

CONstrict IN THE SCHOOL CONTEXT: The Impact of Ethnic School Diversity on the Quantity and Quality of Friendships

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Constrict theory states that, in the short run, ethnic diversity in any context lowers both the quantity and the quality of interpersonal contacts. We test this theory in the school context, expecting that ethnic school diversity yields fewer and lower quality friendships. Moreover, we investigate whether the associations hold when controlling for the school's socioeconomic situation, and whether the relations between ethnic school diversity and the social outcomes differ between natives and immigrants. Multilevel analyses on data from the Flemish Educational Assessment, consisting of 10,546 natives and 1,324 immigrants in 85 secondary schools, show that ethnic diversity yields fewer friendships and a lower attachment to friends. However, this appears to be due to the schools' socioeconomic composition. For immigrants, moreover, a higher ethnic diversity yields more friendships and a higher attachment to friends. Implications for theory and practice are discussed.

INTRODUCTION

Growing immigration and ethnic diversity is a worldwide phenomenon, and neighborhoods, schools, and workplaces provide increasing opportunities for contact between individuals from different ethnic groups. Scholars from different fields have focused on the consequences of such increased ethnic diversity. However, their opinions fall into two diametrically opposed theoretical perspectives. On the one hand, scholars support the premises of *contact* theory and its variants (Allport 1954; Sigelman and Welch 1993; Pettigrew and Tropp 2006), suggesting that, in brief, ethnic diversity in a context fosters contact between people from different ethnic backgrounds, which erodes out-group prejudice, at least when the necessary conditions—such as similar status, and collaboration toward attainment of a common goal—are fulfilled (Pettigrew 1998; Moody 2001). This eventually results in favorable outcomes regarding attitudes toward and relations with the out-group such as reduced ethnocentrism, more cross-ethnic friendship, and increasing out-group solidarity. Other researchers advocate a *conflict* perspective (Blumer 1958; Blalock 1967; Bobo and Zubrinsky 1996), stating that increased ethnic diversity exacerbates the in-group/out-group distinction, especially when resources are limited, yielding negative relations with the out-group, including increased interethnic conflict and ethnocentrism and lower out-group solidarity.

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More recently, Putnam (2007:143) proposed a third way of linking a context's ethnic diversity to interpersonal relations: *constrict* theory, which states that ethnic diversity in a certain context does not result in more relations—be it conflictual or friendly—between individuals from different ethnic groups, but on the contrary, in *fewer* relations *in general*. In constrict theory, the in-group/out-group distinction is less relevant: Individuals are said to withdraw from all other people in the context, no matter whether these belong to the in-group or the out-group. Empirical research, showing that increased ethnic diversity at the neighborhood level results in lower levels of bonding with others, supports this line of thinking (Putnam 2007; Lancee and Dronkers 2011). However, as noted by Lancee and Dronkers (2011), constrict theory might not be applicable to all contexts. Indeed, research testing the theory at the national level (Gesthuizen, Van der Meer, and Scheepers 2009; Hooghe et al. 2009) failed to replicate the results of the studies at the neighborhood level. This observation raises the need to study the theory in other relevant social contexts.

In this article, we will test constrict theory in a school context. More specifically, we will test whether ethnic school diversity is related to two outcomes derived from constrict theory—namely (1) the *quantity* of friendships in general (both in-group and out-group), and (2) the *quality* of friendships as measured by attachment to friends. Furthermore, we investigate whether the associations of ethnic school diversity with the outcomes stand when we control for the school's socioeconomic context, as some authors (e.g., Tolsma, Van der Meer, and Gesthuizen 2009) find that, at the neighborhood level, socioeconomic makeup, rather than the ethnic mix of the context, reduces social solidarity and interpersonal bonding. Finally, starting from segmented assimilation theory (Portes and Zhou 1993; Portes and Rumbaut 2001), we expect ethnic school diversity especially to lower the quantity and quality of friendships for immigrants. Indeed, earlier studies established that the impact of a context's ethnic composition on relational outcomes may differ between natives and immigrants (Tropp and Pettigrew 2005; Van Houtte and Stevens 2009; Lancee and Dronkers 2011). As such, a third specific aim of the current article is to test whether ethnic school diversity impacts natives and immigrants differently.

BACKGROUND

Constrict Theory

Putnam (2000) distinguished two forms of social capital. Bonding social capital involves ties within homogeneous groups, for instance, between members from the same ethnic group. It is a form of social capital that is exclusive and inward looking. Bridging social capital, on the other hand, involves ties between individuals who differ from each other in some way, for instance, between members from a different ethnic group. According to Putnam (2000), bonding capital provides resources for “getting by,” while bridging social is especially important for “getting ahead.” As such, scholars state that the benefits of bonding social capital, in comparison with those of

bridging social capital, are limited (see, e.g., Putnam 2000; Leonard 2004). Putnam (2007) states that the conflict and contact approaches share a fundamental assumption, namely that bonding and bridging capital are negatively correlated: positive in-group relations accompany negative out-group relations, and vice versa. Putnam (2007) disagrees with this assumption, stating that, at least theoretically, bonding and bridging capital may vary independently, making it imaginable that relations with both the in-group *and* the out-group deteriorate as a consequence of ethnic diversity. The core idea of constrict theory, then, is that in the short run, ethnic diversity reduces individuals' solidarity with others, irrespective of whether they belong to the in-group or out-group:

Once we recognize that in-group and out-group attitudes need not be reciprocally related, but can vary independently, then we need to allow, logically at least, for the possibility that diversity might actually reduce *both* in-group *and* out-group solidarity—that is, both bonding *and* bridging social capital. We might label this possibility “constrict theory.” (Putnam 2007:144, italics in original)

With data from the United States, Putnam (2007) demonstrates that the level of ethnic diversity of the neighborhood is related to several individual-level indicators of social isolation (for the entire list of outcomes, see Putnam 2007:149–50). Two outcomes are of particular interest to this article. First, Putnam shows that greater ethnic diversity in a neighborhood is related to a smaller number of friends in the neighborhood. Second, individuals experience less attachment to others, indicated by lower levels of trust in neighbors (both in-group and out-group). Hence, it may be stated that, according to constrict theory, ethnic diversity in a given context lowers both the quantity and the quality of interpersonal contacts:

Diversity seems to trigger *not* in-group/out-group division, but anomie or social isolation. In colloquial language, people living in ethnically diverse settings appear to ‘hunker down’—that is, to pull in like a turtle. (Putnam 2007:148, italics in original)

On the neighborhood level, studies partly replicate and partly reject Putnam's results (*in the Netherlands*: Tolsma et al. 2009; Lancee and Dronkers 2011; Vervoort, Flap, and Dagevos 2011; *in the United Kingdom*: Letki 2008; *in Canada*: Stolle, Soroka, and Johnston 2008). Tolsma et al. (2009) found that the ethnic heterogeneity of neighborhoods and municipalities is indeed negatively related to the frequency of contact with neighbors, voluntary work, and generalized trust. However, after controlling for socioeconomic indicators, the negative impact of ethnic heterogeneity mostly disappeared. The authors conclude that especially economic deprivation in the neighborhood, more so than its ethnic diversity, is responsible for the decline in individual-level indicators of social cohesion. Very similar observations are made by Letki (2008) for racial diversity of British neighborhoods, concluding that there is a shortage of social capital in

economically disadvantaged neighborhoods, but not necessarily in ethnically diverse ones. However, a Dutch study by Lancee and Dronkers (2011) does find that ethnic diversity negatively impacts quality of contact with one's neighbors, even when socio-economic variables were entered into the model. The study by Lancee and Dronkers (2011) raises another interesting point, as the authors find important differences between natives and immigrants. In general terms, ethnic diversity had a more favorable impact on immigrants than on natives. Another Dutch study by Vervoort et al. (2011) agrees on the existence of differences between immigrants and natives but finds that ethnic diversity reduces out-group ties for immigrants, fostering less native friends, and more co-ethnic friendships.

Studies have also tested constrict theory on a higher level of analysis, investigating the impact of ethnic diversity cross-nationally (Gesthuizen et al. 2009; Hooghe et al. 2009). However, these studies show that the level of ethnic diversity in a country is not related to indicators of social cohesion. It is therefore possible that constrict theory is not applicable in all contexts (see also Lancee and Dronkers 2011). As the theory is a relatively young approach, it still needs to be tested further.

Ethnic School Diversity and Constrict?

In present multiethnic Western societies, schools are important contexts where children from different ethnic groups meet each other. The multiethnic character of schools has led scholars to investigate the effects of the ethnic school composition on various student outcomes. The ethnic composition of the student body has been shown to affect students' academic achievement (Bankston and Caldas 1996; Agirdag, Van Houtte, and Van Avermaet 2012), aspirations (Van Houtte and Stevens 2010), self-esteem (Gray-Little and Hafdahl 2000), feelings of national identity (Agirdag, Van Houtte, and Van Avermaet 2011), deviancy and crime (Eitle and Eitle 2010; Demanet and Van Houtte 2011a), and school attachment (Cheng and Klugman 2010).

Other important outcomes of the ethnic school composition are the relations students develop at school. In this respect, schools are considered by policymakers and scholars alike as being key institutions in instigating interethnic integration and improved interethnic relations (Agirdag, Van Houtte, and Van Avermaet 2011; Putnam 2007; Van Houtte and Stevens 2009; Stearns 2010). Underscoring the importance of schools as an interethnic meeting place, many researchers have focused on the resulting relational outcomes of being in an ethnically diverse school context. Scholars have shown that increased ethnic school heterogeneity yields a higher number of cross-ethnic friendships (Quillian and Campbell 2003; Goldsmith 2004; Van Houtte and Stevens 2009) and more ethnically diverse friendship networks (Quillian and Redd 2009). These findings support the premises of contact theory. Other empirical studies, on the other hand, find that higher ethnic diversity at school can yield more interethnic conflict (Goldsmith 2004). This is especially the case when ethnic groups at school are of equal size (Longshore 1982), when students from different ethnic groups are treated differentially (Walker 1999), and when shared resources are scarce (Blalock 1967). Eventually, the higher interethnic conflict at

school may lead to more victimization among students (Agirdag, Demanet, Van Houtte, and Van Avermaet 2011). These studies lend support to the conflict theories.

While contact and conflict perspectives have been the theoretical focus of most studies in this domain, the constrict approach has been largely neglected. If Putnam's (2007) assertions are correct, and students in ethnically diverse school contexts withdraw indeed from social life at school, this means an important impediment to the supposed integration function of schools. Starting from constrict theory, we expect students enrolled in ethnically diverse school contexts to have fewer friendships at school and to feel less attached to the friends that they do have. Although much research has already been done on relational outcomes of enrolling in an ethnically diverse school context, research linking ethnic school composition to these outcomes has been scarce to nonexistent.

First, although many studies have been undertaken to assess ethnic compositional effects on the amount of friendships in schools, these studies remain limited to investigating inter- or intra-ethnic friendship relations (e.g., Moody 2001; Van Houtte and Stevens 2009; Vervoort et al. 2011). As constrict theory expects individuals in ethnically diverse contexts to withdraw from all social relations—both in-group and out-group—we hypothesize that ethnic diversity at school diminishes all friendships, both between members from different ethnic groups and between members belonging to the same ethnic group. Research linking the ethnic school composition to students' total number of friendships is virtually nonexistent. One study reported on the difference in total friendship nominations between students in majority black, ethnically balanced, and majority white classrooms (Hallinan 1982). The findings showed that both white and black students made more friendship nominations in majority black and ethnically balanced classes as compared with majority white classes. The author concluded that more best friend choices were made as the proportion of black students in class increased. These findings could give us a hint that constrict theory is not applicable to classroom contexts. However, it does not tell us anything about the applicability of constrict theory at the school level. Research into the relationship between ethnic school diversity and the total number of friendships at school seems warranted.

Next to the quantity of friendship relations, it is also important to pinpoint the quality of students' friendships. Friendship quality is associated to self-image (Claes 1992), levels of depression (Demir and Urberg 2004), and student misbehavior (Demanet and Van Houtte 2011b). If constrict theory were correct, enrolling in ethnically diverse school contexts would harm students by diminishing their friendship quality. However, scant research has linked ethnic school diversity to the quality of friendships. Kao and Joyner (2004) considered the number of activities undertaken with friends as an indicator of friendship quality. They showed that, while the presence of students from another ethnic group at school diminishes ethnic boundaries, students who cross those boundaries still perform less activities with friends from another ethnic group than with their same-ethnic friends. However, they did not investigate

whether the number of activities with same-ethnic friends decreased as the ethnic diversity at school increased. Likewise, Chan and Birman (2009) investigated whether the ethnic diversity at school is related to the levels of social support in friendships. Focusing on Vietnamese immigrant students in the United States, they found that ethnically diverse schools lowered the level of social support provided in interethnic friendships. These findings seem to concur with expectations from constrict theory; however, according to the theory, higher ethnic diversity would diminish not only the quality of interethnic friendships but also the quality of all students' friendships. To date, there is still no study that investigated the effect of the school ethnic diversity on the quality of students' friendships, without distinguishing between interethnic and intra-ethnic friendships.

In a test of constrict theory, it may be important to take into account the socioeconomic composition of the context in question. Some studies investigating the theory at the neighborhood level found that economic deprivation, rather than the ethnic diversity of the neighborhood, was responsible for declining cohesion (Letki 2008; Tolsma et al. 2009). This fits into the literature concerning the relationship between individuals' social class position and their social capital. It is well-known that students with a higher socioeconomic position have a higher access to social capital than their counterparts from a lower socioeconomic background (see, e.g., Reay 2006). A concentration of lower socioeconomic status (SES) children in school may diminish social capital in that school (see also Myers, Kim, and Mandala 2004). As ethnically diverse schools mostly are schools with a lower socioeconomic position, especially in Flanders (see below), it may well be that a lower quantity and quality of students' friendships in ethnically diverse schools is actually due to the lower socioeconomic position of those schools.

Furthermore, it may also be important to distinguish between different ethnic groups of students. Scholars have stated that the implications of being in an ethnically diverse school for interpersonal relations may be different for students with different ethnic backgrounds (Hallinan and Teixeira 1987; Putnam 2007:154; Tropp and Pettigrew 2005; Van Houtte and Stevens 2009). Putnam (2007) discussed this point himself, dismissing its correctness on the neighborhood level. However, as noted previously, Lancee and Dronkers (2011) did show that constrict theory is not equally applicable to natives and immigrants. A theoretical reason for this may lie in segmented assimilation theory (see Portes and Zhou 1993; Portes and Rumbaut 2001). This theory poses that immigrant groups follow a variety of paths regarding their acculturation in their host society. These paths include conventional upward assimilation, downward assimilation (assimilation to the urban underclass), and selective acculturation (e.g., combining strong bonds with both the ethnic community and the host society). Contextual characteristics are theorized to have an impact on the possible assimilation outcomes. As immigrant groups face hostility from the outside world, strong ties with co-ethnics might compensate the lack of social resources. As such, ethnically homogeneous contexts (e.g., ethnic enclaves) are expected to result in upward mobility and other beneficial outcomes as the presence of co-ethnic networks

provides resources that are less available in the broader society. As it is harder in ethnically heterogeneous schools to establish co-ethnic networks (Hallinan 1982; Van Houtte and Stevens 2009), ethnically diverse schools are expected to result in more disadvantageous outcomes for immigrants. As natives do not face the hostility from the outside world to the same extent, we may expect on the basis of this theory that negative consequences of diversity especially influence immigrants. As little is known about these mechanisms in the school context, it is imperative to test whether ethnic diversity erodes the quantity and quality to a different degree for immigrants than it does for natives.

This theoretical background leads us to address the following research questions. We test whether school ethnic diversity is related to the quantity and quality of students' friendships, as measured by the total number of friendships and students' feelings of attachment to their friends. Furthermore, we test whether a school's socioeconomic composition, rather than its ethnic diversity, is responsible for eventual associations. Third, we test whether the relations between ethnic diversity and, respectively, number of friendships and attachment to friends differ for natives and immigrants.

Immigration and Education in Flanders

Before we explain the methodological framework, a word is in order about the particulars of Flanders as an immigration region and the impact thereof on the educational system (for an extended discussion of these issues in Flemish education, see Van Praag, Stevens, and Van Houtte 2013). Flanders is the Dutch-speaking, northern part of Belgium, and is a region with its own parliament and government. Since 1988 the Flemish government has the jurisdiction to implement and govern its own educational system, which limits the study to the students and schools in this region. Since the end of World War II, Belgium has actively recruited migrants, first from Southern Europe (mostly from Spain and Italy), later from Turkey and Morocco. Migrants were imported as guest workers, to fill in temporary job positions in some sectors (e.g., the mining sector). As such, they were drawn to fulfill a temporary economic buffer function (Sierens 2006). This migration was generally seen as a temporary situation; however, before long, wives and children joined the immigrants—a reuniting of families that was legally allowed. Although initially it was taken for granted that the immigrants would eventually return to their home country, it became clear in the 1970s that they would not: Labor migration had become family migration (Van Praag et al. 2013). In 1973, together with other European countries, Belgium issued a migration stop, but the reunification of families continued (Sierens 2006).

Immigrants and their children mostly came to live in particular districts within the larger cities in which industries were located. Because the Belgian authorities expected the immigrants' presence to be temporarily, they did not organize special schools for the immigrants (e.g., as did the German authorities). Consequently, the immigrants chose to send their school-aged children to schools in their communities and neighborhoods, which at that time mostly enrolled native students from working-class

backgrounds (Sierens 2006). As these migrant communities were mostly inhabited by a wide range of different ethnic groups, the influx of immigrant children in these schools increased the schools' ethnic diversity (see also Van Houtte and Stevens 2009; Demanet, Agirdag, and Van Houtte 2011). In time, these schools were confronted with "white flight," as native, mostly middle-class, parents interpreted the increase of immigrant students as a decline of educational quality, and decided to enroll their children in other schools (Mahieu 2002; Agirdag et al. 2012). This process in many ways is facilitated by the quasi-market educational system in Flanders (Agirdag et al. 2012). This means that the assignment of students to schools is not regulated (e.g., by place of residence), and parents are allowed to choose or avoid schools with a certain social composition. Eventually, white flight led to the development of the first schools where members of diverse ethnic minority groups were concentrated: so-called ethnic concentration schools (Leman 2002). Higher-educated and economically better-situated immigrant parents tended to follow this example, causing the so-called "black flight" (Mahieu 2002). As such, it is noteworthy that Flemish schools are not segregated either along ethnic or socioeconomic lines, but that these lines intertwine in a socio-ethnic school segregation (Driessen 2002; Desmedt and Nicaise 2005; Sierens 2006; Demanet and Van Houtte 2011a). In the context of this study, this makes it especially relevant to assess whether an eventual impact of ethnic school diversity on students' social life is in fact not due to the socioeconomic situation in those schools.

METHODS

Data

The data were part of the Flemish Educational Assessment, gathered in the school year 2004 through 2005 in 85 Flemish secondary schools. For data gathering, we used multistage sampling. First, we selected a sample of 48 postal codes from the population of 240 Flemish postal codes. Municipalities were selected proportionately to their size, with the size defined by the number of schools within each postal code, information that was provided by the Flemish Department of Education. Hence, larger municipalities with more schools had a greater chance of being selected. From the 240 Flemish postal codes, we selected 48. This resulted in the desired overrepresentation of the larger municipalities. Our second step was to select all regular secondary schools in the chosen postal codes that provide a third and fifth grade (which corresponds to grades 9 and 11 in the American system), ultimately yielding a school response rate of 31 percent. This low response rate is due to schools in Flanders being swamped with research requests. Schools usually choose the research they want to take part in on a first-come, first-served basis. Analyses in which we compared our sample with the Flemish school population, based on information attained through the Flemish Department of Education, showed that the participating schools did not differ from those that opted out in terms of school sector, size, curriculum, or student composition. No systematic biases occurred, and participating schools are representative for the Flemish situation (Van Houtte et al. 2005). In the participating schools, we asked all

third-grade and fifth-grade students present at the time of the visit to fill out the questionnaire. Students filled out questionnaires in class, under the supervision of one or two members of the research team and a teacher. A total of 11,945 students completed the questionnaire, of which 11,872 (87 percent) proved valid: 6,081 in the third grade and 5,791 in the fifth grade. This constituted an individual response rate of 87 percent overall (third grade: 90 percent; fifth grade: 85 percent). Of all respondents, 1,324 (11.2 percent) were identified as immigrants, most of which had Turkish or Moroccan backgrounds (both about 30 percent). A smaller number of immigrants had a Southern European (about 10 percent), Eastern European (about 8 percent), other North-African than Moroccan (about 5 percent), or other unknown background (about 16 percent). Natives were enrolled in all 85 schools in the data set; however, there were six schools in which no immigrants were enrolled. The questionnaires were not anonymous because other data provided by the school were coupled to the students' responses. Ultimately, however, we removed all names, so all analyses were performed on anonymous data.

Variables

Outcomes

The first dependent, *number of friendships*, was assessed by a nomination procedure. This has been proven a successful method for gathering information on peer ties and interactions (for a discussion, see Coie, Dodge, and Kupersmidt 1990). As part of the nomination procedure, students were handed a list of all the students in their school that attended their grade. Next to the names, we listed identification numbers of those students. Respondents were asked to provide us with the respondent identification number of their best friends. Using network analysis, we computed each student's *out-degree* on this question, meaning that we counted the number of students the respondent in question indicated as a best friend. On average, the number of friendship nominations in the data set was 6.70 (standard deviation [SD] = 3.27; see Table 1).

The measure of the second dependent variable, *attachment to friends*, consisted of four items: "I wish I had other friends at school"; "My friends accept me as I am"; "I trust my friends at school"; and "My friends at school respect my feelings and ideas." The respondents could answer on a five-point scale, ranging from *absolutely does not fit to fits me perfectly* (1–5). These answers were summed up to a scale, ranging from 5 to 19. The mean score in our sample was 15.81 (SD = 2.76; see Table 1). The Cronbach's alpha for the scale was .74.

Individual-Level Variables

The principal criterion for determining students' *ethnicity* was the birthplace of maternal grandmothers. Only 1 percent of the respondents did not answer that question. To determine the ethnicity of those students, we considered the nationality of students' mothers and fathers, as most immigrants are second- and third-generation citizens and have Belgian nationality. As is common practice in European research, only West European birthplaces and nationalities were considered as native descent (e.g., Timmerman,

TABLE 1. Descriptive Statistics for Variables: Frequencies (Percent), Means, Standard Deviations (SD), and N

Variables	Percent	Mean	SD	Cronbach's alpha	N
Dependent variables					
Number of friendships		6.70	3.27		11,472
Attachment to friends		15.81	2.76	.74	11,554
School level					
Ethnic diversity		-.67	.23		85
Occupational status composition		4.80	1.23		85
School sector					85
Public	50.60				
School size		461.55	285.27		85
Student level					
Ethnicity					11,870
Immigrant	11.20				
Gender					11,843
Girl	51.40				
Occupational status		5.20	2.10		11,137
Grade					11,872
Third year	51.20				
Vocational track					11,872
Vocational	22.10				

Hermans, and Hoornaert 2002). Additional criteria—in the case of missing data regarding nationality (father: 4 percent, mother: 3.3 percent)—were the language spoken at home (other than Dutch), religion (Islam), and the student's name (e.g., Felouzis 2003). This resulted in a dichotomous variable (0 = native, 1 = immigrant); 11.2 percent were immigrants. With respect to *gender* (0 = boy, 1 = girl), the sample was evenly divided: 51.40 percent of the respondents were girls. The SES of students' families was measured by the class scheme of Erikson, Goldthorpe, and Portocarero (1979), and is based on the students' parental *occupational status*. For this, we considered the occupation of the father or the mother (Erikson et al. 1979), or, if they were unemployed, we took the last occupation into account. We used the highest ranked occupation to determine the occupational status of the family. The mean occupational status in our sample was 5.20 (SD = 2.10). It is noteworthy that, on average, parents of immigrants had a significantly lower occupational status than natives ($p < .001$). Natives had a mean of 5.45 (SD = 1.93), while immigrants had a mean of 2.96 (SD = 2.23). *Grade* was evenly distributed: 51.2 percent of the respondents attended the third grade. We also distinguished students who attended a *vocational track* (0 = other track, 1 = vocational track). Among respondents, 22.10 percent attended the vocational track.

School-Level Variables

The measure for the *ethnic school diversity* is expressed as the total number of different groups of immigrants, corrected by their size. The used index is based upon the Herfindahl index as used by Putnam (2007). The Herfindahl index is calculated as $(p_{\text{ethnic group 1}})^2 + (p_{\text{ethnic group 2}})^2 + \dots + (p_{\text{ethnic group n}})^2$. The following eight ethnic groups were included: (1) native Belgians, (2) Western-European immigrants, (3) Southern-European immigrants, (4) Turks, (5) Moroccans, (6) other North-Africans, (7) Eastern-European immigrants, and (8) others. Following previous studies (Van Houtte and Stevens 2009; Lancee and Dronkers 2011), the next step was to multiply the Herfindahl index by -1 , since the Herfindahl index in fact is an index of homogeneity, whereas we are interested in heterogeneity. Consequently, the eventual index has a range of -1 to 0 ; -1 implies no diversity at all, that is, only one ethnic group is enrolled in the school. A value approaching zero means total diversity: all pupils in school have a different ethnic origin. The values in our data set ranged from -1 to $-.18$. On average, the 85 schools in our sample had a value of $-.67$ ($SD = .23$; see Table 1).

As is common (see Opendakker and Van Damme 2001; Demanet and Van Houtte 2011a), the schools' SES composition was measured by calculating the mean *parental occupational status* (see previous section) per school. The mean of the 85 schools was 4.80 ($SD = 1.23$; see Table 1). In the Flemish region, schools fall into two different sectors: the public sector (labeled "official education"), which is provided by the Flemish, provincial, and city governments, and the private sector (labeled "free education"), which consists mainly (and almost exclusively) of Catholic schools. For historical reasons, the private sector has always been the most developed, in terms of both the number of schools and the number of enrolled students; 67 percent of all regular secondary schools are in the private sector. Although the different sectors are provided by different institutions, in the Flemish school system, no difference is made between private and public schools with respect to state support. In the data, 50.6 percent are public, which is a slight overrepresentation of the Flemish situation. This is because we oversampled larger municipalities, where the majority of public schools in Flanders are situated. *School size* was measured by asking the school administrators to provide us with the total number of students at school. However, we obtained information from only 83 of the 85 schools in our sample. The mean school size in our sample was 461.55 ($SD = 285.27$).

Data Analysis

Given that we were dealing with a clustered sample—students are nested within schools—and our research questions deal with data on two levels—characteristics at the school level (ethnic diversity and schools' socioeconomic composition) are hypothesized to affect individual outcomes—it was imperative to use multilevel modeling (Snijders and Bosker, 1999; Raudenbush and Bryk, 2002). In performing multilevel analyses, we follow previous studies on the validity of constrict theory by Lancee and Dronkers (2011) and Tolsma et al. (2009). Our variables addressing the number of friendships and attachment to friends had a normal distribution, permitting us to use

standard linear multilevel regression models. As is common in multilevel analyses, we first estimated unconditional models, which enable us to determine the amount of variance of each outcome situated at the school level.

We tested three models for each outcome. In the first model, we investigated the role of ethnic school diversity. In the second model, we tested whether the association between ethnic school diversity and the three outcomes stands when taking into account the school's socioeconomic composition, as measured by the mean parents' occupational status. Since, in the present data, there exists a correlation of $-.75$ ($p < .001$) between the socioeconomic school context and the ethnic school diversity, we have to consider these results with caution because of possible multicollinearity.¹ Furthermore, we controlled for several other school and individual characteristics. First, school sector was added as a control variable. In our analyses, it is necessary to account for the school sector, as migrants in Flanders are generally Muslim and mostly attend public schools, as private schools are mainly Catholic. Moreover, public schools are overrepresented in urban areas, which is where the majority of migrants in Flanders live. Second, it would be obvious to control for school size, as studies have shown that the total number of students at school can impact students' friendship relations (e.g., Joyner and Kao 2000; Moody 2001). However, as was discussed previously, for school size, we obtained information from only 83 of the 85 schools used in the analysis. As multilevel analysis does not permit missing values at the second level, and analyses including school size produced the same basic image as the ones without school size,² we eventually did not include this variable in the analyses. We added individual-level control variables, to test whether the school effects endure when taking into account student characteristics, to preclude selection effects. Hence, we controlled additionally for students' ethnicity, gender, parents' occupational status, grade, and attending a vocational track. In the third and final model, we included a cross-level interaction term between ethnic school diversity and students' ethnicity, to assess whether the associations of the former with the two outcomes differ between natives and immigrants.

RESULTS

To investigate whether the school context matters with respect to the two dependent variables, we perform unconditional multilevel null models. This provides us with the variance components at the school and individual level. We are particularly interested in the proportion of variance occurring at the school level, computed as the between-school variance component divided by the sum of between-school and within-school variance ($\tau_0/[\tau_0 + \sigma^2]$). From these unconditional models (see Table 2), it is clear that the two dependent variables vary significantly across schools. Of the total variance in number of friendships, 6.2 percent ($\sigma^2 = 10.014$; $\tau_0 = .667$; $p < .001$) occurs between schools. For attachment to friends, 4.3 percent is between schools ($\sigma^2 = 7.336$; $\tau_0 = .333$; $p < .001$). This warrants the use of school-level determinants.

TABLE 2. Hierarchical Linear Modeling Unconditional Model Characteristics: Variation between Schools in Number of Friendships and Attachment to Friends

Characteristic	Number of friendships	Attachment to friends
Intercept	6.441***	15.654***
Parameter variance		
Within school	10.014	7.336
Between schools	.667	.333
HLM reliability estimate	.845	.797
Proportion of variance between schools	.062***	.043***

*** $p \leq .001$.

Table 3 shows the results of the multivariate analyses. Ethnic school diversity has a significantly negative association with the number of friendships ($\gamma = -1.166$; $p < .01$; see model 1). The standardized coefficient shows this association to be rather small ($\gamma^* = -.080$). This means that students in more ethnically diverse school contexts nominated a significantly lower number of friends than their counterparts in more ethnically homogeneous school contexts. Model 2, however, shows that this is due to other characteristics, as this association disappears ($\gamma = .576$; $\gamma^* = .040$; $p = .293$), when taking into account the control variables at the individual and the school level. Further analyses (not shown) indicate that this is due to the schools' socioeconomic situation. The mean parental occupational status at school in itself holds a significantly positive relation to number of friendships ($\gamma = .232$; $\gamma^* = .087$; $p < .05$). This means that students enrolled in a school with a more disadvantaged socioeconomic situation have a higher likelihood of having fewer friends, irrespective of the socioeconomic position of their own family. As such, the respondents' number of friendships is affected by the schools' socioeconomic situation, rather than by the ethnic school diversity. In the third model, we test whether the relation between ethnic school diversity and the number of friendships differs between natives and immigrants. The cross-level interaction term is only borderline significant ($\gamma = 1.079$; $p = .069$), but it suggests a difference between natives and immigrants. While, for natives, ethnic school diversity has no association with the number of friendships ($\gamma = .337$; $p > .05$), there appears to be a positive association between ethnic school diversity and the number of friendships for immigrants ($\gamma = .337 + 1.079 = 1.416$; $p = .069$). It is noteworthy that this association stands when taking into account the schools' socioeconomic situation.

Furthermore, the results show that ethnic diversity is significantly negatively related to attachment to friends ($\gamma = -1.337$; $\gamma^* = -.110$; $p < .001$; see model 1). However, model 2 shows that this association vanishes when we take the control variables into account ($\gamma = .444$; $\gamma^* = .040$; $p = .107$). Again, the schools' parental occupational status composition proves responsible for this. This variable in itself has a significantly positive relation to attachment to friends ($\gamma = .281$; $\gamma^* = .130$; $p < .001$). Again, the schools' socioeconomic situation has an impact on the quality of students' friendships, irrespective of the students' own socioeconomic situation. This indicates that the schools'

TABLE 3. The Association between Ethnic School Diversity, and Number of Friendships and Attachment to Friends, Results of Multilevel Analyses

	Number of friendships		Attachment to friends	
	γ	SE	γ	SE
Intercept	6.432***	.093	15.639***	.064
	7.911***	.327	7.879***	.325
School level				
Ethnic diversity				
γ	-.1166**	.576	.337	.444
SE	.422	.543	.273	.284
Occupational status composition				
γ	.232*	.101	.246*	.281***
SE	.109	.009	.100	.044
School sector				
γ	.022	.156	.022	-.149
SE	.155		.092	.091
Student level				
Ethnicity				
γ	-.093	.142	-.190	-.281*
SE	.148	.444***	.115	.119
Gender				
γ	-.438***	.091	.453***	.063
SE	.037*	.017	.023	.023
Occupational status				
γ	.037*	.017	.038*	.018
SE	.187**	.063	.032	-.022
Grade				
γ	-.187**	.150	-.357**	.108
SE	.336*		.108	1.284*
Vocational track				
γ	.150	.587	.108	.490
SE				
Ethnicity \times ethnic diversity				
γ	1.079 ^o		1.025***	1.001***
SE	.587		.205	.162
Variance components				
Intercept	.605***	5.110***	.253***	.067*
U_0				.007*
Ethnicity				.025***
U_1				.281
Gender				
U_2				
Occupational status				
U_3				
Grade				
U_4				
Vocational track				
U_5				

* $p \leq .05$, ** $p \leq .01$, *** $p \leq .001$, ^o $p \leq .10$.
 Note: Unstandardized coefficients (γ) are presented, with the robust standard errors (SE) and the variance components (U).

socioeconomic composition, rather than its ethnic diversity, is responsible for the decline of attachment to friends in ethnically diverse schools. The cross-level interaction term in model 3 again shows a difference between native and immigrant students. For natives, no effect of ethnic school diversity is seen ($\gamma = .243$; $p = .395$) once the other features are taken into account. However, for immigrant students, all else being equal, the ethnic school diversity has a positive association with attachment to friends ($\gamma = .243 + 1.284 = 1.527$; $p < .05$). It is noteworthy that this association is established while controlling for the schools' socioeconomic situation. We conclude that, for immigrants, higher ethnic school diversity in itself yields a higher quantity and quality of friendships.

Although not the primary concern of this study, we should point out that some individual-level variables have effects on the outcomes. Boys, students in the fifth grade, and students in the vocational track denote a lower quantity of friends. Furthermore, immigrants, girls, and students attending the vocational track feel least attached to their friends.

DISCUSSION

Western societies are rapidly evolving into multiethnic environments. This has raised the interest of researchers in the possible consequences of increased ethnic diversity. Recently, Putnam (2007) formulated constrict theory, in which he states that individuals who are confronted with a high level of ethnic diversity in a context withdraw from their social relations and "hunker down." Research in the neighborhood context seemed to support this line of thinking (Letki 2008; Stolle et al. 2008; Tolsma et al. 2009; Lancee and Dronkers 2011). However, the theory remains to be tested in a multitude of other contexts. This article provides a first analysis of the validity of constrict theory in a school context. We test whether ethnic school diversity lowers the quantity and quality of friendships between students. Furthermore, we investigate whether the socioeconomic context of the schools, rather than the ethnic diversity, is responsible for the found effects, and whether the impact of ethnic school diversity is different for natives and immigrants.

The bivariate analyses suggested that students in ethnically diverse schools have fewer friendships and lower attachment to friends. However, further analyses suggested that the effect of ethnic school diversity was actually due to the schools' socioeconomic situation: Flemish schools with a high ethnic diversity tend to be socially disadvantaged, which yields a lower quantity and quality of friendships for students attending these schools. The effect of the schools' socioeconomic situation was established while controlling for individual-level covariates, which means that we were dealing with a compositional effect: Irrespective of the individual situation of students, attending a school with a lower socioeconomic position yields fewer and less supportive friendships. These results correspond to earlier studies, set in the neighborhood context (Letki 2008; Tolsma et al. 2009), which found that socioeconomic disadvantage, rather

than the ethnic diversity of a particular context, reduces the number and quality of interpersonal contacts.

Moreover, supporting our expectations based on segmented assimilation theory (Portes and Zhou 1993; Portes and Rumbaut 2001), we found that natives and immigrants react differently to ethnic diversity at school. All else being equal, while ethnic diversity did not impact natives' friendships, it did affect immigrants' quantity and quality of friendships. Hence, we disagree with Putnam's (2007:154) assertion that there is no evidence that different mechanisms are at work for individuals from different ethnic groups, but we tend to support the conclusions by Lancee and Dronkers (2011) that scholars must distinguish different ethnic groups. As according to segmented assimilation theory ethnically homogeneous contexts provide support for immigrants in the host society, we expected that ethnic school diversity would especially reduce immigrants' quantity and quality of friendships. In the current study, to the contrary, immigrants reported a higher number of friendships and felt most attached to their friends in ethnically diverse schools. However, our findings may still be interpreted in line with the segmented assimilation theory. Most ethnic concentration schools in Flanders are also ethnically diverse ones (see previous discussion)—in other words, most ethnically diverse schools enroll few native students (see also Demanet et al. 2011). In Flanders, most immigrant groups have fewer positive prospects: They are more likely to be unemployed, to be involved in temporary work, or to be employed in poorly esteemed sectors (Vertommen and Martens 2005). Hence, from the segmented assimilation perspective, it may be expected that immigrant students from different ethnicities (e.g., Turks and Moroccans) provide each other with social resources across ethnic boundaries. In that case, the presence of fellow immigrants in ethnically diverse schools would provide immigrant students with social resources, counteracting the mechanisms as proposed by constrict theory.

The results of this study have implications for educational policy. As in the United Kingdom and the United States (e.g., Goldsmith 2004; Johnston, Wilson, and Burgess 2004), Flemish policymakers usually strive for a dispersal of ethnically diverse students across all schools to counter ethnic segregation. This choice is sustained by studies that point to the various positive consequences of putting students from different ethnicities together in one school (e.g., Bankston and Caldas 1996; Rumberger and Palardy 2005). If constrict theory were applicable to schools, then, at least in the short run, this would not seem to be a good idea. If students indeed were to "hunker down" in such desegregated schools, this would block the development of their social capital, eventually hindering their academic achievement (Bankston 2004) and their chances for upward social mobility (Furstenberg and Hughes 1995). Our study, however, shows that there is no need for concern. Ethnic diversity in itself has no impact on the social capital natives develop at school, and even favors the development of social capital at school for immigrant students. This positive image of diverse schools for ethnic minority groups is consistent with recent results from the United States (see, for instance, Frankenberg and Orfield 2007; Wells 2009). A central insight of this work has been that while ethnic diversity at school may benefit everyone, it is particularly beneficial for

disadvantaged minorities. Furthermore, studies investigating the accuracy of the contact theory in schools (e.g., Joyner and Kao 2000; Quillian and Campbell 2003; Van Houtte and Stevens 2009) envisage mostly positive outcomes for students' relations at school, thereby supporting the supposed function of schools to integrate students from different ethnicities (Putnam 2007; Stearns 2010).

This article provided the first effort to test constrict theory in a school context. Hence, we propose that subsequent research tests the theory in other educational systems than the Flemish one, as it is possible that the Flemish educational system has some distinct characteristics that cause constrict theory to be inapplicable. For instance, as discussed above, the Flemish educational system is characterized by free school choice. This means that the assignment of students to schools is not regulated (e.g., by place of residence), and parents are allowed to choose or avoid schools with certain characteristics. In Flanders, this causes the phenomenon of "white flight" when it applies to native, middle-class parents, and "black flight" when concerning higher-educated and economically better-situated immigrant parents (Mahieu 2002). Recently, it is demonstrated that Flanders is confronted with one of the highest rates of school segregation in Europe (Jacobs et al. 2009). Hence, a certain portion of the native students that do attend ethnically mixed schools can be expected to have open-minded parents about ethnic differences, which can counter the mechanisms as proposed by constrict theory. More plausible, however, is that, even in a free school choice system as the Flemish one, native children in ethnically diverse school do not have a choice. These students are mostly working class (see also Mahieu 2002), and therefore less likely to move to another, more highly valued school, which is often located at a greater distance from their home. Our results show that these children are at risk of having a lower social capital, at least in regard to the quantity of their friendships, just because of their lower socioeconomic position. In countries lacking an equally open quasi-market educational system, such as the United States and the United Kingdom, self-selection of students is even less likely—for nonworking-class children as well. Hence, in such educational systems, research should test whether this more restricted school choice can lead students who have not chosen to be in an ethnically mixed school environment to "hunker down." Second, future studies investigating constrict theory in a school context should pinpoint other outcomes besides those we have chosen in this study. Putnam (2007) provides a whole list of expected outcomes of ethnic diversity in a given context. While we have chosen some important indicators of students' social relations at school, we can envisage that constrict theory may be applicable to some other outcomes, for instance, some indicators of social withdrawal. Moreover, a limitation of constrict theory is that it does not provide a clear explanation *why* diversity is expected to affect all groups negatively. We have sought to explain the mechanisms—at least for the immigrants—by segmented assimilation theory (Portes and Zhou 1993; Portes and Rumbaut 2001), but it is clear that more theoretical work needs to be done to explain *why* constrict theory is not equally applicable to all contexts where contact between individuals from different ethnic backgrounds takes place.

Concluding, then, we can summarize that constrict theory does not seem applicable to a school context—at least not in Flemish secondary education. Students in ethnically diverse schools seemed to have fewer and less cohesive friendship bonds, but this was due to the lower socioeconomic composition of ethnically diverse schools. Hence, we endorse studies by Tolsma et al. (2009) and Letki (2008), and we conclude that the socioeconomic situation of contexts, rather than the ethnic diversity, can diminish social solidarity and cohesion. Moreover, countering constrict theory, we found that immigrants in ethnically diverse schools tend to have a higher quantity and quality of friendships. As such, we find no evidence that eventual “constrict” behavior on the part of the students would hinder the role of multiethnic schools in integrating students from different ethnic groups.

NOTES

¹We ran several tests to ensure that multicollinearity is not responsible for the results of our analyses. A first measure we took was centering the variables of ethnic heterogeneity and SES composition around their respective means in the analyses, which is known to be effective in reducing multicollinearity in regression models. Second, we tested the same models while introducing interaction terms between the two variables, which is also known to reduce multicollinearity. These analyses produced the same basic results as the ones reported in Table 3.

²While controlling for the variables at the individual level, school size had a modest effect on friendships ($\gamma^* = .078$; $p < .01$) and on attachment to friends ($\gamma^* = .035$; $p < .01$). However, including this control variable did not affect any of the other associations in the models. As such, the coefficients shown in the tables are based on the entire sample.

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