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**The Impact of Education and Intergroup Friendship on the Development of
Ethnocentrism. A Latent Growth Curve Model Analysis of a Five Year
Panel Study among Belgian Late Adolescents**

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Abstract

In this article, we investigate individual level changes in ethnocentrism during adolescence and pre-adulthood. We use structural equation modeling for longitudinal designs on data from the Belgian Political Panel Survey (BPPS, 2006-2011). In this panel, 2,428 Belgian adolescents were questioned at three points in time: at the ages of 16, 18 and 21. Individual change is analyzed by using Latent Growth Curve Modeling. Individual variability was explained using two important predictors of ethnocentrism: education and intergroup friendship. Adolescents in lower educational tracks have higher initial levels of ethnocentrism and their levels of ethnocentrism continue to rise during the observation period. Adolescents who change to lower education tracks between 2006 and 2008 increase more in ethnocentrism than adolescents who stay in the same track. While intergroup friendship had an effect on initial levels of ethnocentrism this contact did not have an effect on subsequent changes in the level of ethnocentrism.

Keywords: ethnocentrism, education, adolescents, panel research, Belgium, contact hypothesis

S U M M A R Y

Introduction

Taking into account the trend toward higher levels of ethnic and cultural diversity in Western societies, tolerance is becoming increasingly important as a social attitude (Harrell, 2010). The success of anti-immigrant parties in Europe in the last decades suggests that a substantial number of citizens perceive immigration as a negative and possibly even threatening phenomenon (Eatwell, 2000). In Belgium, e.g., voting for extreme-right parties is principally determined by a negative attitude toward immigrants and migration policy in general is one of the most important electoral motives (Deschouwer, Delwit, Hooghe, and Walgrave, 2010). Ethnocentrism is not only a socially and politically salient attitude, it has also been found to be persistent and already present at an early age (Sears and Funk, 1999). Furthermore, ethnocentrism has been shown to be positively associated with discriminatory behavior and other attitudes like homophobia (Dejaeghere, Hooghe, and Claes, 2012; Hooghe, 2011). Given these social and political consequences of ethnocentrism, it becomes all the more important to understand how this attitude is being shaped. In this article we will investigate the development of ethnocentrism during late adolescence and early adulthood. Given the fact that the empirical research was conducted in a Western European context, we will follow the lead of most European research and operationalize ethnocentrism as a negative attitude toward immigration and diversity, as this is the most salient object of ethnocentrism in a Western European context (Davidov, Meuleman, Billiet, and Schmidt, 2008; Hooghe, 2008)

Previous research has focused mainly on the evolution of ethnocentrism at the aggregate level (e.g. Alwin and Krosnick, 1991; Coenders and Scheepers, 1998, 2008; Hooghe and Wilkenfeld, 2008; Vollebergh, Iedema, and Raaijmakers, 2001). In this line of research, it is assumed that aggregate levels of ethnocentrism can be influenced by media consumption, the discourse of political parties or by trends in the level of ethnic diversity in society. This kind of information, however, does not inform us about the individual level development of ethnocentric attitudes. Investigating individual level trajectories during or just after the impressionable years can provide us with information to arrive at a better understanding of the causal mechanisms that lead to the development of ethnocentric attitudes. Methodologically, we aim to extend previous work by using advanced structural equation methods for

longitudinal designs. A three wave panel design that measures adolescents' level of ethnocentrism at the ages of 16, 18 and 21 allows us to estimate individual change using a Latent Growth Curve Model.

In this analysis we will focus on two important predictors of (the development of) ethnocentrism: education and intergroup friendship (Dovidio, Geartner, and Kawakami, 2003; Hello, Scheepers, Vermulst, and Gerris, 2004; Pettigrew, 1998; Savelkoul, Scheepers, Tolsma, and Hagendoorn, 2011). Education is routinely found to be one of the most important predictors of ethnocentrism (Coenders and Scheepers, 2003; Pettigrew and Tropp, 2011). Highly educated individuals are more tolerant toward immigrants than are lowly educated individuals (Hello et al., 2004). In the literature on the contact hypothesis, intergroup friendship is considered to be a powerful tool to reduce ethnocentric prejudice (Allport, 1954; Pettigrew, 1998). Intergroup friendship is expected to have an immediate effect on ethnocentrism, but it is also assumed that the continued interaction with members of ethnic minority groups further continues to reduce prejudice. Despite the fact that quite some of the research stresses the role of education and of intergroup friendship in explaining trends in ethnocentrism, it is striking to observe that most of the research is based on purely cross-sectional observations. Ideally, proving the impact of both variables would require longitudinal observations. That is exactly what we want to do in this article, and we hope this panel design will allow for a better understanding of the determinants of ethnocentrism as it develops during late adolescence and early adulthood.

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Data and Methods

Data

We use the data from the Belgian Political Panel Survey, 2006-2011 (BPPS) (Hooghe, Havermans, Quintelier, and Dassonneville, 2011). This panel survey was designed to collect data about political values, attitudes and participation among 16, 18 and 21 year old adolescents from the two major language communities (French and Dutch) in Belgium. In order to collect the data for this panel, a two step design was used. First, a random school sample was drawn, that was representative with regard to province and school type (public or private education).¹ Subsequently, students of the selected schools were questioned by the

researchers during class hours. The first wave of the BPPS was conducted in 2006 (average age 16). The response analysis in 2006 indicated that the survey was representative for school type, education track, gender, and language group. Two additional waves were conducted in 2008 (average age 18) and 2011 (average age 21). In total 109 schools participated in the survey, with an average of 22 pupils per school. Respondents that changed schools between 2006 and 2008, were contacted in 2008 by mail. As the 2011 respondents all left school, they were contacted through mail and internet survey. There were no mixed-mode effects on the reports of ethnocentrism in the survey. Like in most panel surveys, the BPPS survey had to deal with panel attrition (small overrepresentation of female respondents and respondents of the Dutch language group), but the analysis showed that the third wave of the panel still can be considered as representative for the 21 year old population of Belgium. Weighing factors were introduced for language and gender, but they all remained below 1.40 (Hooghe et al., 2011).

In total, 3,025 respondents participated in all three waves of the panel. It has to be remembered, however, that we are mainly interested in detecting a negative feeling toward outside groups. Self-evidently, ethnocentric prejudice can be found both among the majority and minority groups of the population. Measuring ethnocentric prejudice among ethnic minorities, however, requires different measurement scales because the object of prejudice will be different among these minorities (Meeus, Duriez, Vanbeselaere, Phaet, and Kuppens, 2009). In line with previous analyses of the same dataset, we therefore limited ourselves to those respondents that unequivocally can be considered as belonging to the majority group within Belgium (Dejaeghere, Hooghe, and Claes, 2012). We do so by limiting the analysis to the respondents whose parents both held Belgian citizenship status at the moment the respondent was born. This led to a loss of almost 600 respondents, resulting in a final sample of 2,428 respondents belonging to the ethnic majority group.

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Methods

To measure individual trajectories of ethnocentrism over time we use a Latent Growth Curve Model (LGCM) with multiple indicators (Duncan et al., 2006; Meredith and Tisak, 1990; Schlueter, Davidov, and Schmidt, 2007). Figure 1 illustrates the logic of an LGCM: individual growth for ethnocentrism is a function of a latent intercept and a latent slope. The

latent intercept reflects the average initial value at the start of the longitudinal change process. The latent slope indicates the average individual change rate over time. LGC models have the advantage that it is possible to study predictors of individual change over time. This way, variant growth processes between subgroups can be examined. In other words, LGCM investigates whether, and to what extent, predictors are able to explain variance in the different trajectories. In this article, we will evaluate the effect of educational goal and intergroup friendship on changes in the level of ethnocentrism (see Figure 1).

To answer the research questions we will structure the analysis as follows: First, we will estimate the stability coefficients of ethnocentrism at three points in time using an autoregressive model. Second, we will study the individual change in ethnocentrism. We start the estimation with an unconditional growth model. This model focusses on the factor loadings of the intercept and slope. Next, we elaborate the model by adding predictor variables (the conditional model). The final development model controls for the effects of ethnic composition at school. As a consequence, we add a third level variable to the model (Level 1 = Time; Level 2 = Individual; Level 3 = School) (Muthén, 1997). Parameters are calculated using Robust Maximum Likelihood estimations. All models are estimated with Mplus.

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Individual trajectories

Subsequently, our goal is to identify the determinants of individual differences in the evolution of ethnocentrism during the observation period. First, we fit the unconditional linear growth model, i.e. a model without predictors (Model I in Table 2). To specify the linear growth model, the factor loadings of the intercept are constrained to 1 and the factor loadings of the slope to 0, 2, and 5 (time-lags between the measurement points, see Figure 1). Table 2 shows that the linear growth model fits the data well ($\chi^2=57$; $df=26$; $\chi^2/df=2.19$; RMSEA=.023; CFI=.996). The mean of the latent intercept represents the level of ethnocentrism of adolescents at the age of 16 (Time 1). The slope is significantly different from zero and positive; this indicates a growth in ethnocentrism (.183, $p<.001$). The variances of the latent intercept (non-standardized estimate=3.938, $p<.001$) and slope (non-standardized estimate=0.147, $p=.001$) indicate reasonable variability around the average intercept and

slope, i.e. inter-individual differences in the change trajectories (Byrne, 2012). The significant variances provide justification for the addition of variables to explain the variation in individual trajectories. The covariance between the latent intercept and slope is negative (-.268, $p=.012$), meaning that respondents with high initial levels of ethnocentrism, experience less growth over the five-year period. In other words, the difference between the levels of ethnocentrism in 2006 levels off in 2008 and 2011.

In order to explain these differences in the development of ethnocentrism, we add our three variables of interest, education track, educational goal and intergroup friendship, to the model. We tested a model interpreting education track, educational goal and intergroup friendship in 2006 as time-invariant variables ($\chi^2=218$; $df=113$; $\chi^2/df=1.93$; RMSEA=.018; CFI=.990). Controlling for language group, religious denomination and practice, education level of the parents and gender, education track and intergroup friendship have strong effects on the latent intercept (Model II). Respondents in general education have a lower initial level of ethnocentrism than the respondents in technical education (-.122, $p<.001$).⁵ The more outgroup friends, the lower the initial level of ethnocentrism (-.174, $p<.001$). These findings partly confirm our hypotheses. Further, girls are less ethnocentric than boys, adolescents with highly educated parents are less ethnocentric than adolescents with lowly educated parents⁶ and non-religious adolescents are to a small extent less ethnocentric than Catholic adolescents. Language group, educational goal and religious practice have no significant effect on the initial level of ethnocentrism.

Our main interest, however, is not the initial level of ethnocentrism but the evolution of this attitude. We notice a significant effect of education track on the slope (-.160, $p<.001$). Adolescents in general education have a lower rate of change (rate of increase) than adolescents in technical and vocational education (Figure 2). In contrast to hypothesis 2, the association between the latent slope and intergroup friendship is not significant. Having outgroup friends at the age of 16 has no effect on the change rate of ethnocentrism. Looking at the control variables, we notice a significant effect of language group on the slope (.106, $p=.003$). Respondents living in the French-speaking part of Belgium experience a steeper rise in the level of ethnocentrism than respondents in the Dutch-speaking part of Belgium. We also notice a small effect of gender on the slope: Although girls have a lower initial level of ethnocentrism, they increase more in ethnocentrism between 2006 and 2011 than boys (.076, $p=.016$).

FIGURE 3 AROUND HERE

In Model III of Table 2 we include variables measuring the difference in education track, educational goal, and intergroup friendship between 2006 and 2008 ($\chi^2=269$; $df=140$; $\chi^2/df=1.92$; RMSEA=.018; CFI=.987). This allows us to investigate the effect of changes in education level and intergroup friendship. An increase in educational goal has a small negative effect on the growth in ethnocentrism (-.079, $p=.023$). Adolescents with increased educational goals in 2008 have a lower rate of increase in ethnocentrism than adolescents with decreased educational goals in 2008. Yet, the strongest effect of education is found for students who changed tracks between 2006 and 2008 (.101, $p=.001$): Adolescents that were demoted to a lower track have a higher rate of increase in ethnocentrism than adolescents that stayed in the same track. Changes with regard to intergroup friendships have no significant longitudinal effect on ethnocentrism.

In Model IV we control for the ethnic composition of the school ($\chi^2=74$; $df=20$; $\chi^2/df=3.70$; RMSEA=.038; CFI=.963).⁷ The covariance between the intercept and slope at the between-school level is not significant. Ethnic composition of the school has no effect on the intercept, nor on the slope. Moreover, controlling for the school-level has no big influence on the estimates of the within-school variables. Only for the slope, the effects of educational goal and difference in intergroup friendship become significant ($p<0.05$). We can conclude therefore that while the ethnic composition of the school does not have an effect on the evolution of ethnocentrism, the contact hypothesis is mainly confirmed with regard to the effect of intergroup friendship.

TABLE 2 AROUND HERE

Discussion

In this article, we attempted to extend previous work on the evolution of ethnocentrism by analyzing a five year panel survey among Belgian late adolescents and young adults. More specifically, we used the Belgian Political Panel Survey data for the period 2006-2011 and this allowed us to track the development of ethnocentrism among 2,428 respondents between the ages of 16 and 21.

Support for hypothesis 1 was strong and unequivocal: We found the education track of the respondent to be a strong predictor both of ethnocentrism in 2006 (initial level) and of the evolution of ethnocentrism over the five year period. At the age of 16, we can observe already

a substantial and significant ‘tolerance gap’ between adolescents in high and those in low education tracks. Education furthermore affects ethnocentrism in a number of ways. Not only does education track have a direct effect on the level of ethnocentrism, there also seems to be a kind of ‘sleeping’ effect, determining the subsequent slope of ethnocentrism. Furthermore, pupils that experienced a demotion to a lower education track even grow more strongly intolerant of the presence of ethnic minorities. The fact that education also has this longitudinal effect, suggests that in the higher status tracks the Belgian school system is in fact quite successful in socializing adolescents into a more tolerant value pattern.

Hypothesis 2 on the impact of intergroup friendship was only partly confirmed. While friendship with members of outsider groups had a negative impact on the initial level of ethnocentrism, it did not have a significant effect on the evolution of ethnocentrism during the observation period. To drive that point home: Adolescents that expanded their intergroup friendship network between 2006 and 2008 did not follow a different developmental trajectory with regard to ethnocentrism if we compare them to their counterparts that lost some of their cross-ethnic friendships. We do acknowledge that, in line with the contact theory, intergroup contacts can be important. The effect of intergroup contact on the initial level of ethnocentrism was even stronger than the effect of education track. This might imply that the effect of intergroup friendships is concentrated mainly among a younger age group and decreases with age. To ascertain whether this really is the case, future observation using this panel might be very useful.

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Figure 3. Developmental trajectories of adolescents in different education tracks. Entries are sample averages of ethnocentrism for respondents in general, technical, and vocational education in 2006. Source: BPPS 2006-2011.

Table 1

Mean and standard errors (SE) for ethnocentrism, intergroup friendship and educational goal, proportion of respondents in education track

	<u>Time 1 (2006)</u>		<u>Time 2 (2008)</u>		<u>Time 3 (2011)</u>		<u>T-Tests</u>		
	Mean (SE)	N	Mean (SE)	N	Mean (SE)	N	Time 1 - Time 2	Time 2 - Time 3	Time 1 - Time 3
Ethnocentrism	2.47 (0.694)	2,226	2.45 (0.746)	2,349	2.58 (0.740)	2,357	1.134	-8.677 ***	-6.839 ***
Intergroup friendship	1.68 (0.986)	2,406	1.69 (0.987)	2,408	1.99 (1.040)	2,394	-0.788	-12.881 ***	-13.212 ***
General education	63.2 %	1,913	54.5 %	1,650	n.a.		n.a.		
Technical track	24.8 %	749	31.4 %	949	n.a.		n.a.		
Vocational training	12.0 %	363	10.8 %	326	n.a.		n.a.		
Educational goal	3.15 (0.740)	2,385	3.16 (0.737)	2,385	n.a.		-0.033	n.a.	

Note. Average scores on ethnocentrism (1-4 scale), Intergroup friendship (1-4 scale) and Educational goal (1-4 scale). Percentage of respondents in education track. Paired Samples T-Test score. Source: BPPS, 2006-2011. Sign. for T-tests: *** p<.001

Table 2

MLR Estimates of the Latent Growth Curve Model of Ethnocentrism

Effect	Model I	Model II	Model III	Model IV
WITHIN-School				
Intercept	Fixed at zero	Fixed at zero	Fixed at zero	
Slope	.070***	.055	.082	
Var. intercept	3.938***	2.897***	2.857***	.227***
Var. slope	.147***	.112***	.108***	.008***
Covar. intercept and slope	-.204*	-.180**	-.180**	-.012**
Intercept on				
Language group (1=French)		-.033	-.030	-.055
Gender (1=female)		-.178***	-.176***	-.196***
Religious denomination				
Christian/Catholic (=ref.)				
Not religious		-.065*	-.064*	-.057
Other religion		-.005	-.012	-.044
Religious practice		-.006	-.009	-.009
Education level parents		-.154***	-.154***	-.118***
Educational goal time 1		-.031	-.030	-.050
Education track time 1				
General education		-.122***	-.125***	-.104*
Technical education (=ref.)				
Vocational education		.030	.031	.027
Intergroup friendship time 1		-.174***	-.168***	-.182***
Slope on				
Language group (1=French)		.106**	.099**	.149***
Gender (1=female)		.076*	.080*	.106***
Religious denomination				
Christian/Catholic (=ref.)				
Not religious		.059	.061*	.064
Other religion		-.022	-.010	.002
Religious practice		.022	.036	.046
Education level parents		-.057	-.038	-.025
Educational goal time 1		-.056	-.081	.138*
Diff.educgoal time 1- time 2			-.079*	.098*
Education track time 1				
General education		-.160***	-.161***	-.210***
Technical education (=ref.)				
Vocational education		.015	.022	.019
Changed track (1=Yes)			.101***	.099**

Intergroup friendship time 1		.054	.020	.006
Diff. intergr. friends. time 1- time 2			-.041	.088*
BETWEEN-School				
Intercept				3.345***
Slope				0.056*
Var. intercept				.024*
Var. slope				.000
Covar. Intercept and slope				-.002
Intercept on				
Ethnic composition				.131
Slope on				
Ethnic composition				.526
χ^2	57***	218***	269***	74***
Df	26	113	140	20
χ^2/df	2.19	1.93	1.92	3.70
RMSEA	.023	.018	.018	.038
CFI	.996	.990	.987	.963

Note. Entries for covariates are standardized Robust Maximum Likelihood Estimates (MLR). Entries for intercept and slope variance and covariance are unstandardized MLR estimates. Model I: LGCM without covariates; Models II and III: LGCM with time-invariant covariates; Model IV: Three-level LGCM with time-invariant within- and between-school covariates. χ^2/df statistic accounts for the impact of large sample sizes (Hooper, Coughlan, and Mullen, 2008). RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index. *** $p < .001$; ** $p < .01$; * $p < .05$.