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# A Longitudinal Study of Interethnic Contacts in Germany: Estimates from a Multilevel Growth Curve Model

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*Interethnic ties are considered important for the cohesion in society. Previous research has studied the determinants of interethnic ties with cross-sectional data or lagged panel designs. This study improves on prior research by applying multilevel growth curve modelling techniques with lagged independent variables, which provide better estimates of causal relationships than methods previously applied. Longitudinal data are used from the German Socio-Economic Panel (GSOEP), covering a 15-year period. The study analyses within- and between-person differences in contacts with native Germans for Turkish, (ex)Yugoslav, Spanish, Italian and Greek immigrants in Germany. Immigrants who learn the German language and get employed are more likely to subsequently establish contacts with Germans. Furthermore, immigrants who intend to settle permanently in Germany develop more interethnic ties than those who intend to return. No evidence is found for investments in education. The multilevel growth curve models not only confirm some of the earlier established determinants, but also question the causal impact of others.*

*Keywords: Interethnic Contacts; Germany; Longitudinal Analyses; Multilevel Growth Curve Models*

Scholars have long recognised the importance of interethnic ties in society. Especially through interaction with natives, immigrants become proficient in the language of the host country (Chiswick and Miller 2001), they identify more strongly with the host

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country (De Vroome, Verkuyten, and Martinovic 2014), and by enriching their social network they find jobs more easily in the mainstream labour market (Kanas and Van Tubergen 2009). Furthermore, interethnic contacts, even rather superficial ones, reduce ethnic prejudice and improve intergroup relations (Pettigrew and Tropp 2006).

Given the importance of ties between immigrants and natives, it seems imperative to deepen our understanding of their prevalence and causes. Interethnic ties have been studied by considering marriages (e.g., Kalmijn 1998), friendship choices among adolescents in school (e.g., Mouw and Entwisle 2006; Quillian and Campbell 2003) and other forms of social ties (e.g., Joyner and Kao 2005; Sigelman et al. 1996). Findings from these research areas have resulted in the identification of several key empirical patterns. One repeated finding is that immigrants who are more proficient in the host language are more likely to have contacts with natives (Esser 1986; Vervoort, Flap, and Dagevos 2011). Another observation is that contacts with natives are more prevalent among immigrants who are higher educated and who hold higher status jobs (Joyner and Kao 2005; Sigelman et al. 1996).

Most studies on interethnic ties, however, adopted a static approach and relied on cross-sectional data. This means that from the associations that were found no conclusions could be drawn about the direction of causality. For example, language proficiency could provide immigrants with opportunities to establish contacts with natives, but it could also be that contacts with natives lead to a better command of the language. Indeed, previous research has argued in both directions. Espinosa and Massey (1997) contend that having native friends increases immigrants' proficiency in native language, while Fong and Isajiw (2000) claim that low proficiency in native language increases the level of friendship within one's own ethnic group.

The present study aims to enrich the current literature by examining *longitudinal* developments of the ties between immigrants and natives. Does the frequency of interethnic contacts of immigrants change with their length of stay in the host society, and if so, how can we explain such changes? These questions are hard to answer with data on marriage, as most people marry only once. Instead, we look at friendship bonds between immigrants and native majority members, as indicated by home visits and having close ties to majority members. By adopting a longitudinal design, we are better able to assess the causal effect of the proposed determinants, such as education or language proficiency.

We also elaborate on more recent studies that have examined interethnic ties from a dynamic perspective. Using longitudinal data on immigrants in Canada and The Netherlands, Martinovic, Van Tubergen, and Maas (2009, 2011) estimated lagged panel models, and examined amongst others the effect of language proficiency, education and occupational status on interethnic contacts measured a year later. One of the findings that came out of these studies is that language proficiency has a positive effect on the acquisition of interethnic ties, even when controlling for the frequency of interethnic ties at an earlier point in time.

We add three contributions to these dynamic studies. First, we come one step closer to establishing causal relationships by applying multilevel growth curve models.

With such models, we can not only examine the effect of between-person differences in the determinants (e.g., in language proficiency) on interethnic contacts at a later time point, like previous studies by Martinovic and colleagues (2009, 2011) did, but also the extent to which interethnic contacts change over time as a result of *within-person changes* in these determinants (Duckworth, Tsukayama, and May 2010).

Second, we study a new potentially relevant determinant of interethnic ties, namely settlement intentions. Researchers explaining differences in settlement intentions have shown that social networks play an important role in migrants' decision to stay in the host country (Güngör and Tansel 2013), and ties with the native population are especially relevant (De Vroome and Van Tubergen 2014; Haug 2008). Yet, just as social ties with natives might stimulate an immigrant to settle permanently, intentions to settle might in turn make immigrants orientate themselves more towards the host society and seek native friends. The contribution of this study is that we develop theoretical arguments for why the intention to stay in the host country might be an important motivation for immigrants to develop contacts with natives. Importantly, we examine this with longitudinal data and multilevel growth curve models in order to distil the causal role of changing intentions from the role of inter-individual differences in settlement intentions that may also include confounding effects of other individual characteristics.

Third, we study the case of Germany, a country that hosts different immigrants groups and has a different migration policy than Canada and The Netherlands (Martinovic, Van Tubergen, and Maas 2009, 2011). Prior research on interethnic ties in Germany included a study of historical trends in interethnic friendships (Diehl and Schnell 2006), and a study on the speed with which immigrants from different ethnic groups acquire native friends (Hans 2010). The latter study also examined longitudinal effects of socio-demographic determinants on the development of interethnic contacts, by lagging the independent variables. However, this previous research did not distinguish within-person effects from between-person effects, so we cannot tell how much of the detected effect of a determinant is due to the variation between individuals and how much can be attributed to individual-level changes.

Data are from nine waves of the German Socio-Economic Panel (GSOEP). They were collected in the period 1985–1999, and comprise a large sample of Turkish, Greek, Italian, Spanish and (ex)Yugoslav immigrants. All these groups consist mainly of people who arrived in Germany as guest workers or family unification migrants. Together they comprise the largest proportion of the immigrant population in the country (Kogan 2006). Panel data on immigrants are rare and the few other existing panel surveys on immigrants are either small or cover only a short time frame.<sup>1</sup> Moreover, questions about contacts between immigrants and natives are often missing in such surveys. The value of the GSOEP data is that these questions have been asked in all the nine waves, which allows us to examine the dynamics of interethnic contacts over a period of 15 years.

## **Prior Research and Theory**

The existing literature has come up with a number of socio-demographic determinants of interethnic ties (Kalmijn 1998).<sup>2</sup> In this study, we focus on the following ones that have been studied before: language proficiency, education, occupational status, origin of the partner, age at migration and gender. Furthermore, we add a new potential determinant—settlement intentions—and we hypothesise about ethnic group differences in interethnic contacts in the German context.

It has been argued that socio-demographic characteristics of immigrants affect the likelihood of interethnic ties via three mechanisms. First of all, people have a preference for interacting with culturally and socio-economically similar others (i.e., homophily, see: McPherson, Smith-Lovin, and Cook 2001). Secondly, there have to be opportunities for meeting the preferred others (e.g., Blau and Schwartz 1984). Lastly, third parties (such as parents and the ethnic community) can approve or disapprove of interethnic ties, and these third parties can exert their influence either through socialisation or by imposing sanctions on in-group members who ‘misbehave’ (for an overview, see: Kalmijn 1998).

Below we discuss the combination of mechanisms behind each of the studied determinants of interethnic contacts. For time-constant characteristics (age at migration, gender and national origin), we only hypothesise about between-person differences in the amount of interethnic contact, whereas for each of the time-varying characteristics (language proficiency, education, occupational status, the choice of partner and settlement intentions), we separately formulate a hypothesis about between-person differences in interethnic contacts and within-person changes in interethnic contacts over time.

### *National Origin*

Cultural differences might account for differences in interethnic contacts. From the five groups studied here, Turks are culturally most distant from Germans. The most pronounced difference lies in religion. While Italians, Spaniards, former Yugoslavs and Greeks are mainly Christians or atheists like Germans, Turks are predominantly Muslims. Research among Turkish minorities in Germany has shown that about 90% of Turks self-categorise as Muslim (Diehl and Koenig 2009) and Turkish minorities in western Europe report high levels of religiosity (Fleischmann and Phalet 2012; Maliepaard, Lubbers, and Gijsberts 2009). Due to a greater cultural distance, it can be assumed that Turks have less preference for interaction with Germans than the other groups do, and that Germans also prefer to interact with culturally more similar immigrants. Research on immigrants in Europe has shown that majority members often feel threatened by religiously distant ethnic groups and receive members of these groups more negatively (Scheepers, Gijsberts, and Hello 2002). From the remaining groups, Greeks could be singled out as the second culturally most distant group because of their Orthodox religion. Yugoslavs as a group have a mixed religious background that includes Catholics, Orthodox and Muslims, but also many

secular people who grew up during communist times when religion was not stimulated. Italians and Spaniards, on the other hand, are predominantly Catholic or non-religious, which corresponds most with the religious denominations of Germans. Therefore, we expect that *Turkish immigrants have the fewest interethnic contacts, followed by Greeks, (ex)Yugoslavs and finally Italians and Spaniards* (H<sub>1</sub>).

### *Age at Migration*

Immigrants who arrive at a younger age have been socialised less in their country of origin by third parties, such as the extended family or the media. In addition, stronger exposure to and adoption of the norms, values and practices of the host country (Chiswick and Miller 2001) makes younger arrived immigrants more similar to host country members, and the tendency of homophily subsequently might lead to more interethnic ties. It is expected that *immigrants who arrive at a younger age have more interethnic contacts than older arrivals* (H<sub>2</sub>).

### *Gender*

Immigrants from the five groups examined here belong to southern, collectivistic cultures, where gender roles are more pronounced (Gibbons, Stiles, and Shkodriani 1991). In such cultures, there is a tendency to think that women should stay at home and take care of the household. This means that women have less opportunity to interact with natives because they do not go out as much as men. Moreover, women are usually responsible for a proper socialisation of the children. Because they are the ones who spend most time with the children it is mainly their task to ensure that ethnic norms, values and customs are transmitted to younger generations. Immigrant community, as a third party, might therefore particularly disapprove of women's interactions with culturally different natives in order to ensure that women remain loyal to their home country's traditions (Kalmijn 1998). It is predicted that *immigrant women have fewer interethnic contacts than immigrant men* (H<sub>3</sub>).

### *German Language*

Proficiency in the language of the host country might help bring about interethnic contact. Language is an indispensable tool for social interaction, and the command of it creates for immigrants opportunity to interact with natives. Moreover, by learning the host country's language, immigrants become more familiarised with the host culture, which might increase their preference for interacting with natives, as well as the natives' preference for such interaction. It is hypothesised that *immigrants who are more proficient in German language have more interethnic contacts* (H<sub>4a</sub>) and *the more proficient immigrants become in German language, the more interethnic contacts they will subsequently develop* (H<sub>4b</sub>).

### *Education*

People prefer to interact with equally educated others, with whom they share opinions and interests. German natives are on average higher educated than immigrants from the southern European countries studied here (Kogan 2004), which means that in the absence of highly educated coethnics, educated immigrants are likely to prefer to interact with natives. In addition, higher educated immigrants might have more opportunities than their lower educated counterparts to hang out with Germans, such as at the university or at work. We hypothesise that *higher educated immigrants have more interethnic contacts than the low educated ones* (H<sub>5a</sub>) and *the more educated the immigrants get, the more interethnic contacts they will subsequently develop* (H<sub>5b</sub>).

### *Occupational Status*

Being employed creates additional opportunities for immigrants to interact with Germans. These opportunities are especially abundant for immigrants with high-level jobs, who are mainly surrounded by native colleagues because the immigrant population is notably underrepresented in that occupational category (Kogan 2006). We expect that *unemployed immigrants have fewer interethnic contacts than the employed ones, while this difference should be especially large for immigrants who occupy higher-level positions* (H<sub>6a</sub>). We also expect that *immigrants who find a job, especially in a high position, will subsequently develop more interethnic contacts than those who remain unemployed* (H<sub>6b</sub>).

### *German Partner*

A native partner can introduce the immigrant to his or her already established circle of native friends, thereby increasing the immigrant's opportunities for interaction with natives. In contrast, immigrants in ethnically homogenous relationships are probably mainly exposed to other coethnics and have less opportunity to meet natives. In addition, in such a closed ethnic context the families of the coethnic partners can act as powerful third parties and discourage contact with natives in order to preserve the families' ethnic traditions. For these reasons, we hypothesise that *immigrants with a German partner have more interethnic contacts than immigrants with no partner or a coethnic partner* (H<sub>7a</sub>), and *immigrants who find a German partner will subsequently develop more interethnic contacts compared to immigrants who remain single or find a coethnic partner* (H<sub>7b</sub>).

### *Settlement Intentions*

Immigrants who plan a short stay in the host country are probably less interested in establishing any kind of relationship with majority members than immigrants who intend to stay permanently. The latter might prefer to interact with natives much more because they expect to be surrounded by them for the rest of their lives, which

is why they are more oriented towards German culture and more accepting of German values and customs. Moreover, German society as a third party encourages the interaction between immigrants and natives to a greater extent when it comes to permanent migrants. For instance, the reason why no integration policies were introduced for the guest workers in the 1970s is that the German Government expected these guest workers to return to their home countries after several years (Kogan 2004). We hypothesise that *immigrants with permanent settlement intentions have more interethnic contacts than temporary immigrants* ( $H_{8a}$ ) and *as immigrants switch from the idea of temporary to the idea of permanent settlement, they subsequently develop more interethnic contacts* ( $H_{8b}$ ).

## **Methods**

### *Data and Respondents*

The data employed in the present study come from the GSOEP (Haisken-De New and Frick 2005). This large survey contains a randomly selected, nationally representative sample of households, in which every adult member was interviewed. It was launched in 1984 and since then it has been repeated annually by approaching the same individuals, as well as the newcomers in already participating households and earlier participants who have moved out and formed their own households.

Next to German households, separate immigrant samples were drawn for the GSOEP. This study relies exclusively on 'sample B', which includes households of which the head belongs to one of the five major immigrant groups: Turks, former Yugoslavs, Greeks, Italians and Spaniards. Only foreign residents of what was then known as the Federal Republic of Germany (West Germany) took part in the survey. Most of the respondents had already been living in Germany for a number of years at the moment of the first survey.

The data were collected by means of face-to-face interviews. Questions about interethnic contacts that we were interested in were simultaneously asked only in specific years, which is why the current analysis is restricted to nine waves. These include every second year in the period from 1985 to 1999, with the addition of 1986. Since GSOEP was from the start envisioned as a longitudinal study, much effort was done to keep a high response rate throughout the waves. People who changed residence within Germany in between the waves were effectively traced and retained in the study. Out of 2616 immigrant respondents who were sampled in 1985, 87% participated in the next wave in 1986. In each subsequent wave, the original sample was reduced by another 6–12%. Seven hundred and thirty-eight respondents (or 28%) participated in all nine waves used in this study. Between 1986 and 1997, 1172 respondents were added to the original sample, and 41% of these did not drop out. The main reasons for sample attrition in GSOEP are the death of the respondent, the fact that the respondent has moved abroad and the respondent's refusal to participate further (Haisken-De New and Frick 2005).



Due to missing values on several variables, the sample used in this paper is reduced to 14,270 cases (i.e., respondents  $\times$  waves).<sup>3</sup> Furthermore, we left out second generation immigrants—those who were born in Germany or arrived before the age of 7—because for them the establishment of contacts with natives might follow a rather different pattern. The final sample consists of 2332 respondents and 10,070 cases.

### *Dependent Variable ‘Interethnic Contacts’*

Three questions were used for constructing the dependent variable *interethnic contacts*: ‘Did you have close contact with Germans since your arrival?’, ‘Did you visit Germans last year?’ and ‘Were you visited by Germans last year?’ The possible answer categories were ‘yes’ or ‘no’. We focus on interethnic ties that go beyond superficial interaction but are not limited to best friends only. Visiting people at home and having close contacts with them is an indication of successful social integration, and these measures capture both people who have Germans as their best friends and those with somewhat weaker friendships with Germans. If we had used questions on three best friends instead (also available in the data but in other waves), we would have run the risk of underestimating the levels of, and changes in, interethnic contacts in a broader sense.

Eight-seven per cent of the respondents reported having had close contacts with Germans, 76% visited Germans and 79% received German visitors. The affirmative answers were summed up to create a four-point scale of interethnic contacts. Eleven per cent of the respondents scored 0, 11% scored 1, 9% scored 2 and 69% scored 3. The dependent variable is clearly skewed and ceiling effects should be kept in mind. As a partial solution to this problem, we conducted an additional analysis among recently arrived immigrants only, who probably start off with fewer interethnic ties.

### *Independent Variables*

For *national origin* dummy variables are used, representing Turkish, (ex)Yugoslav, Greek, Italian and Spanish origin. *Age at migration* is measured in years. *Women* are coded as 1 in the dummy capturing gender. *German language proficiency* is measured in terms of self-reported German speaking skills. A 5-point scale is used, with a higher value standing for higher proficiency. Education is a continuous variable measured in years. *Occupational status* is represented by three categories: non-manual work, manual work and unemployed. *National origin of the partner* comprises the following categories: German partner, coethnic partner, and other (no partner and partner from another immigrant group). As to *settlement intentions* in Germany, two categories are used: temporary stay and permanent stay.

We control for the *length of stay in Germany reported at the first interview* and for the *time elapsed since the first interview*. With the latter control variable we also hold constant the differences in time distance between the surveys (1 or 2 years). All the variables used in the analysis are summarised in [Table 1](#).

**Table 1.** Descriptive statistics ( $N = 10,070$ ).

	Range	Mean/proportion	SD
<i>Dependent variable</i>			
Interethnic contacts	0–3	2.37	1.06
<i>Time variables</i>			
Length of stay in Germany at the first interview	0–35	13.78	6.15
Time elapsed since the first interview	0–12	4.57	3.38
<i>Time-constant characteristics</i>			
National origin			
Turkish	0/1	.38	
Yugoslav	0/1	.20	
Greek	0/1	.14	
Italian	0/1	.19	
Spanish	0/1	.09	
Age at migration	7–69	23.73	8.94
Women	0/1	.46	
<i>Time-varying characteristics</i>			
German language proficiency	1–5	3.26	.99
Education	7–18	9.01	1.84
Occupational status			
Non-manual work	0/1	.09	
Manual work	0/1	.56	
Unemployed	0/1	.35	
Origin of the partner			
Coethnic partner	0/1	.78	
German partner	0/1	.04	
Other (primarily single)	0/1	.18	
Settlement intentions			
Temporary	0/1	.65	
Permanent	0/1	.35	

### Analysis

We make use of multilevel growth curve models, thereby improving on previous longitudinal analyses of interethnic contacts. With the lagged panel design adopted by Martinovic and colleagues (2009, 2011), the dependent variable is a within-person change (as interethnic ties at  $t-1$  are controlled for); however, the independent variable (e.g., language proficiency) is still a between-person variable. Hence, such designs do not rule out other potential third-variable confounds and are not a proof of causal relationships (Duckworth, Tsukayama, and May 2010). With multilevel growth curve models one can separate within-person differences from between-person differences (e.g., in language proficiency), thereby using individuals as their own ‘control’ and eliminating between-person third-variable confounds (Duckworth, Tsukayama, and May 2010; Hoffman and Stawski 2009).

Within-person effects are then the effects of changes in independent variables on the changes in interethnic ties of the same individual (i.e., level 1). These can only be time-varying variables, like language proficiency and occupational status. Between-person effects, in contrast, explain the differences between the respondents in their

scores on interethnic contacts (i.e., level 2). Both time-varying variables and time-constant variables can explain the between-person differences in interethnic contacts.

To separately estimate between- and within-person effects for time-varying variables, we followed two procedures. For the continuous variables (language proficiency and education), we included the average score of each person—calculated across all the waves in which a person participated—as a second-level (between-person) predictor, and the deviation from the average in each survey year as a first-level (within-person) predictor (Burnett and Farkas 2009; Hoffman and Stawski 2009). For the categorical variables we followed the method of Snijders and Bosker (2011). The first step was to compute a dummy variable for the characteristic in question (e.g., German partner vs. no partner) reported in the first wave and to enter it as a second-level (between-person) predictor. Next, we entered the dummy for the same variable as reported in all other waves as a first-level (within-person) predictor. This is the variable that varies over time. In this way, we obtained two sets of coefficients for each time-varying determinant of interethnic contacts.

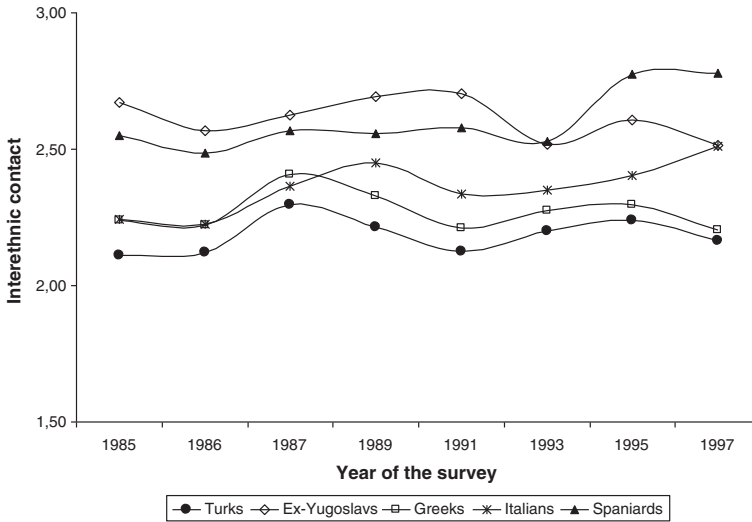
We used a lagged multilevel growth curve design, in which the independent variables are always measured one wave before the measurement of the dependent variable. The literature on growth curves usually estimates models with all the variables measured at the same time point (Burnett and Farkas 2009; Hoffman and Stawski 2009). However, the goal of such studies is to show that within-person changes in a determinant correlate with the changes in the outcome variable for that individual. By lagging our predictors, we can be somewhat more certain of the causal direction of the detected relationships. We estimated hierarchical growth curve models in MLwiN, using the Markov Chain Monte Carlo method.

## Results

### *Descriptive Results*

The aim of this section is to investigate whether and how interethnic contacts change over time for immigrants. In [Figure 1](#), the aggregate trajectories of interethnic contacts are shown for each ethnic group. Looking at the immigrant population studied here as a whole, in the period between 1985 and 1997 there seems to have been only a negligible increase in interethnic contacts (see also Diehl and Schnell 2006). While a slight upwards trend is discernible for Spaniards and Italians, for Turks, Greeks and Yugoslavs the overall trend is less clear. Turks report the lowest levels of interethnic contacts over the whole period ( $M = 2.18$ ), followed by Greeks ( $M = 2.28$ ), Italians ( $M = 2.35$ ), Spaniards ( $M = 2.57$ ) and Yugoslavs ( $M = 2.63$ ). Still, given that the dependent variable ranges from 0 to 3, [Figure 1](#) clearly indicates that all groups in all years score relatively high on interethnic contacts (between 2 and 3).

While group trends are illustrative of the overall interethnic contacts, they do not tell much about individual changes in contacts over time. Even if there is an increasing trend for an ethnic group, it can still be the case that for some members of that group contacts go up between the surveys and for others drop. [Table 2](#) shows in



**Figure 1.** Aggregate changes in interethnic contacts between 1985 and 1997 for five major immigrant groups in Germany ( $N = 10,070$ ).

what percentage of cases contacts increase, stagnate and decrease between two consecutive waves. Respondents are grouped into six categories of length of stay in Germany to see whether changes are more likely to happen shortly after arrival.

The last column in Table 2, which includes the totals, shows that for 32% of the respondents interethnic contacts change between two surveys. Looking at the years spent in Germany, we see that the shorter the stay, the higher the proportion of immigrants for whom contacts change. Especially immigrants with less than 5 years of residence tend to report an increase in interethnic contacts rather than a decrease (25% versus 20%, respectively), whereas immigrants who have been living in Germany for more than 25 years are the least likely to develop additional contacts with natives. In addition, the average interethnic contacts increase with the length of stay. Immigrants who arrived up to five years before the interview score 1.78 on interethnic contacts, whereas those whose residence exceeds 25 years score 2.47.

**Table 2.** Percentage of cases with an increase, stagnation and decrease in interethnic contacts between two consecutive waves; differentiation by length of stay of the respondent ( $N = 10,070$ ).

	Length of stay in the host country (in years)						Total
	<5	5-9	10-14	15-19	20-24	25>	
Increase in contacts	25.3	18.4	17.7	16.5	15.5	13.1	16.5
Stagnation	55.1	64.5	66.0	68.2	69.8	72.1	68.0
Decrease in contacts	19.6	17.1	16.3	15.3	14.7	14.7	15.5
Average level of contact	1.78	2.17	2.33	2.38	2.40	2.47	2.37

*Explanatory Results*

The next step is to test whether differences in the proposed characteristics can explain these changes. A two-level linear growth model was estimated, with observations nested within individuals. We estimated two models: one for the entire sample and one for recently arrived immigrants only (i.e.,  $\leq 10$  years living in Germany at entry in the panel study) (Table 3). The reason for performing an additional analysis on the subset of recently arrived immigrants is that this group has fewer interethnic friends (reducing the problem of ceiling effects of the dependent variable), and it experiences more changes with respect to the independent variables (e.g., language proficiency). As the subsample of recently arrived immigrants is rather small ( $N = 690$ ), standard errors will go up and problems of statistical power will arise. We carefully compare the outcomes of both models, keeping in mind their strengths and weaknesses.

We start with a discussion of time-constant variables, which can (only) explain between-person differences. Based on cultural and religious differences, we expected immigrants from Turkey to have fewest interethnic contacts, followed by Greeks, Yugoslavs and finally Italians and Spaniards ( $H_1$ ). We obtained no clear evidence for this hypothesis. When we consider the total sample, only Yugoslavs and Spaniards (but not Greeks and Italians) have significantly more contacts with Germans than Turks. The subsample of recently arrived immigrants equally does not show that Turks stand out for being a more closed community. In this subsample, it is the Greeks who have the fewest contacts with Germans, and also significantly fewer than Turks.

We also expected that immigrants who entered at a younger age ( $H_2$ ) and immigrant women ( $H_3$ ) would have more interethnic contacts. Surprisingly, however, we found no evidence for these relationships. In a supplementary analysis (model not presented), we did find out that, when post-migration characteristics were omitted, women ( $B = -.143, p < .001$ ) and immigrants arriving at an older age ( $B = -.022, p < .001$ ) tended to have fewer interethnic contacts. This suggests that women and older immigrants follow different trajectories than men and younger immigrants in terms of language investments and labour market activities.

For the time-varying predictors, we look first at the between-person effects. The positive coefficient for German language proficiency ( $H_{4a}$ ) clearly stands out, both in the total sample and in the recent immigrant subsample. Having a partner also makes a difference ( $H_{7a}$ ), but interestingly, regardless of ethnicity. Both immigrants with a native as well as with a coethnic partner have more contacts with Germans than single immigrants. This is in contrast with our expectation that immigrants with a coethnic partner would have fewer contacts with Germans than immigrants with a German partner. The coefficient for a native partner ( $B = .21$ ) is twice the size of that for a coethnic partner ( $B = .11$ ). However, this difference is not statistically significant by conventional measures ( $B = .103, p = .197$ ), presumably because there are not many interethnic marriages in the data.<sup>4</sup> It is possibly for this reason as well that there are no statistically significant differences within the recently arrived sample (i.e., coefficients slightly increase, but the standard errors are twice as large).

**Table 3.** Multilevel growth curve models of interethnic contacts in Germany.

	Total sample		Recent immigrants only	
	<i>B</i>	SE	<i>B</i>	SE
<i>Intercept</i>	.791***	.141	.513*	.266
<i>Time variables</i>				
Length of stay in Germany at the first interview	.004	.003	-.001	.012
Time elapsed since the first interview	.007***	.002	.018***	.005
<i>Between-person effects</i>				
National origin (ref. Turkish)				
Yugoslav	.141***	.046	.054	.094
Greek	-.039	.053	-.254*	.131
Italian	.044	.045	-.069	.086
Spanish	.259***	.059	.416*	.228
Age at migration	-.002	.002	.001	.004
Women	.008	.037	.012	.076
German language proficiency	.392***	.024	.443***	.046
Education	.011	.009	.019	.018
Occupational status (ref. unemployed)				
Manual work	-.011	.043	.020	.083
Non-manual work	.091	.075	.049	.149
Origin of the partner (ref. other)				
German partner	.208*	.118	.254	.264
Coethnic partner	.106*	.054	.145	.089
Settlement intentions (ref. temporary)				
Permanent	-.017	.035	.026	.072
<i>Within-person effects</i>				
German language proficiency	.015	.015	.050*	.030
Education	.018	.042	-.005	.055
Occupational status (ref. unemployed)				
Manual work	.061*	.028	.127**	.054
Non-manual work	.055	.049	.132	.098
Origin of the partner (ref. other)				
German partner	.038	.086	.031	.169
Coethnic partner	-.018	.044	-.080	.068
Settlement intentions (ref. temporary)				
Permanent	.044*	.022	.082*	.044
Model fit (-2 loglikelihood)		26,720		7386
<i>Variance components</i>				
Observation (total = 10,070; recent = 2811)	.367		.396	
Respondent (total = 2332; recent = 690)	.613		.690	

Note: All the independent variables were lagged ( $t - 1$ ) with respect to the dependent variable interethnic contacts. One-tailed  $p$ -values are reported. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

Education ( $H_{5a}$ ), occupational status ( $H_{6a}$ ) and settlement intentions ( $H_{8a}$ ) do not explain between-person differences in contacts with natives. However, when estimating a model with only pre-migration characteristics and education, we did find a significant effect of education ( $B = .10$ ,  $p < .001$ ). This means that higher educated immigrants have more contacts with natives because they, among other, speak the language better and more often have a (German) partner. Controlling for these other post-migration variables explains away the effect of education.

Looking at the within-person changes in interethnic contacts, we found an effect of occupational status, in line with  $H_{6b}$ . Immigrants who switch from being unemployed to having a manual job, develop more contacts with natives as a result of this transition. No effect was found for switching to a high skilled, non-manual job, but this could be due to few respondents having such a job (9%). Furthermore, we found that as immigrants decide to settle permanently, they develop more interethnic contacts over time ( $H_{8b}$ ). The effect is particularly pronounced among the subsample of recently arrived immigrants.

Again there is an effect of Germany language proficiency, in line with  $H_{4b}$ . The effect is found among recent immigrants, who have to acquire the German language, and for whom most changes in language skills occur between consecutive waves. Recently arrived immigrants who improve their German language skills subsequently develop more ties to native Germans. Finally, contrary to our expectations, we found no evidence for changes in education ( $H_{5b}$ ) or immigrants' marital status ( $H_{7b}$ ) affecting the acquisition of interethnic ties.

## Discussion

This study has provided a dynamic analysis of interethnic contacts. The focus was on explaining the development of close ties between immigrants and natives. Most studies on interethnic ties relied on cross-sectional data, and the few dynamic studies that have been done in this field adopted a lagged panel design. In this study, we tested well-known hypotheses with a large panel survey covering a 15-year period, and using multilevel growth curve models we arrived at better estimates of causal effects. Furthermore, we proposed a new relevant determinant of interethnic ties, namely settlement intentions, and we studied these processes among immigrants from five sending countries in Germany. Four conclusions can be drawn from our study.

First, our growth curve approach replicated some findings from earlier cross-sectional and lagged panel studies on interethnic ties. In line with earlier observations (e.g., Martinovic, Van Tubergen, and Maas 2009, 2011), we found that proficiency in the host country language is related to having more interethnic ties. Importantly, we detected both within- and between-person effects: people who speak the language of the host country have more contacts with natives than those who speak the language poorly, and as language proficiency improves for an individual over time, contacts with natives become more common for that individual. From a causal perspective, between-person effects might be due to other unmeasured differences across individuals that relate to interethnic ties. This is not the case for the within-person effect of language skills, as this expresses the effect of language learning on subsequent changes in interethnic ties. Furthermore, and also in line with prior research, workplace is an important source of opportunities to get in contact with the native population: getting a (manual) job results in increased interethnic ties. Becoming employed thus probably opens new opportunities for coming into contact

with majority members. The lack of support for the expectation that a switch from unemployment to a high-level job would consequently increase interethnic contacts can most likely be attributed to the small number of respondents who make this switch, as suggested by the similarly large coefficients for the within-person effects of getting a manual and non-manual job but twice as large standard error for the latter. Taken together, our growth curve models seem to suggest that learning the language and getting a job are driving forces of the development of ties with natives.

Second, the findings from the growth curve models sometimes differ strikingly from previous results. Most notably, the within-person effects do not show that immigrants who invest in education and who marry a German subsequently develop more ties to Germans. The data being used here possibly do not allow for a strong test of such within-person effects, because only few immigrants in our sample invest in schooling after migration and also few change their marital status. Regarding the latter, 78% of the respondents are in fact already married to a coethnic at the time of the first interview. Our results could therefore be affected by power problems, but they could also be real. For instance, immigrants from non-western countries who enrol in schools in Germany are likely to end up in ethnically mixed schools (Kristen 2005), and such a setting reduces opportunities for contacts with native Germans. This might explain why investment in education in the host country does not result in an increase in interethnic contacts. Regarding marital status, we did find that immigrants married to a native have more interethnic contacts than single migrants. Thus, it could be that what prior research has interpreted as a causal effect of getting a native partner is in fact a selection effect that only shows up in the between-person effect, but not in the within-person effect. In that case, immigrants who have more interethnic ties are more likely to find a German partner, either as a direct result of having these ties, or because of third variables that lead both to the development of interethnic ties and to the likelihood of finding a partner (e.g., sociability). To further disentangle the issue of causality and explain better the changes in interethnic contacts over time, a suggestion for future research is to collect data on newly arrived immigrants and interview them repeatedly from the moment of arrival in the host country. By registering immigrants' education, marital status and other time-varying characteristics shortly after arrival and repeating the interview during the first few years, we might find clearer within-person effects of these characteristics on interethnic contacts.

Third, we found evidence to suggest that immigrants' settlement intentions play a role in the acquisition of interethnic ties. We proposed this new determinant, suggesting that connecting with new people is costly, and that it is more rewarding if people expect such relations to be maintained for a longer time period. Indeed, the within-person effect of the growth curve model shows that as immigrants decide to stay in Germany permanently (rather than temporarily), they subsequently develop more interethnic ties. This finding adds to the existing literature on the determinants of interethnic contacts, and it is also related to other research areas that have found that settlement intentions of immigrants affect their commitments and investments



in the host country, such as host country language acquisition (Espenshade and Fu 1997) and home ownership (Lewin-Epstein and Semyonov 2000).

Fourth, our expectations about differences due to national origin were only partially confirmed. We expected Turks, who we assumed to be culturally most distant from Germans, to be the group with least and Italians and Spaniards the groups with most interethnic contacts, but this turned out not to be completely the case. Although Turks have fewer ties with Germans than (ex)Yugoslavs and Spaniards, they have just as many contacts as Greeks and Italians. For Greeks, we argued that they would be the second culturally most distant group, and we found that they indeed have fewer contacts than Yugoslavs and Spaniards but they do not 'outperform' Turks. In fact, among recently arrived immigrants Greeks actually develop fewer ties to natives than Turks. Our hypothesis about national origin was primarily based on the assumption about religious differences. However, the groups studied here are not entirely homogenous when it comes to religious denomination, and individuals might vary regarding the importance they attribute to religion. Moreover, differences in national origin could also reflect differences in cultural traditions other than religion. Measures of ethnic identification and adherence to specific cultural practices, as well as measures of religious denomination and religiosity might capture cultural distance better than a simple categorisation based on national origin.

In sum, this study has contributed to the literature on interethnic ties by developing a multilevel growth curve model that provides a stronger test of causal relationships. The study has generated confirmations of several well-known determinants, but also questioned the effects of others. Furthermore, it was hypothesised and indeed found that immigrants' settlement intentions positively affect their development of interethnic ties. Finally, even when accounting for all the socio-demographic determinants, we found that Spanish and (ex)Yugoslav immigrants tend to have more ties with Germans than Turks. Perhaps immigrants from these countries are culturally more similar to Germans, and future research should look into this by examining more directly the role of cultural practices and religious attachments in the establishment of interethnic ties.

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## **Notes**

- [1] The panel in the Dutch Social Position and Use of Facilities by Ethnic Minorities (SPVA) study has a much smaller number of the respondents than the GSOEP. The panel surveys of immigrants conducted in the USA, Canada, Australia and New Zealand consist of at most three waves and only cover a period of up to five years.

- [2] We have focused particularly on socio-demographic characteristics because we wanted to find out what categories of people are more likely to establish ties with natives. Psychological characteristics, such as group identifications and feelings, might also be important for the development of interethnic contacts but were not considered in this study.
- [3] The variables that have missing values are age at migration (4.7%), years of education (2.2%), interethnic contacts (1.6%) and language proficiency (0.6%).
- [4] The coefficient and *p*-value were obtained from a model in which the coethnic partner was used as a reference category.

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