	.973	.971	.039

$^{***}p < .001$. *Note: i)* Factor abbreviations: Ethnic in-group orientation (E), Religious identification (RI), Perceived diversity climate (DC) – item names in small letters. Satorra-Bentler (SB) tests were applied to test model differences. Model 4 was tested against Model 2. Model 6 was tested against Model 4. *ii)* We used MLR as an estimator and applied model modifications with a theoretical rationale that yielded a largely improved fit (χ^2-change > 50, reflecting our large sample size). Given a good model fit based on other fit statistics and no additional theoretically convincing high modification indices, we proceeded to the next higher measurement level even for significant χ^2-difference tests. This was done as in large datasets small deviations from a constraint may yield a highly significant χ^2-test (Brannick, 1995).

Table Aa4. Factor structure obtained from the partial scalar model, summarised by min/max of standardised loadings over the ten ethno-religious groups

	Standardised Factor Loadings (unstandardized for metric/scalar)			R^2
	1	2	3	
Factor 1: Ethnic in-group orientation (E) (rho = .587/.854)				
Stronger identification as ethnic group than Dutch *(scalar)*	.750/.812 (1)			.562/.659
Identification with own ethnic group *(config.)*	.629/.817			.395/.668
Opposition to ethnic intermarriage *(config.)*	.099/.426			.010/.182
Factor 2: Religious identification (RI) (rho = .294/.392)				
Belief is an important part of myself [1] *(scalar)*		.440/.673 (1)		.194/.453
Hurt feelings if someone talks badly about my belief [2] *(metric)*		.420/.629 (1.211)		.176/.396
Opposition to religious intermarriage [3] *(config.)*		.266/.611		.071/.374
Factor 3: Perceived diversity climate (DC) (rho = .697/.777)				
General perception of discrimination against immigrants *(metric)*			.420/.476 (1)	.177/.227
Immigrants have all the opportunities in NL *(scalar)*			.706/.780 (1.925)	.499/.609
All your rights are respected as an immigrant *(scalar)*			.686/.783 (1.703)	.470/.613
NL is a hospitable country for immigrants *(scalar)*			.651/.730 (1.620)	.424/.533
NL is open to all immigrant cultures *(scalar)*			.641/.699 (1.507)	.411/.489
Correlations				
Factor E with RI	$.104^{***}$ / $.583^{***}$			
Factor RI with DC	$-.360^{***}$/-.005			
Factor DC with E	$-.175^{***}$/-.012			

Note: Rho range calculated from the modified configural model. Unstandardized loadings are additionally reported for metric and scalar items, as the standardized loadings of invariant items vary across groups.

[1] Factor loadings below .05 for Moroccan-Muslims; Turkish-Muslims.
[2] Factor loadings below .05 for Moroccan-Muslims; Turkish-Muslims.
[3] Factor loadings below .05 for Antillean-Christians; Surinamese-Christians; Surinamese-Muslims; Surinamese-Hindus.

Table Aa5. Model fit comparison in terms of AIC values for three-, two-, and one-factor structure models, factors: Ethnic in-group orientation (E), Religious identification (RI), and Perceived diversity climate (DC), N = 8,966

	Model 1 three-factor model	Model 2a two-factor model *Factor 1*: RI & E *Factor 2*: DC	Model 2b two-factor model *Factor 1*: RI & DC *Factor 2*: E	Model 2c two-factor model *Factor 1*: E & DC *Factor 2*: RI	Model 3 one-factor model
AIC	247,639.99	249,446.15	250,033.00	255,895.00	257,849.79

Note: i) Non-religious respondents were excluded as due to their missings on *religious identification* combined factor structures cannot be tested.
ii) The displayed model comparisons confirmed the factors to be distinct concepts.

Table Aa6. Explained variance of contact with non-migrant Dutch by ethnicity (Model 1) and religion (Model 2), N = 10,389

	Model 1 Contact with Dutch natives	Model 2 Contact with Dutch natives
Intercept	8.08***	7.71***
Ethnicity		
Antillean (ref.)	-	
Surinamese	-.217**	
Moroccan	-.973***	
Turkish	-1.18***	
Religion		
Christians (ref.)		-
Non-religious		.816***
Muslims		-.769***
Hindus		-.237†
R^2	.030	.047

***$p < .001$, **$p < .01$, *$p < .05$, †$p < .10$. *Note:* Missing values could not be handled with FIML in these models but are evenly distributed across the thirteen ethno-religious groups.

Table Aa7. Structural invariance test for the constrained (Model 1) vs. unconstrained (Model 2) multi-group model, N = 11,285

	Model 1 all paths constrained	Model 2 all paths unconstrained
SB χ^2 *(df)*	3,291.79 (1,382)	3,160.30 (1,291)
SB $\Delta\chi^2$ *(df)*	133.33 (91)	
p	.005	
RMSEA	.035	.036
CFI	.937	.938
TLI	.926	.923
SRMR	.037	.036
AIC	570,469.89	570,511.30
BIC	577,199.96	577,908.51

Table Aa8. Unconstrained multi-group model of contact with non-migrant Dutch per ethno-religious group (Beta (S.E.)), N = 11,285

	DV Contact with non-migrant Dutch Effects per ethno-religious group									
	AC	AN	SN	SC	SM	SH	MN	MM	TN	TM
Contact Mean	5.95	5.19	5.37	7.79	4.51	5.82	3.75	8.25	5.77	6.60
Ethnic in-group orientation (E)	-.385***	-.560***	-.358***	-.492***	.102	-.341*	-.284	-.569***	-.757**	-.493***
	(.075)	(.082)	(.100)	(.103)	(.223)	(.152)	(.383)	(.096)	(.225)	(.090)
Religious identification (RI)	-.315†	-	-	-.217	-.711	-.951*	-	-.878*	-	-.591*
	(.191)			(.241)	(.616)	(.371)		(.358)		(.250)
Diversity climate (DC)	.298	.576**	.255	.016	1.67**	.647*	.606	.268†	.022	.131
	(.200)	(.220)	(.238)	(.251)	(.497)	(.295)	(1.23)	(.138)	(.522)	(.150)
Service attendance (SA)	.069	-	-	.169	.122	.230†	-	.083†	-	.271***
	(.084)			(.113)	(.255)	(.125)		(.047)		(.058)
Control variables										
Female	-.149	-.086	-.099	-.043	-.152	-.208	.179	.239*	.055	.011
	(.141)	(.153)	(.170)	(.184)	(.343)	(.220)	(.564)	(.121)	(.360)	(.128)
2nd generation	.552**	.382*	.569**	.491*	1.22**	.859**	-.002	.041	.326	.287*
	(.191)	(.174)	(.195)	(.213)	(.408)	(.248)	(.534)	(.130)	(.460)	(.136)
Dutch language proficiency	.492**	.626**	.559	-.189	.595	1.03**	1.61†	.702***	.319	.698***
	(.147)	(.218)	(.494)	(.256)	(.524)	(.305)	(.836)	(.093)	(.356)	(.090)

Table Aa8. Continued

Education	.375***	.454***	.276**	.339**	.831***	.346**	.323	.230***	.396†	.389***
	(.081)	(.088)	(.101)	(.105)	(.176)	(.130)	(.346)	(.061)	(.216)	(.064)
Dutch partner	.631**	.459*	.761**	1.04***	-.089	1.36**	1.51	.557*	.602	-.196
	(.227)	(.231)	(.231)	(.255)	(.830)	(.417)	(1.09)	(.248)	(.596)	(.237)
Time in NL	.013†	-.005	.003	-.002	.020	.008	-.005	.005	.006	-.001
	(.007)	(.008)	(.009)	(.007)	(.018)	(.012)	(.038)	(.006)	(.016)	(.006)
Working	.110	.214	-.093	-.274	.268	-.058	-.868	.370**	.229	.050
	(.145)	(.173)	(.189)	(.199)	(.364)	(.236)	(.716)	(.113)	(.407)	(.116)

***$p < .001$, **$p < .01$, *$p < .05$, †$p < .10$.

Table Aa9. Constrained multi-group model of contact with non-migrant Dutch, Ethnic in-group orientation (E), Religious identification (RI), Perceived diversity climate (DC), Service attendance (SA), separately for each contact item (Beta (S.E.))

	Model 1 Contact: Dutch friends N = 10,623		Model 2 Contact: Dutch neighbours N = 10,685		Model 3 Visits: Dutch friends N = 11,275		Model 4 Free time: Dutch people N = 11,275	
	Direct	Total	Direct	Total	Direct	Total	Direct	Total
Ethno-rel. group								
Comp.group TM	10.07***	-	9.48***	-	8.72***	-	9.15***	-
	(.517)		(.558)		(.463)		(.448)	
AN	.339	.888	-1.27**	-.741†	.709***	1.62***	1.61***	2.26***
	(.630)	(.646)	(.416)	(.428)	(.138)	(.133)	(.129)	(.122)
AC	-.281	.482	-1.28***	-.745†	-.170	.806***	.321*	1.31***
	(.177)	(.449)	(.194)	(.393)	(.160)	(.114)	(.155)	(.111)
SN	-.160	.419	-1.48***	-.912*	.467**	1.43***	.839***	1.99***
	(.634)	(.689)	(.419)	(.463)	(.146)	(.140)	(.136)	(.130)
SC	-.839***	.032	-1.47***	-.866*	-.588**	.565***	.307†	1.47***
	(.206)	(.447)	(.226)	(.384)	(.189)	(.141)	(.178)	(.134)
SM	-.955**	-.306	-1.37***	-.871†	-.587*	.434†	-.241	.868***
	(.276)	(.673)	(.291)	(.526)	(.232)	(.223)	(.234)	(.231)
SH	-.788***	-.088	-1.08***	-.578	-.631***	.557***	-.410*	.858***
	(.188)	(.465)	(.203)	(.400)	(.172)	(.156)	(.162)	(.148)
MN	.554	1.11	-.490	.058	1.38***	2.31***	1.46***	2.56***
	(.706)	(.723)	(.578)	(.595)	(.325)	(.327)	(.284)	(.301)

Table Aa9. Continued

MM	-.239*	-.124	.001	.109	.076	.265**	.002	.222*
	(.108)	(.350)	(.112)	(.403)	(.089)	(.090)	(.087)	(.088)
TN	-.152	.247	-.412	-.033	.824**	1.49***	.501*	1.30***
	(.670)	(.677)	(.498)	(.508)	(.250)	(.253)	(.239)	(.248)
Ethnic in-group orientation (E)	-.361***		-.333***		-.604***		-.728***	
	(.044)		(.049)		(.040)		(.038)	
Religious identification (RI)	-.532***		-.348*		-.494***		-.429***	
	(.132)		(.143)		(.119)		(.116)	
Diversity climate (DC)	.204*		.492***		.273**		.268**	
	(.097)		(.106)		(.084)		(.080)	
Service attendance (SA)	.239***		.319***		-.027		-.004	
	(.041)		(.043)		(.034)		(.033)	
Control variables								
Female	-.313***		-.136		.402***		-.122†	
	(.074)		(.083)		(-.068)		(.064)	
2nd generation	1.02***		-.190*		.152†		.388***	
	(.080)		(.095)		(.080)		(.074)	
Dutch language proficiency	.859***		.638***		.518***		.692***	
	(.072)		(.074)		(.056)		(.056)	
Education	.354***		.112*		.399***		.482***	
	(.041)		(.045)		(.037)		(.035)	

Table Aa9. Continued.

Dutch partner	$-.204^{\dagger}$	$.302^{*}$	1.05^{***}	$.703^{***}$
	(.118)	(.138)	(.120)	(.110)
Time in NL	$-.024^{***}$	$.017^{***}$	$.012^{***}$	.004
	(.004)	(.004)	(.003)	(.003)
Working	$.161^{*}$	.041	$.251^{***}$	$.139^{*}$
	(.075)	(.084)	(.068)	(.065)

$^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. *Note:* No overall intercept, but intercepts-per-group. Direct effects on E, RI, DC, SA and indirect effects are not included in this table.

Table Aa10. Comparison of levels of religious identification and service attendance between Surinamese Muslims and Moroccan and Turkish Muslims, N = 11,285

	Model 1		Model 2	
	DV Rel. ident. (RI)	DV Service att. (SA)	DV Rel. ident. (RI)	DV Service att. (SA)
	Direct	Direct	Direct	Direct
Ethno-rel. group				
Comp.group MM	-	-		
SM	$-.588^{***}$ (.078)	$-.416^{***}$ (.076)		
Comp.group TM			-	-
SM			$-.619^{***}$ (.078)	$-.443^{***}$ (.075)
MM			-.031 (.025)	-.027 (.038)

$^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. *Note:* Comparisons were obtained from the constrained multi-group model.

Appendix B - Sensitivity Analyses

Omitted Variable Bias

The interpretation of the observed associations between ethnic in-group orientation, religious identification, service attendance, and perceived diversity climate with contact with non-migrant Dutch, assumes nonexistence of unobserved confounders. Although untestable, this assumption presumably is breached, as data limitations did not allow including immigrants' opportunities for contact with non-migrant Dutch in the model. As contact opportunities is likely to influence both immigrants' contact with members of the majority group (the outcome variable) as well as immigrants' ethnic in-group orientation, religious identification, frequency of service attendance, and perceived diversity climate (the predictor variables), excluding it from the model could bias our results. To gauge this bias, we conducted a sensitivity analysis, which indicates how strongly contact opportunities would have to be related to the variables in the model, to change our results. We relied on the partial R^2 parametrisation. Using Cinelli and Hazlett's (2020) online tool, we calculated the amount of residual variance of each predictor and the outcome, contact opportunities would have to explain to invalidate our discovered links.[1]

While higher contact opportunities can be expected to increase immigrants' contact with members of the majority group, previous literature suggests contact opportunities to decrease immigrants' ethnic in-group orientation and religious identification (Blau, Blum and Schwartz, 1982; Esser, 1986). In this case, omitting contact opportunities in our model would result in an underestimation of the associations between these two predictors and contact with majority group members, making them highly robust. To achieve a stricter test, we, therefore, assumed a positive relationship between contact opportunities and ethnic in-group orientation and religious identification. Additionally, we considered the existence of an unidentified unobserved confounder, linked to the predictors and the outcome in the same direction.

For service attendance and perceived diversity climate, contact opportunities can be expected to show the same positive association as for majority contacts. Hence, omitting contact opportunities in the model, these predictors are likely to be overestimated.

Figure Ab1 to Ab4 show the contour plots for the robustness of the t-value with regard to a confounder that explains a certain proportion of variance in contact with non-migrant Dutch (y-axis) and in the predictor (x-axis). Three scenarios of explained residual variance in majority contacts are presented: $R^2_{Cont.\sim Opp.|D,X} = .75$; $R^2_{Cont.\sim Opp.|D,X} = .15$; $R^2_{Cont.\sim Opp.|D,X} = .05$. The red dotted line indicates the critical threshold at which our observed relationships between outcome and predictor become insignificant.

If, as an extreme case scenario, contact opportunities (or another unobserved confounder) explained 75 percent of the variation in majority contacts, it would need to explain 18 percent of the variation in ethnic in-group orientation (see Figure Ab1), and 1 percent of the variation in religious identification (Figure Ab2), service attendance (Figure Ab3), and diversity climate (Figure Ab4), for these predictors to become insignificant. Hence, while the negative connection between ethnic in-group orientation and contact with non-migrant Dutch seems to be rather robust to unobserved confounding, this is less the case for the other three variables.

As a second, and more realistic test, we assumed that contact opportunities accounts for 15 percent of the variation in contact with non-migrant Dutch – the same amount as jointly explained by all variables in our model. In this scenario, contact opportunities would have to explain 48 percent of the variation in ethnic in-group orientation, 4 percent of the variation in religious identification and service attendance, and 3 percent of the variation in diversity climate.

Lastly, to assess the likelihood of contact opportunities being strong enough to change our results, we bounded the sensitivity analysis to existing research. In a setting comparable to ours (Dutch context, same ethnic and religious groups, similar N), Martinovic, van Tubergen and Maas (2009) included the percentage of non-Western immigrants in respondents' residential area as an indicator for contact opportunities. Assuming a similar number of degrees of freedoms to ours, this variable explains 5 percent of the variation in immigrants' interethnic contacts (*b* = -.008, *SE* = .001, *p*<.001).[2] Given this partial R^2, contact opportunities would need to explain 70 percent of the variation in ethnic in-group identification, 10 percent of the variation in religious identification and service attendance, and 8 percent of the variation in perceived diversity climate, to invalidate our discovered associations (Figure Ab1 to Figure Ab4).

While 10 and 8 percent explained variance might not seem high, contact opportunities, or another unobserved confounder, would have to be 1.6 times as strong as education in our analysis and 1.9 times as strong as Dutch partner, to fully account for the relationship between religious identification and majority contacts. To invalidate the link of ethnic in-group orientation, contact opportunities would have to be 1.5 times as strong as Dutch language proficiency, 4.9 times as strong as education, and 6.6 times as strong as having a Dutch partner. For service attendance: 2.3 times Dutch language, 9 times education, and 2.3 times Dutch partner; for perceived diversity climate: 1.5 times Dutch language, 0.6 times education, and 8 times Dutch partner.[3] Yet, Martinovic, van Tubergen and Maas (2009), observe contact opportunities to only be 0.03 times as strong as Dutch language proficiency in their model, 0.03 times as strong as education, and 0.02 times as strong as Dutch partner. In sum, we, therefore, conclude that it seems unlikely that contact opportunities would be strong enough to substantially invalidate our results – even if it would be positively related to ethnic in-group orientation and religious identification.

With regard to an unidentified unobserved confounder, our conclusion is less certain. While the link of ethnic in-group orientation appears to be rather robust, the existence of an unobserved confounder explaining 15 percent of the variation in contact with non-migrant Dutch and 3 to 4 percent of the variation in religious identification, service attendance, and perceived diversity climate, cannot be ruled out. Yet, to invalidate our results, this confounder would still need to be between 1.9 and 8 times as strong as Dutch partner – a covariate with a presumably strong connection to majority contacts.

Additional Analyses

To further test the robustness of our findings, we conducted five additional analyses. First, to rule out biases from measuring contact as a mean score with equal item weights, we estimated the gross effects of religion and ethnicity separately for each contact item. This analysis showed that in the uncontrolled regression models (Table Ab1), which separately include religion and ethnicity as predictors, religion explains more variance in contact compared to ethnicity, for all four contact items except ‘Contact with non-migrant Dutch neighbours’. Second, as it was not possible to control for ‘survey wave’ in the multi-group model due to model complexity constraints, we estimated the multi-group model separately for each data set (2006, 2011, 2015) (see Table Ab2, Table Ab3, Table Ab4). In these models, changes in levels of statistical significance, but not in the direction and magnitude of coefficients, were observed, which can, however, be explained by their substantially smaller sample size.

Third, we switched the reference category in the multi-group model from Turkish Muslims to Antillean Christians (highest levels of contact as an ethnic and as a religious group), to ensure that our conclusions were not limited to certain group comparisons (see Table Ab5). In this model, significant indirect paths via ‘perceived diversity climate’ are only observed for non-religious and Hindu Surinamese and Turkish Muslims – which partially weakens the support for hypothesis 5: perceptions of a diversity climate mediating the importance of religion and ethnicity as group boundaries for immigrants’ contact with non-migrant Dutch. Fourth, as the three reflexive factors were only partially invariant, we repeated the analysis including only scalar items (also omitting *identification with own ethnic in-group* (missing in the 2006 dataset) and *opposition to religious and ethnic intermarriage*) (see Table

Ab6). Fourth, we re-ran the multi-group model with only religious respondents to ensure that constraining the two religiosity predictors to have a zero-link with contact for all non-religious groups did not bias effects of the other predictors (see Table Ab7).

Lastly, we re-estimate the multi-group model excluding the factor items *opposition to religious intermarriage*: ‘It is annoying if your daughter wants to marry someone of a different faith’ on the religious identification mediator, and *opposition to ethnic intermarriage:* ‘Would you mind if your children chose a <native Dutch person> as a partner?’ on the ethnic in-group identification mediator since these two items might be too closely related to our dependent variable of contact with non-migrant Dutch, hence driving the discovered connection (see Table Ab8). Apart from the deviations mentioned above none of these analyses yielded substantially different conclusions.

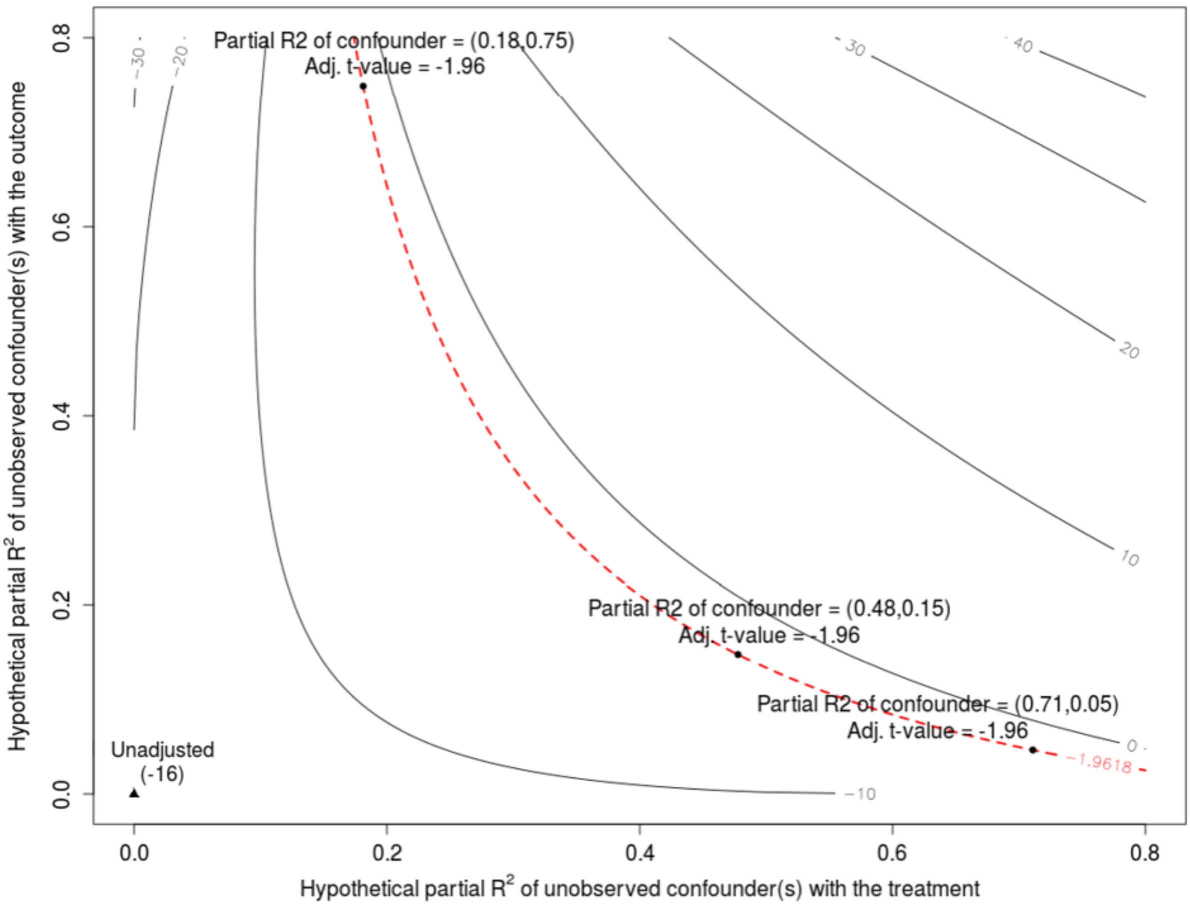

Figure Ab1. Contour plot for the sensitivity of ethnic in-group orientation (treatment) and contact with non-migrant Dutch (outcome) to unobserved confounders. Sensitivity is measured as the proportion of explained variance in the outcome and treatment. Three scenarios are presented: $R^2_{Cont.\sim Opp.|D,X} = .75$; $R^2_{Cont.\sim Opp.|D,X} = .15$; $R^2_{Cont.\sim Opp.|D,X} = .05$.

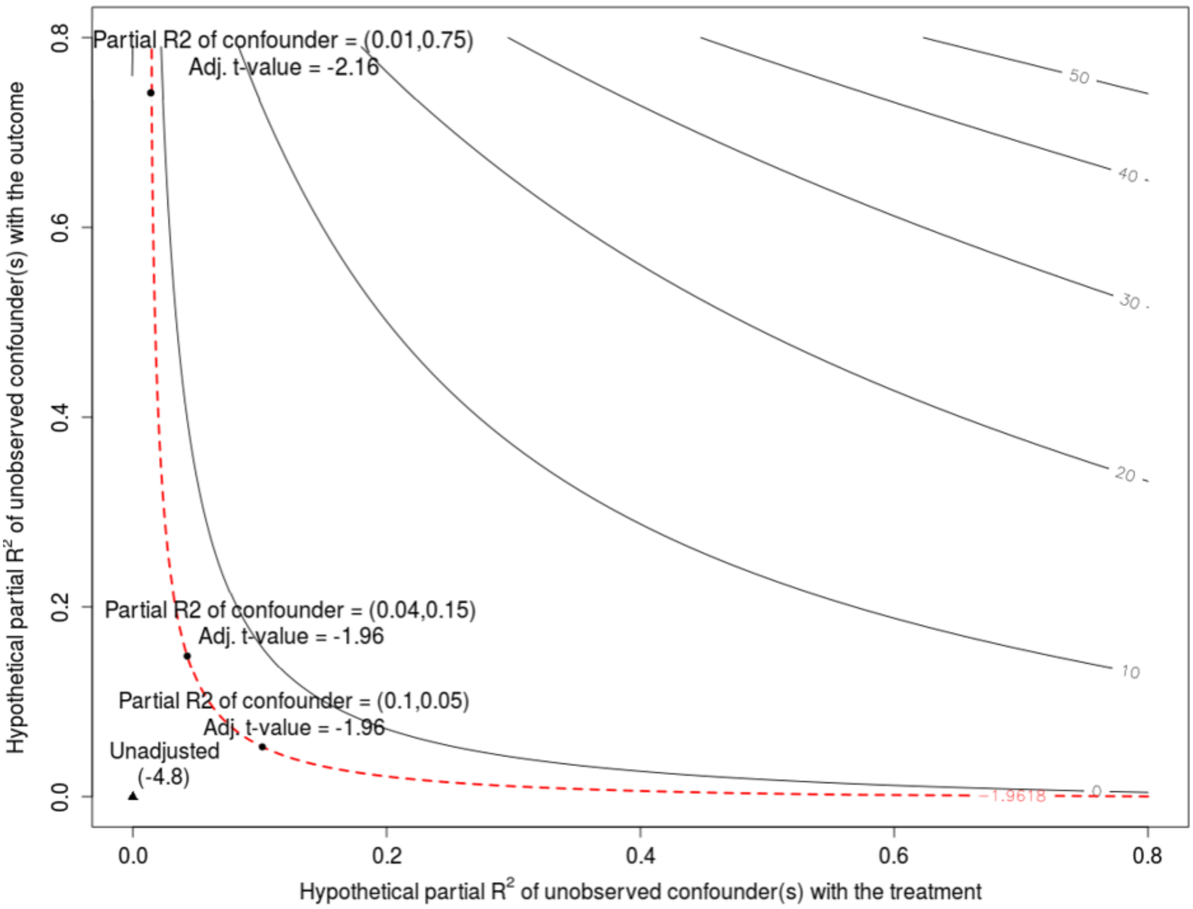

Figure Ab2. Contour plot for the sensitivity of religious identification (treatment) and contact with non-migrant Dutch (outcome) to unobserved confounders. Sensitivity is measured as the proportion of explained variance in the outcome and treatment. Three scenarios are presented: $R^2_{Cont.\sim Opp.|D,X} = .75$; $R^2_{Cont.\sim Opp.|D,X} = .15$; $R^2_{Cont.\sim Opp.|D,X} = .05$.

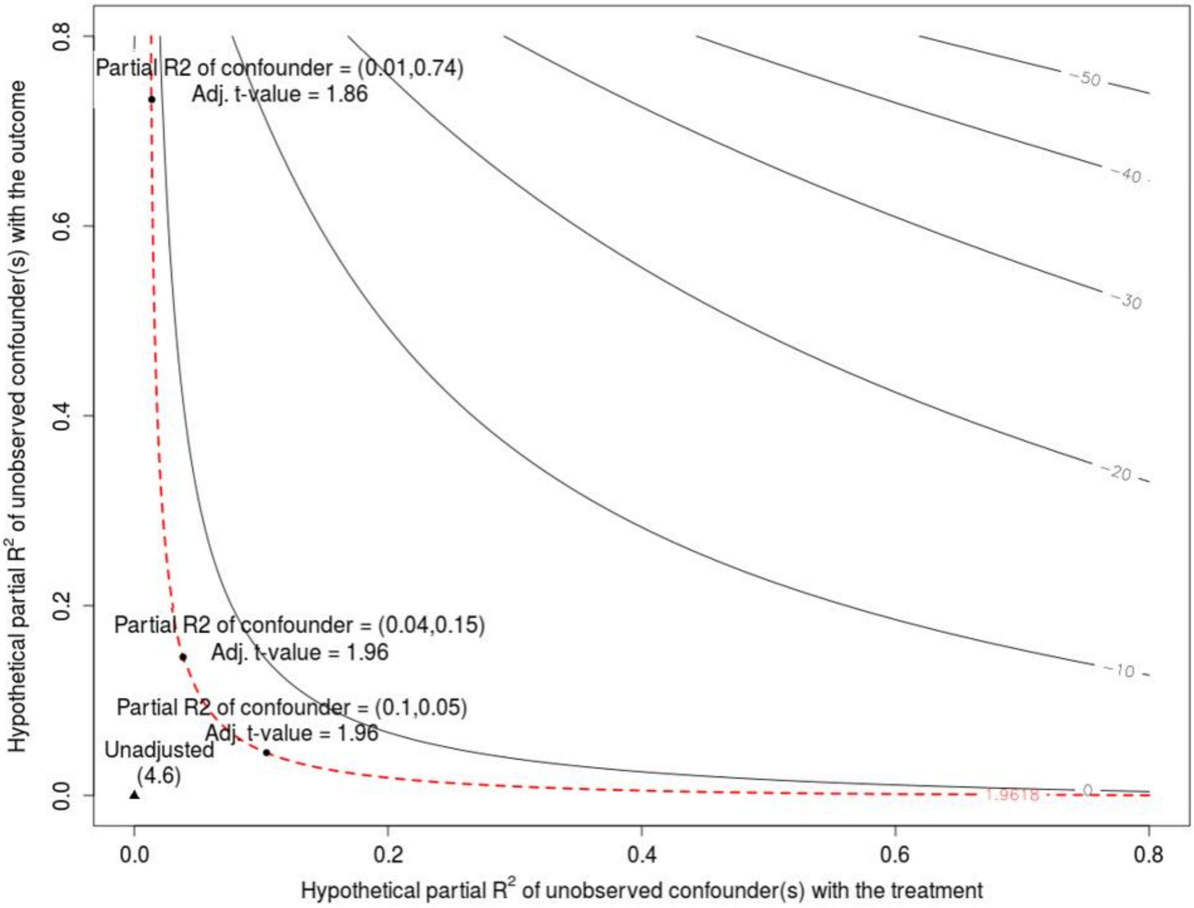

Figure Ab3. Contour plot for the sensitivity of service attendance (treatment) and contact with non-migrant Dutch (outcome) to unobserved confounders. Sensitivity is measured as the proportion of explained variance in the outcome and treatment. Three scenarios are presented: $R^2_{Cont.\sim Opp.|D,X} = .75$; $R^2_{Cont.\sim Opp.|D,X} = .15$; $R^2_{Cont.\sim Opp.|D,X} = .05$.

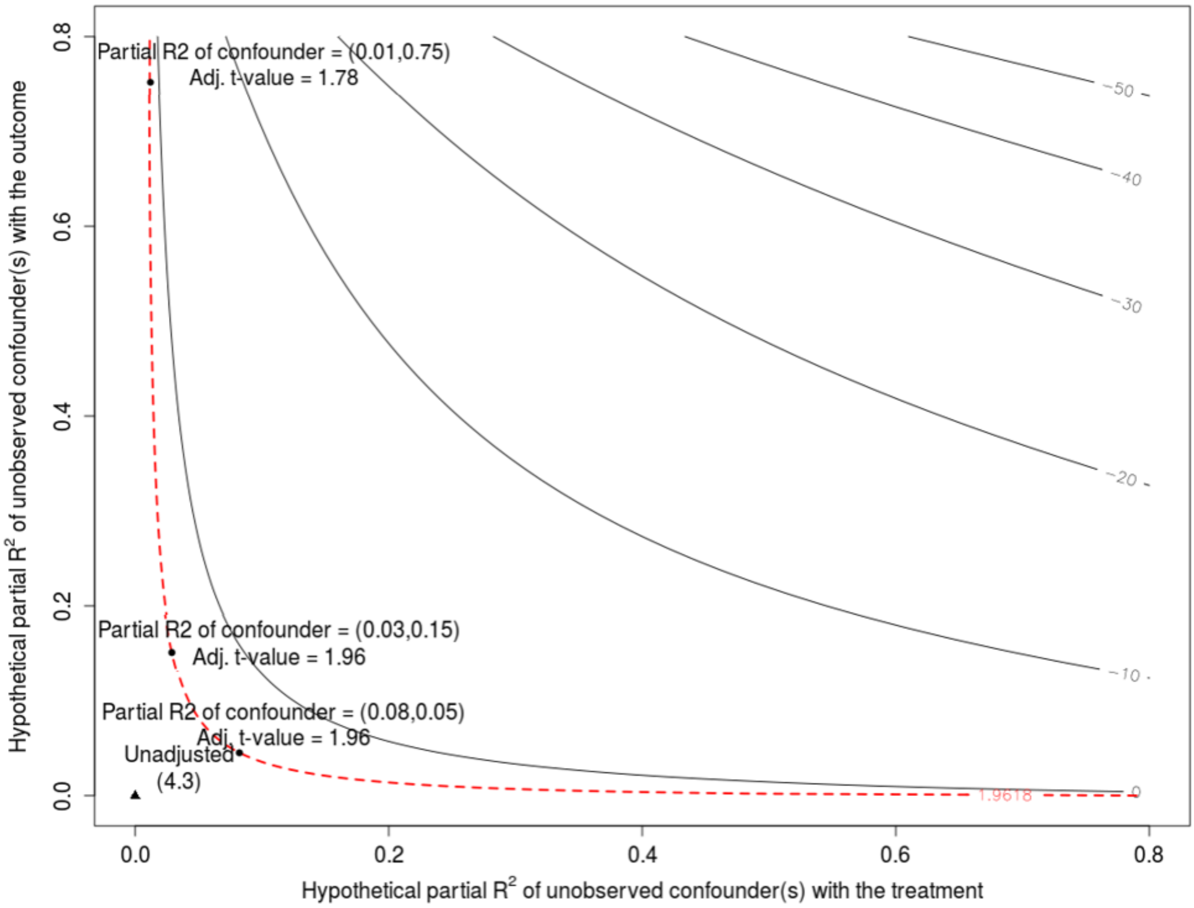

Figure Ab4. Contour plot for the sensitivity of perceived diversity climate (treatment) and contact with non-migrant Dutch (outcome) to unobserved confounders. Sensitivity is measured as the proportion of explained variance in the outcome and treatment. Three scenarios are presented: $R^2_{Cont.\sim Opp.|D,X} = .75$; $R^2_{Cont.\sim Opp.|D,X} = .15$; $R^2_{Cont.\sim Opp.|D,X} = .05$.

Table Ab1. Explained variance of contact with non-migrant Dutch by ethnicity (Model 1a, 2a, 3a, 4a) and religion (Model 1b, 2b, 3b, 4b), separately for each contact item

	Model 1a	Model 1b	Model 2a	Model 2b	Model 3a	Model 3b	Model 4a	Model 4b
	Contact: Dutch friends N = 10,623		Contact: Dutch neighbours N = 10,685		Visits: Dutch friends N = 11,275		Free time: Dutch people N = 11,275	
Intercept	11.70***	11.22***	10.16***	10.14***	10.37***	9.90***	11.68***	11.26***
Ethnicity								
Antillean (ref.)	-		-		-		-	
Surinamese	-.518***		.102		-.168†		-.123	
Moroccan	-1.14***		.533***		-1.38***		-1.99***	
Turkish	-1.17***		.346**		-1.67***		-2.29***	
Religion								
Christians (ref.)		-		-		-		-
Non-religious		.758***		.209†		1.19***		1.16***
Muslims		-.734***		.425***		-1.13***		-1.78***
Hindus		-.344*		.242		-.238		-.538***
R^2	.016	.023	.003	.002	.040	.062	.082	.105

***$p < .001$, **$p < .01$, *$p < .05$, †$p < .10$. *Note:* Missing values could not be handled with FIML in these models but are evenly distributed across the ten ethno-religious groups.

Table Ab2. Constrained multi-group model of contact with non-migrant Dutch including only respondents from the 2006 dataset (Beta (S.E.)), N = 4,108

	DV Contact with Dutch natives	
	Direct	Total
Ethno-rel. group		
Comp.group TM	5.61^{***}	-
	(.613)	
AN	$.386^{*}$	1.06^{***}
	(.184)	(.179)
AC	$-.391^{\dagger}$	$.422^{**}$
	(.214)	(.156)
SN	-.125	$.684^{***}$
	(.194)	(.189)
SC	$-.484^{*}$	$.526^{**}$
	(.247)	(.180)
SM	$-.763^{*}$	.223
	(.317)	(.295)
SH	$-.711^{**}$	.265
	(.219)	(.194)
MN	$.962^{*}$	1.75^{***}
	(.432)	(.454)
MM	.156	$.294^{*}$
	(.127)	(.128)
TN	.129	.513
	(.336)	(.338)
Ethnic in-group orientation (E)	$-.476^{***}$	
	(.050)	
Religious identification (RI)	$-.483^{**}$	
	(.164)	
Diversity climate (DC)	$.290^{*}$	
	(.129)	
Service attendance (SA)	$.122^{**}$	
	(.047)	

$^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. *Note:* No overall intercept, but intercepts-per-group. Direct effects on E, RI, DC, SA and indirect effects are not displayed in this table.

Table Ab3. Constrained multi-group model of contact with non-migrant Dutch including only respondents from the 2011 dataset (Beta (S.E.)), N = 3,232

	DV Contact with Dutch natives	
	Direct	Total
Ethno-rel. group		
Comp.group TM	7.27^{***}	-
	(.682)	
AN	.044	$.882^{***}$
	(.188)	(.172)
AC	-.312	$.396^{*}$
	(.223)	(.155)
SN	-.174	$.661^{**}$
	(.207)	(.190)
SC	$-.838^{**}$	-.043
	(.260)	(.202)
SM	-.397	.236
	(.367)	(.372)
SH	$-.554^{*}$	.229
	(.220)	(.214)
MN	-.204	.513
	(.582)	(.556)
MM	.128	$.246^{*}$
	(.122)	(.122)
TN	1.42^{**}	2.00^{***}
	(.502)	(.514)
Ethnic in-group orientation (E)	$-.508^{***}$	
	(.060)	
Religious identification (RI)	$-.288^{\dagger}$	
	(.156)	
Diversity climate (DC)	$.210^{\dagger}$	
	(.125)	
Service attendance (SA)	.075	
	(.048)	

$^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. *Note:* No overall intercept, but intercepts-per-group. Direct effects on E, RI, DC, SA and indirect effects are not displayed in this table.

Table Ab4. Constrained multi-group model of contact with non-migrant Dutch including only respondents from the 2015 dataset (Beta (S.E.)), N = 3,945

	DV Contact with Dutch natives	
	Direct	Total
Ethno-rel. group		
Comp.group TM	7.56^{***}	-
	(.783)	
AN	.156	1.08^{***}
	(.178)	(.163)
AC	-.269	$.494^{**}$
	(.265)	(.162)
SN	-.091	$.824^{***}$
	(.188)	(.175)
SC	$-.622^{*}$	.233
	(.300)	(.196)
SM	-1.08^{**}	-.325
	(.326)	(.324)
SH	$-.896^{**}$	.037
	(.262)	(.222)
MN	$.765^{\dagger}$	1.66^{***}
	(.397)	(.382)
MM	$-.503^{***}$	$-.266^{\dagger}$
	(.137)	(.136)
TN	-.314	.425
	(.266)	(.274)
Ethnic in-group orientation (E)	$-.606^{***}$	
	(.059)	
Religious identification (RI)	-.293	
	(.194)	
Diversity climate (DC)	$.460^{***}$	
	(.122)	
Service attendance (SA)	.061	
	(.060)	

$^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. *Note:* No overall intercept, but intercepts-per-group. Direct effects on E, RI, DC, SA and indirect effects are not displayed in this table.

Table Ab5. Constrained multi-group model of contact with non-migrant Dutch, Ethnic in-group orientation (E), Religious identification (RI), Perceived diversity climate (DC), Service attendance (SA), with Antillean Christians as reference category (Beta (S.E.)), N = 11,285

	DV Ethn. orient. (E)	DV Rel. ident. (RI)	DV Div. climate (DC)	DV Service att. (SA)	DV Contact with non-migrant Dutch					
	Direct	Direct	Direct	Direct	Direct	Ind. (E)	Ind. (RI)	Ind. (DC)	Ind. (SA)	Total
Ethno-rel. group										
Comp.group AC	.772*** (.046)	2.94*** (.115)	-.017 (.019)	2.46*** (.029)	6.17*** (.307)	-	-	-	-	-
AN	-.772*** (.046)	-	.017 (.019)	-	.143 (.106)	.386*** (.034)	-	.005 (.006)	-	.534*** (.108)
SN	-.821*** (.044)	-	.073*** (.020)	-	-.218† (.114)	.410*** (.035)	-	.023** (.008)	-	.215† (.115)
SC	-.120** (.043)	-.178*** (.049)	.044* (.020)	-.168** (.049)	-.336** (.117)	.060** (.022)	.083** (.028)	.014† (.007)	-.022** (.008)	-.202† (.117)
SM	-.410*** (.066)	.440*** (.080)	.043 (.035)	-.147† (.076)	-.438* (.199)	.205*** (.036)	-.204*** (.056)	.013 (.011)	-.020† (.011)	-.443* (.193)
SH	-.500*** (.046)	.267*** (.054)	.105*** (.022)	-.512*** (.049)	-.388** (.133)	.250*** (.028)	-.124** (.036)	.032** (.010)	-.068*** (.016)	-.298* (.129)
MN	-.773*** (.111)	-	.060 (.051)	-	.663* (.266)	.386*** (.061)	-	.018 (.016)	-	1.07*** (.270)
MM	.440*** (.032)	1.03*** (.052)	-.018 (.016)	.269*** (.040)	.310* (.128)	-.220*** (.021)	-.477*** (.100)	-.006 (.005)	.036*** (.009)	-.356*** (.091)
TN	-.375*** (.086)	-	-.016 (.041)	-	.004 (.196)	.187*** (.045)	-	-.005 (.013)	-	.186 (.202)
TM	.711*** (.033)	1.06*** (.054)	-.051** (.016)	.296*** (.039)	.333* (.132)	-.356*** (.028)	-.491*** (.104)	-.016** (.006)	.040*** (.010)	-.490*** (.093)

Table Ab5. Continued

Ethn. orient. (E)	-.500***
	(.032)
Rel. iden. (RI)	-.464***
	(.098)
Div. clim. (DC)	.309***
	(.071)
Serv. att. (SA)	.134***
	(.029)
Controls	
Female	-.035
	(.054)
2nd generation	.373***
	(.061)
Dutch lang. prof	.627***
	(.050)
Education	.351***
	(.030)
Dutch partner	.474***
	(.090)
Time in NL	.004
	(.003)
Working	.116*
	(.056)

$^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. *Note:* The model has no overall intercept, but intercepts-per-group. To contrast a religious with a non-religious group, an average score on the two religiosity mediators was assumed.

Table Ab6. Constrained multi-group model of contact with non-migrant Dutch, Ethnic in-group orientation (E), Religious identification (RI), Perceived diversity climate (DC), Service attendance (SA), with only scalar factors items (Beta (S.E.)), N = 11,285

	DV Ethn. orient. (E)	DV Rel. ident. (RI)	DV Div. climate (DC)	DV Service att. (SA)	DV Contact with non-migrant Dutch					
	Direct	Direct	Direct	Direct	Direct	Ind. (E)	Ind. (RI)	Ind. (DC)	Ind. (SA)	Total
Ethno-rel. group										
Comp.group TM	3.93^{***}	4.24^{***}	$-.125^{***}$	2.75^{***}	6.31^{***}	-	-	-	-	-
	(.018)	(.017)	(.031)	(.026)	(.247)					
AN	-1.48^{***}	-	$.125^{***}$	-	$.220^{*}$	$.733^{***}$	-	$.027^{**}$	-	$.980^{***}$
	(.042)		(.031)		(.104)	(.048)		(.008)		(.100)
AC	$-.709^{***}$	$-.348^{***}$	$.110^{***}$	$-.296^{***}$	.092	$.350^{***}$	$.028^{*}$	$.024^{**}$	$-.020^{*}$	$.474^{***}$
	(.033)	(.030)	(.027)	(.039)	(.094)	(.026)	(.012)	(.007)	(.008)	(.093)
SN	-1.53^{***}	-	$.221^{***}$	-	-.147	$.758^{***}$	-	$.048^{***}$	-	$.659^{***}$
	(.039)		(.033)		(.112)	(.049)		(.011)		(.108)
SC	$-.834^{***}$	$-.338^{***}$	$.182^{***}$	$-.464^{***}$	$-.189^{\dagger}$	$.412^{***}$	$.027^{*}$	$.039^{***}$	$-.031^{**}$	$.259^{*}$
	(.038)	(.039)	(.033)	(.047)	(.112)	(.030)	(.012)	(.010)	(.012)	(.112)
SM	-1.12^{***}	$.178^{**}$	$.181^{***}$	$-.443^{***}$	$-.542^{**}$	$.552^{***}$	.009	$.039^{**}$	$-.030^{*}$	.028
	(.063)	(.060)	(.039)	(.075)	(.187)	(.045)	(.006)	(.015)	(.012)	(.188)
SH	-1.21^{***}	$-.252^{***}$	$.291^{***}$	-.808	$-.454^{***}$	$.598^{***}$	$.020^{*}$	$.063^{***}$	$-.054^{**}$	.174
	(.041)	(.039)	(.037)	(.047)	(.125)	(.041)	(.009)	(.014)	(.020)	(.122)
MN	-1.50^{***}	-	$.204^{*}$	-	$.730^{**}$	$.742^{***}$	-	$.044^{*}$	-	1.52^{***}
	(.110)		(.087)		(.267)	(.069)		(.020)		(.268)
MM	$-.274^{***}$	$.196^{***}$	$.043^{\dagger}$	-.027	.006	$.135^{***}$	$-.016^{*}$	$.009^{\dagger}$	-.002	$.133^{\dagger}$
	(.026)	(.021)	(.025)	(.038)	(.076)	(.015)	(.007)	(.006)	(.003)	(.076)
TN	-1.07^{***}	-	.050	-	.105	$.530^{***}$	-	.011	-	$.646^{**}$
	(.084)		(.071)		(.192)	(.052)		(.016)		(.197)

Table Ab6. Continued

Ethn. orient. (E)	-.494***
	(.029)
Rel. iden. (RI)	-.081*
	(.035)
Div. clim. (DC)	.217***
	(.038)
Serv. att. (SA)	.067**
	(.025)
Controls	
Female	-.088†
	(.053)
2nd generation	.380***
	(.060)
Dutch lang. prof	.640***
	(.050)
Education	.369***
	(.030)
Dutch partner	.513***
	(.089)
Time in NL	.005*
	(.003)
Working	.138*
	(.055)
Model fit information	χ^2(611) = 2,778.77, p <.001; RMSEA = .056; CFI = .862; TLI = .865; SRMR = .046; AIC = 419,254.57; BIC = 424,525.73

$^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. *Note:* The model has no overall intercept, but intercepts-per-group.

Table Ab7. Constrained multi-group model of contact with non-migrant Dutch, Ethnic in-group orientation (E), Religious identification (RI), Perceived diversity climate (DC), Service attendance (SA), for only religious respondents (Beta (S.E.)), N = 11,285

	DV Ethn. orient. (E)	DV Rel. ident. (RI)	DV Div. climate (DC)	DV Service att. (SA)	DV Contact with non-migrant Dutch					
	Direct	Direct	Direct	Direct	Direct	Ind. (E)	Ind. (RI)	Ind. (DC)	Ind. (SA)	Total
Ethno-rel. group										
Comp.group TM	-	-	-	1.72*** (.027)	4.07*** (.185)	-	-	-	-	-
AC	-.708*** (.032)	-.348*** (.029)	.048** (.016)	-.296*** (.039)	-.143 (.102)	.533*** (.030)	.160*** (.043)	.009 (.049)	-.046* (.023)	.515*** (.110)
SC	-.828*** (.037)	-.416*** (.038)	.083*** (.019)	-.464*** (.047)	-.416*** (.119)	.623*** (.052)	.191 (.159)	.016 (.106)	-.071 (.047)	.344* (.174)
SM	-1.12*** (.063)	-.046 (.053)	.091** (.034)	-.443*** (.075)	-.722*** (.199)	.842*** (.080)	.021 (.138)	.018 (.144)	-.068*** (.015)	.090 (.316)
SH	-1.21*** (.041)	-.193 (.035)	.149*** (.021)	-.808*** (.047)	-.671*** (.136)	.910*** (.108)	.089 (.118)	.029 (.120)	-.124*** (.009)	.233 (.187)
MM	-.263*** (.025)	.196*** (.021)	.031* (.014)	-.027 (.038)	.030 (.082)	.198** (.069)	-.090 (.084)	.006 (.035)	-.004 (.010)	.140 (.116)
Ethn. orient. (E)					-.753*** (.063)					
Rel. iden. (RI)					-.461*** (.110)					
Div. clim. (DC)					.196* (.081)					

Table Ab7. Continued

Serv. att. (SA)	$.154^{***}$
	(.030)
Controls	
Female	.001
	(.064)
2nd generation	$.290^{***}$
	(.073)
Dutch lang. prof	$.573^{***}$
	(.055)
Education	$.320^{***}$
	(.034)
Dutch partner	$.407^{***}$
	(.116)
Time in NL	.003
	(.003)
Working	$.145^{*}$
	(.062)
Model fit information	χ^2 (836) = 3,693.45, p <.001; RMSEA = .048; CFI = .883; TLI = .864; SRMR = .048; AIC = 443,267.08; BIC = 447,044.92

$^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. *Note:* The model has no overall intercept, but intercepts-per-group.

Table Ab8. Constrained multi-group model of contact with non-migrant Dutch, Ethnic in-group orientation (E), Religious identification (RI), Perceived diversity climate (DC), Service attendance (SA) without ei3 and ri3 (Beta (S.E.)), N = 11,285

	DV Ethn. orient. (E)	DV Rel. ident. (RI)	DV Div. climate (DC)	DV Service att. (SA)	DV Contact with non-migrant Dutch					
	Direct	Direct	Direct	Direct	Direct	Ind. (E)	Ind. (RI)	Ind. (DC)	Ind. (SA)	Total
Ethno-rel. group										
Comp.group TM	1.49*** (.042)	4.22*** (.184)	-.067*** (.017)	2.75*** (.026)	6.26*** (.446)	-	-	-	-	-
AN	-1.49*** (.042)	-	.067*** (.017)	-	.251* (.107)	.748*** (.052)	-	.021** (.007)	-	1.02*** (.101)
AC	-.712*** (.033)	-1.12*** (.062)	.051** (.016)	-.296*** (.039)	-.272† (.146)	.359*** (.028)	.418** (.125)	-.016** (.006)	-.036** (.010)	.485*** (.093)
SN	-1.53*** (.039)	-	.124*** (.019)	-	-.113 (.115)	.772*** (.053)	-	.039*** (.011)	-	.699*** (.109)
SC	-.833*** (.038)	-1.31*** (.074)	.094*** (.019)	-.464*** (.047)	-.601*** (.167)	.419*** (.033)	.489** (.146)	.030** (.009)	-.056*** (.016)	.281* (.112)
SM	-1.12*** (.063)	-.653*** (.084)	.093** (.034)	-.443*** (.075)	-.743*** (.197)	.565*** (.048)	.244** (.078)	.029* (.013)	-.054** (.017)	.043 (.189)
SH	-1.21*** (.041)	-.837*** (.064)	.156*** (.022)	-.808*** (.047)	-.687*** (.140)	.610*** (.044)	.313** (.095)	.049*** (.013)	-.098*** (.026)	.188 (.122)
MN	-1.48*** (.110)	-	.110* (.051)	-	.772** (.266)	.746*** (.072)	-	.035* (.018)	-	1.55*** (.267)
MM	-.273*** (.026)	-.033 (.026)	.033* (.014)	-.027 (.038)	-.023 (.076)	.137*** (.016)	.012 (.010)	.010* (.005)	-.003 (.005)	.133† (.077)
TN	-1.08*** (.084)	-	.035 (.041)	-	.115 (.193)	.546*** (.054)	-	.011 (.013)	-	.672** (.197)

Table Ab8. Continued

Ethn. orient. (E)	-.503***
	(.032)
Rel. iden. (RI)	-.374**
	(.112)
Div. clim. (DC)	.315***
	(.071)
Serv. att. (SA)	.121***
	(.032)
Controls	
Female	-.034
	(.056)
2nd generation	.369***
	(.061)
Dutch lang. prof	.632***
	(.051)
Education	.353***
	(.030)
Dutch partner	.476***
	(.091)
Time in NL	.004†
	(.003)
Working	.112*
	(.056)

$^{***}p < .001$, $^{**}p < .01$, $^{*}p < .05$, $^{\dagger}p < .10$. *Note:* The model has no overall intercept, but intercepts-per-group. To contrast a religious with a non-religious group, an average score on the two religiosity mediators was assumed.

Appendix C - Supplementary Material

Table Ac1. Constrained multi-group model of contact with non-migrant Dutch, Ethnic in-group orientation (E), Religious identification (RI), Perceived diversity climate (DC), Service attendance (SA) for collections of groups (Beta (S.E.)), N = 11,285

	DV Ethn. orient. (E)	DV Rel. ident. (RI)	DV Div. climate (DC)	DV Service att. (SA)	DV Contact with non-migrant Dutch					
	Direct	Direct	Direct	Direct	Direct	Ind. (E)	Ind. (RI)	Ind. (DC)	Ind. (SA)	Total
Ethnicity										
Comp. Antillean	.772*** (.046)	2.94*** (.115)	-.017 (.019)	2.46*** (.029)	6.17*** (.307)	-	-	-	-	-
Surinamese	-.500*** (.046)	.267*** (.054)	.105*** (.022)	-.512*** (.049)	-.388** (.133)	.250*** (.028)	-.124** (.036)	.032** (.010)	-.068*** (.016)	-.298* (.129)
Moroccans	.439*** (.032)	1.03*** (.052)	-.018 (.016)	.269*** (.040)	.310* (.128)	-.220*** (.021)	-.477*** (.101)	-.006 (.005)	.036*** (.009)	-.356*** (.091)
Turks	.711*** (.033)	1.06*** (.054)	-.051*** (.016)	.296*** (.039)	.333* (.132)	-.356*** (.028)	-.491*** (.104)	-.016** (.006)	.040*** (.010)	-.490*** (.093)
Religion										
Comp. Christian	.652*** (.050)	2.76*** (.112)	.027 (.022)	2.29*** (.039)	5.84*** (.313)	-	-	-	-	-
Non-rel.	-.254** (.088)	-	-.060 (.043)	-	-.694* (.308)	.127** (.045)	-	-.018 (.014)	-	-.585† (.314)
Hindus	-.380*** (.049)	.445*** (.062)	.061* (.025)	-.344*** (.055)	-.052 (.148)	.190*** (.027)	-.206*** (.052)	.019** (.009)	-.046*** (.012)	-.096 (.141)
Muslims	.832*** (.038)	1.24*** (.066)	-.094*** (.019)	.464*** (.047)	.669*** (.152)	-.416*** (.033)	-.574*** (.122)	-.029** (.009)	.062*** (.015)	-.288* (.112)

***$p < .001$, **$p < .01$, *$p < .05$, †$p < .10$. *Note:* The model has no overall intercept, but intercepts-per-group; effects of control variables are not displayed.

Appendix D – Harmonisation Overview & Special Coding Aspects

Below we report all cases in which variables were harmonised in any of the three datasets (2006, 2011, 2015) prior to the merging of the datasets. Additionally, we address special coding aspects.

Ethnicity

Before merging the 2006, 2011, and 2015 datasets, for the *ethnicity* variable of the 2015 dataset the order of the labels was changed. No changes to the definition of the ethnic groups were conducted (as pre-defined by the data collection agency).

Religion

Before merging, the variable recording respondents' *religious affiliation* was harmonized across all three datasets to the 5 overarching categories mentioned in the main paper: non-religious, Christian, Islam, Hinduism, other. Please refer to Table Aa2 in the first section of this appendix for an overview of all religious sub-groups in the datasets.

Contact with non-migrant Dutch

Before merging, all four items that constitute the *contact* measure mentioned in the 'Measures' section in the main paper, were reverse coded in the 2011 and 2015 dataset to match the 2006 dataset. In the harmonised *contact* items, higher values indicate more contact with Dutch natives. No changes to the categories of the contact items were made during this harmonisation. While the items 'How often do you have contact with: (1) Dutch friends or acquaintances; (2) Dutch neighbours or community members' are measured on five-point scales, the items (3) 'Do Dutch friends often/sometimes/or never visit you?', (4) 'In your free time, do you often/sometimes/or never mix with Dutch people?' are measured on three-point scales. Hence, for the measurement of *contact with Dutch* as a mean score, we subsequently transformed the scales to equal importance (multiplying five-point scales with 3, three-point scales with 5, then taking the sum of these four items: $\left(\frac{\sum(transformed\ contact\ items)}{4}\right) - 3)$, which resulted in a mean score scale of *contact* ranging from 1 to 12.

Identification with Ethnic In-Group

Before merging, *identification with ethnic in-group* was reverse coded in the 2001 and 2015 dataset to match the 2006 dataset. In the harmonised item, higher values indicate stronger identification with the ethnic in-group. No changes to the categories of the item were made during this harmonisation.

Religious Service Attendance

Before merging the three datasets, *religious service attendance* was reverse coded in the 2011 and 2015 dataset to match the 2006 dataset. In the harmonised item, higher values indicate more frequent service attendance. No changes to the categories of the item were made during this harmonisation.

Immigrant Generation

Similar to immigrants' ethnic background, information on *immigrant-generation* was provided as a variable by the data collection agency. Before merging the three datasets, labels of the 2015 variable were adapted to the 2006 and 2011 dataset, recoding 'Dutch natives' from '0' to '-9'. No changes to the definition of the groups (first-generation, second-generation, Dutch natives) were conducted.

Time Spent in NL

Second-generation immigrants mostly held missings on the variable *time spent in the Netherlands,* as they were born in the Netherlands or migrated at a young age. To still control for the time of exposure to the Dutch society in our analysis, we decided to include age as a substitution for time spent in the Netherlands for second-generation immigrants. For first-generation immigrants, *time spent in the Netherlands* is measured as the time since arrival. Due to this recode, age cannot be included in the analysis.

Dutch Partner

No information about the *nationality of respondent's partner* was included in the 2015 dataset. We hence treated these values as missings and handled them with FIML in our analysis.

Dutch Language Proficiency

Before merging the 2006, 2011, and 2015 datasets, categories of the item measuring *Dutch language proficiency* were collapsed in the 2011 and 2015 dataset to match the 2006 dataset (measured with three answer categories: 'often difficulties to speak Dutch / do not speak Dutch', 'sometimes difficulties to speak Dutch', 'never difficulties to speak Dutch'). In the 2011 and 2015 dataset, *Dutch language proficiency* was measured with four categories: 'do not speak Dutch', 'often difficulties to speak Dutch', 'sometimes difficulties to speak Dutch', 'never difficulties to speak Dutch'. To match the 2006 dataset, the categories 'do not speak Dutch' and 'often difficulties to speak Dutch' were combined in the 2011 and 2015 dataset.

Education

The chosen *education* measurement included respondents that are currently in schooling to prevent a high number of missing values for younger respondents. In the 2006- and 2011-year datasets, this variable included 4 categories 'max. bao', 'vbo/mavo', 'mbo/havo/vwo', 'hbo/wo', which we labelled into 'max. primary', 'pre-vocational', 'secondary/pre-university', and 'higher professional/university'. In the 2015 dataset *education* was included with the labels 'no diploma', 'low', 'middle', and 'high' which were recoded according to the 2006 and 2011 education variable.

Notes

[1] See https://carloscinelli.shinyapps.io/robustness_value/

[2] If a less complex model is assumed (more dfs), the partial R^2 decreases, resulting in a less conservative test.

[3] For this analysis the t-values of the bounding covariates in the original regression were contrasted with the t-values of the covariates in the auxiliary treatment regression, in which the predictor is regressed on all included covariates, see Cinelli and Hazlett (2020).

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