Friendship networks and interethnic union formation: An analysis of immigrant children

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Abstract

This article examines the effect of composition of friendship networks during early adolescence on the likelihood of entering an interethnic union among the children of immigrants. We analyze the panel data from the Children of Immigrants Longitudinal Study that followed 14-year-olds into their early 20s. We extend previous research by simultaneously examining the effect of the social context and personal networks and by broadening the type of unions under consideration (i.e., dating and cohabiting unions in addition to marriage). In line with hypotheses regarding opportunities and preferences, we found, first, that having an ethnically diverse friendship network positively affects the likelihood of entering an interethnic union. Second, the effect of the friendship network is equally strong for dating, cohabitation, and marriage. Finally, the effect of the social context on interethnic partner choice is not mediated by the friendship network.

Interethnic relationships indicate the erosion of social barriers between ethnic groups and have been related to a reduction in social distance and positive out-group emotions (Binder et al., 2009; Pettigrew & Tropp, 2006). Not surprisingly, many scholars have studied

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the prevalence of different types of relations between ethnic groups, such as friendship (Fong & Isajiw, 2000, p. 23; Moody, 2001; Powers & Ellison, 1995; Quillian & Campbell, 2003) and marriage (Joyner & Kao, 2005; Kalmijn & Van Tubergen, 2006; King & Bratter, 2007; Qian & Lichter, 2007; Rosenfeld & Kim, 2005; Van Tubergen & Maas, 2007). However, only few studies have related these two types of relationships (Clark-Ibánez & Felmlee, 2004; Levin, Taylor, & Caudle, 2007), although there are several arguments to expect that friendship networks affect the formation of interethnic unions. In this study, we develop and test the hypothesis that having an ethnically heterogeneous network of friends during early adolescence will positively affect the likelihood of entering an interethnic union later in life. This hypothesis will be tested using longitudinal data on the early adult life courses of immigrant children.

From a sociological point of view, the study of intergroup relations is relevant because it is a measure of social integration (Gordon, 1964; Lieberson & Waters, 1988). Romantic relationships are one of the most intimate relations and because such relationships imply a long-term commitment, interethnic unions in particular have been considered a classic indicator of integration (Gordon, 1964). By studying the effect of the friendship network on partner choice, we contribute to current knowledge about how social integration may progress from less intimate relations, such as friendship, to more intimate relations, such as partnership.

The importance of friends for romantic development has also been pointed out by developmental psychologists (Connolly & Goldberg, 1999). A well-known finding is that the emergence of romantic relations in adolescence is preceded by an increase in other-sex friendship networks (Connolly, Furman, & Konarski, 2000). In this study, we also address the influence of friends, but we shift the focus from the emergence of romantic relationships to the question of who is chosen. The study of interethnic friendship networks and interethnic partner choice is particularly interesting in this regard. If having an interethnic friendship network increases the likelihood of choosing an interethnic partner, this would indicate that prior intergroup contact translates into later intergroup contact, thereby enabling the persistence of the effects of intergroup contact, such as a reduction in intergroup anxiety (Levin et al., 2007) and prejudice (Pettigrew & Tropp, 2006). In addition, it has been suggested that relationship quality is lower in interethnic unions and that dissolution risks are higher (Sprecher & Felmlee, 1992). An explanation for these negative associations is a lack of support from third parties, such as friends (Bratter & Eschbach, 2006). Hence, even if friends are unable to affect the choice of a partner, they may still affect romantic relationships by influencing the duration and development of the union.

Clark-Ibánez and Felmlee (2004) and Levin et al. (2007) have conducted the only studies that we are aware of to examine the effect of the ethnic composition of friendship networks on interethnic romantic relationships. Both these studies rely on student samples. The cross-sectional analyses of Clark-Ibánez and Felmlee (2004) showed that the more ethnically diverse the composition of the friendship network, the more likely is the students that were or had been involved in an interethnic romantic relationship at least once. The authors pointed to several factors that could explain this result. In addition to the arguments of increased opportunity and the weaker norm of endogamy, they pointed to the role of information provided by the network. Individuals gather

information about potential partners in order to reduce uncertainty, and interethnic networks are assumed to provide more positive information about a potential interethnic partner than homogeneous networks do. Levin et al. (2007) improved upon this cross-sectional study by replicating these results using panel data. Their findings provided support for the argument that interethnic friendship networks are a cause of involvement in an interethnic union.

By exploring to what extent the formation of interethnic unions is affected by having an interethnic friendship network during early adolescence, this study extends prior research in three ways. First, we focus on personal networks instead of the broader social contexts these networks are selected from, such as neighborhoods, schools, or voluntary associations (Feld, 1981; Kalmijn & Flap, 2001; Lievens, 1998). Prior studies have mainly focused on the effect of these social contexts on partner choice (Emerson, Kimbro, & Yancey, 2002; Hwang, Saenz, & Aguirre, 1997; Lievens, 1998), but it is plausible that the friendship network plays a mediating role in this process. We will test whether the effect of the social context on the formation of interethnic unions will diminish or even disappear once we control for the effect of the friendship network.

Second, our analysis focuses on a range of romantic relationships and not just on marriage. More specifically, we examine dating unions, cohabiting unions, and marriages. In order to gain more insight into the formation and development of intergroup unions, it is essential to broaden our focus beyond marriage, because the increase in interracial unions in recent years concerns especially younger cohorts who are currently dating or cohabiting (Joyner & Kao, 2005). Moreover, patterns of partner choice differ between daters, cohabiters, and married individuals. Homogamy on the basis of ascribed characteristics increases as couples progress along the relationship continuum, that is, from dating to cohabitation and to marriage (Blackwell & Lichter, 2000, 2004; Schoen & Weinick, 1993). In addition to compare the prevalence of exogamy among daters, cohabiters, and married couples, we will extend this line of research by examining whether differences in exogamy rates may be explained by the influence of friends.

Third, we attempt to improve upon prior studies methodologically using panel data. The association between having interethnic friends and being involved in an interethnic union that has been found with cross-sectional data does not clarify the mechanism that causes this association (Clark-Ibánez & Felmlee, 2004). One explanation is that interethnic friendship networks positively affect the formation of interethnic unions, because they provide opportunities for meeting out-group members and offer positive normative support for involvement in an interethnic union. Another explanation is that the effect runs in the opposite direction: individuals who are involved in an interethnic union meet out-group members via their partner. Over time, these out-group members may become part of the friendship network. Both causal pathways may contribute to the association between interethnic friendship networks and interethnic unions (Martinovic, Van Tubergen, & Maas, 2009). If this is true, the estimates that are found with cross-sectional data are biased due to reversed causality. In this article, we will use the panel data of the Children of Immigrants Longitudinal Study (CILS) (Portes & Rumbaut, 2005), which allows us to estimate the effect of interethnic friendship networks on the likelihood of interethnic union formation in a longitudinal fashion. This dataset also enables us to test whether the effect of the
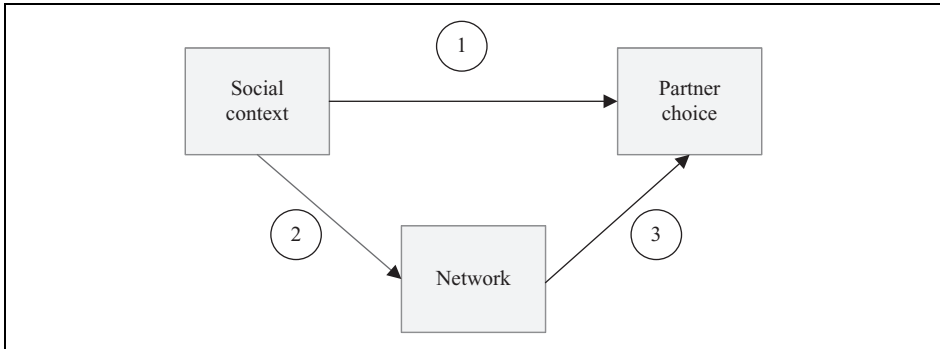
Figure 1. Social context and network effects on partner choice.

friendship network that has been found in previous research extends to a nonstudent sample (Clark-Ibánez & Felmlee, 2004; Levin et al., 2007).

Explanations of partner choice

The sociological literature on intermarriage has pointed to two factors that influence the choice of a spouse, that is, opportunities of the marriage market in which candidates search for a spouse and preferences for certain personal characteristics in a partner (Kalmijn, 1998). In this section, we will set forth the arguments about opportunities and preferences and employ them to arrive at our first hypothesis, which states that *having an ethnically heterogeneous network of friends during early adolescence positively affects the likelihood of entering an interethnic union later in life (Hypothesis 1).*

Opportunities

First, there is the argument of opportunities. Opportunities for contact are relevant, because the choice of a partner is conditional upon the pool of potential partners an individual can choose from (Blau, 1977; Kalmijn & Flap, 2001). Thus, opportunities for social contact determine social associations (Blau, 1977). This claim, which takes a supply-side perspective on personal relationships, has been confirmed on the macrolevel showing that, for example, relative group size and geographic distribution affect endogamy rates and the composition of personal networks (Lieberson & Waters, 1988; Marsden, 1990; Wong, 1989). Other studies applied the supply-side perspective to examine the effect of the social context (i.e., settings such as schools, work places, outgoing areas, and neighborhoods) on personal relationships. We will briefly review this literature using Figure 1 as a starting point.

The first line of research is indicated by arrow 1 in Figure 1 and examines the impact of the social context on partner choice. Kalmijn and Flap (2001) confirmed that the social context promotes endogamy with respect to characteristics that were – implicitly or explicitly – the basis of organizing that specific setting. For instance, results showed that couples who went to the same school were more likely to be homogamous with respect to educational level compared to couples who did not share this setting, and couples who

shared a workplace were more homogamous in class destinations than couples who worked for different firms. Thus, assortative mating is determined by assortative meeting. Mollenhorst, Völker, and Flap (2008b) replicated the finding that the social context affects similarity in partnerships. Social contexts that are mixed affect similarity in partner choice negatively. Attending a racially mixed school and living in a racially mixed neighborhood, for example, increase the likelihood of being interracially married (Emerson et al., 2002).

The second line of research examines the impact of the social context on personal networks, such as the friendship network (indicated by arrow 2 in Figure 1). The composition of personal networks reflects the composition of the social context where individuals first got to know each other with regard to age, education, and sex (Mollenhorst, Völker, & Flap, 2008a). Hence, meeting in homogeneous social contexts results in similarity in friendships (Mollenhorst et al., 2008b). By contrast, heterogeneous social contexts affect similarity in friendship negatively, which is demonstrated by the finding that interracial friendships are more likely when attending racially mixed schools (Moody, 2001; Quillian & Campbell, 2003). In addition, in social contexts where heterogeneity is promoted, for instance, by deliberately mixing racial groups within academic tracks and in extracurricular activities, the likelihood of interracial friendships increases (Moody, 2001). In sum, both lines of research confirm the claim that opportunities for contact at the microlevel affect social relationships.

A third possible pathway is the impact of the personal network on partner choice (arrow 3). There are several reasons why an ethnically heterogeneous friendship network may affect opportunities for meeting partners of a different ethnic origin. First, friends themselves may be potential partners. However, because friendship networks contain few opposite-sex members (Feiring, 1999; Kalmijn, 2002), this effect is probably not large. Second, and more importantly, the partner may be met via the friendship network (Mollenhorst et al., 2008b). Friends may introduce ego to individuals outside the friendship network of ego. Some of the social ties of ego's friends are likely to be homogamous with respect to ethnicity, for example, ties with family members or ties with neighbors. Hence, friends of a different ethnic groups may act as a bridge to other group members of the friends' ethnic group, and thereby, this friend offers opportunities for contact with potential interethnic partners that ego would otherwise not have had (Belotti, 2008; Parks, 2007).

If there is an effect of the personal network on partner choice, this could imply that the effect of the social context on partner choice that has been found previously is in fact mediated by the personal network. This is represented by the indirect effect of the social context via arrows 2 and 3 in Figure 1. In other words, we argue for a mediating role of the personal network in the process of union formation. The process of partner choice may be considered a filter process. People spend their time in certain social contexts. Within these social contexts, individuals form social ties with others who are participating in the same activities (Feld, 1981; Mollenhorst et al., 2008a). Thus, social ties are formed only with a select group of individuals from the social context. The composition of this personal network may be different from the composition of the social context it was selected from. Yet, this network generates an important pool of potential partners. Previous studies have shown that the partners are often chosen from within or via an

individuals' personal network (Connolly et al., 2000; Mollenhorst et al., 2008b). We thus expect that *the effect of the social context on the formation of interethnic unions will diminish or disappear once we control for the effect of the friendship network (Hypothesis 2)*.

Preferences

The effect of the friendship network on partner choice can also be explained in terms of preferences. In general, individuals tend to favor an in-group partner over an out-group partner, because individuals are likely to experience social distance toward out-group members (Bonam & Shih, 2009). Social distance is determined by in-group identification and prejudice against the out-group. We assume that both in-group identification and prejudice are smaller for individuals who have an interethnic friendship network (Phinney, 1989). The development of a strong identification with one's own ethnic group is reduced when having an interethnic friendship network, because individuals experience that their friends are similar in characteristics other than ethnicity. In addition, personal contact between groups fosters positive attitudes toward the out-group and reduces intergroup prejudice (Allport, 1954; Pettigrew & Tropp, 2006; Tropp & Pettigrew, 2005). Interethnic contact with friends during adolescence is especially likely to influence attitudes, because friendships are characterized by frequent and positive interaction (Pettigrew, 1998). Moreover, the positive effects of intergroup contact generalize beyond individuals with whom one has direct contact (Pettigrew & Tropp, 2006). By reducing prejudice against the out-group, an interethnic friendship network thus decreases the social distance between an individual and an out-group member. As a result, out-group members may be more likely to be considered as potential partners.

Preferences for endogamy are also held by third parties, such as friends and family (Huijnk & Liefbroer, 2012). In-group partner choice assures that group values, norms, and traditions are maintained. Third parties attempt to prevent exogamy by normative pressure and by sanctioning individuals who enter an interethnic union (Kalmijn, 1998; Kreager, 2006). Because adolescents have a strong need for belonging (Baumeister & Leary, 1995), they are particularly sensitive to normative pressure from their friends and the sanctions their friends may use when not confirming to these norms. However, within interethnic friendship networks, the norm of endogamy is less likely to prevail (Clark-Ibánez & Felmlee, 2004). Sanctioning of an out-group partner choice is therefore less likely. At the same time, interethnic friendship networks are more likely to provide support for the relationship, which is important for the quality and development of this union (Parks, 2007).

Disentangling opportunities and preferences

We have argued that the effect of having an interethnic friendship network on the likelihood of entering an interethnic union may be the result of both opportunities and preferences. If we find an effect of interethnic friendship networks, there is no guarantee that both of them affect the formation of interethnic unions. By looking at the interaction between having an interethnic network and union type, we are able to test the mechanism

of third party influence on the development of interethnic unions. The decision to make the transition from dating to cohabitation and to marriage may well be influenced by friends (Joyner & Kao, 2005; Parks, 2007), and this influence may become stronger as one progresses from one stage to the next, because opposition to interethnic group relations increases for more intimate relations (Bonam & Shih, 2009). Ethnic group members may fear that interethnic unions are disruptive of the social cohesion in the group and that interethnic couples fail to pass on their customs and traditions to the next generation (Kalmijn, 1998). These negative consequences become more severe and more likely in cohabiting unions and marriage, in which the chances are lower that the union is temporary and the chances are higher that children will be born from the union (Smock & Greenland, 2010). As a result, third parties preferring endogamy most strongly oppose an interethnic partner in marriage and increase pressures on the individual to conform to the norm of endogamy when entering marriage. Consequently, interethnic unions may be less likely to progress to marriage than intraethnic unions are. We do not expect these differences in the development of individuals who have an interethnic friendship network, because such networks support intraethnic as well as interethnic unions. This would mean that the difference in the odds of having an interethnic partner between those who have an interethnic friendship network and those who have an intraethnic friendship network increases from dating to cohabitation and to marriage. In other words, as a result of preferences of third parties, the effect of the friendship network should interact with the union type. The argument about opportunities does not imply such an interaction, because opportunities to meet and mate are in principle not affected by how the union is formalized. To identify whether the process of third party preferences operates, we test the hypothesis that *the effect of the friendship network is weakest for dating union, intermediate for cohabitation, and strongest for marriage (Hypothesis 3)*.

Method

Data

We analyze panel data of the CILS (Portes & Rumbaut, 2005). This panel was designed to provide insights into the adaptation process of second-generation immigrants, who are defined as "native-born children of foreign parents or foreign-born children who were brought to the United States before adolescence" (Portes & Rumbaut, 2001, p. 23). The first wave was conducted in 1992 among eighth and ninth grade second-generation pupils ($n = 5262$) in metropolitan areas in Florida and California with a high proportion of immigrants. At school, pupils filled out a questionnaire if parental consent was given. At that time, the pupils were approximately 14 years old. The second wave was conducted in 1995. Over 80% of the original sample participated again ($n = 4288$). Most respondents were interviewed at school. Those who were no longer at school or had moved were visited by a member of the survey team who asked the student to fill out the questionnaire, or they received a paper-and-pencil questionnaire by mail and were asked to sent back the questionnaire in an addressed, stamped envelope. A few respondents were interviewed by telephone. In addition, a randomly drawn probability sample representing 50% of the parents of the pupils' follow-up sample was approached for

telephone interviews, of which 925 were completed successfully (41%). The third and last wave, conducted between 2002 and 2003, aimed at approaching all original respondents. Respondents were approximately 24 years old at that time. The majority (over 90%) still resided in the same state and almost half still lived with their parents. The CILS data enable us to analyze the life course of the second-generation from age 14 to 24 years and gain more insight into the formation of interethnic unions among this group.

In total, 3613 respondents (69% of original sample) participated in the third wave, most of them by filling in a self-completion questionnaire. Our analyses focus on respondents who are involved in a union. Of the respondents who participated in the third wave, 45% had a partner at the time of the interview ($n = 1829$).

Analytic strategy

We estimate logistic regression models to test our hypotheses. In a separate analysis, we first perform multinomial logistic regression analysis to explicitly estimate the effect of the social context on the friendship network (arrow 2 in Figure 1). Second, we turn to testing explanations of interethnic partner choice using logistic regression analysis. The first model includes control variables only. In the second model, we examine the effect of the social context. In the third model, the effect of the friendship network is added. By comparing the second and third model, we can see whether the friendship network mediates the effect of the social context. Once we have established the effect of the friendship network, we will test in a fourth model whether this effect is different for different types of unions. Due to the list-wise deletion of variables in the logistic regression models, our analytical sample consists of 1406 respondents.

Measurement

In this study, we use a broad operational definition of ethnicity and distinguish four racial/ethnic groups: non-Hispanic Whites, Blacks, Asians, and Hispanics.[1] In wave 3, respondents were asked "Which of the following race categories listed do you consider yourself to be?" Answer categories were "White," "Black," "Asian," "Multiracial," and "Other (please specify)". In addition, respondents were asked "How do you identify; that is, what do you call yourself? (Examples: Hispanic, Latino, [list of other ethnic and national origin groups,] etc.)." This was an open question. We used both questions to construct the variable ethnicity. In a first step, respondents were classified according to their self-identified race. All respondents who identified themselves as being multiracial were omitted from analysis. For this group, it is unclear when a union should be considered interethnic. In a second step, all respondents who reported being White on the race question *and* identified as being Hispanic/Latin in the second question were classified as Hispanic. Respondents were also asked to list the race and the identity of their partner in similar questions. Ethnicity of the partner could therefore be constructed in the same way and classified partners as non-Hispanic White, Black, Asian, or Hispanic.

We look at three social contexts: the school, the neighborhood, and the parents' network. We include school composition and heterogeneity to measure the effect of the

school context. The information for these measures was provided by the school in wave 1. School composition indicates the percentage of pupils in the school of a different ethnic group than the respondent. School heterogeneity accounts for the number of different ethnic groups and their proportion in the pupil population. This variable is measured by a complement of the Herfindahl index (Herfindahl, 1950). The index of heterogeneity equals to $1 - \sum_k \left(\frac{n_k}{N}\right)^2$, where $\sum_k \left(\frac{n_k}{N}\right)^2$ is the sum of the squared shares of the four ethnic groups in the pupil population. The index indicates the probability that two randomly selected individuals are from different ethnicities (Moody, 2001). The correlation between school composition and school heterogeneity is high ($r = .79$), so we also run our models with and without heterogeneity to check the results. The full correlation matrix is available from the author. Inspection of several multicollinearity diagnostics (i.e., variance inflation factor, tolerance, and determinant of the correlation matrix) indicated no reason for concern about multicollinearity. We will include the determinant of the correlation matrix when displaying the results of our analyses.

Neighborhood composition is a dummy variable based on the information provided by the parents during wave 2. Parents were asked to indicate to which group the people in their neighborhood belong mostly. The following answer categories were listed: "other persons born in my own country of birth," "other foreign-born persons," "White Americans," "Black Americans," "Hispanic-Americans," "Asian-Americans", and "other, please specify". Parents who checked "other foreign-born persons" or checked an ethnicity box other than their own ethnicity were classified as living in a mixed neighborhood. All other parents, and parents for whom data were missing, were considered to be living in a homogeneous neighborhood.

We also include the family context by measuring the composition of the parents' network. Parents' network composition was measured in a similar manner as the composition of the neighborhood. Parents' were asked with whom they "mainly socialized." We are aware that the absence of a continuous measure in the questionnaire limits our opportunities to gauge the effect of the composition of the social context.

Measurement of the friendship network is based on the composition of respondents' friendship network in school at the age of around 14 years at the time of wave 1. In a first question, respondents were asked how many of their close friends in school had parents who were born abroad. Answer categories were "none", "some", and "many/most". Only respondents who had some or many immigrant friends, and thus an immigrant friendship network, had to answer a subsequent question about the main countries in which those parents were born. Respondents could fill in as few or as many countries as applicable (the maximum of countries mentioned was nine). Based on the national origin of the friends' parents, assumptions could be made about the most likely ethnicity of the friends, that is, non-Hispanic White, Black, Asian, or Hispanic. In our analysis, we will compare three groups. The first group has a nonimmigrant friendship network, which may be ethnically homogeneous or mixed. The second group (the reference category) has a same-ethnic immigrant friendship network, which is homogeneous with respect to ethnicity. The third group has an interethnic immigrant friendship network.

We distinguish three types of unions, that is, marriage, cohabitation, and dating. Respondents were not explicitly asked whether they had a partner but provided

information on their current marital status by indicating whether they were married, engaged, cohabiting, single, divorced, or separated. In addition to the married individuals, we classified engaged individuals as married because their engagement indicates the formal announcement of marriage to friends and family and intention to marry. Respondents who were cohabiting were classified as such. We identified respondents who were dating by inferring dating status from their answers on questions about the race and identity of their partner. These questions explicitly stated that respondents without a partner should skip these questions. Respondents who classified their marital status as single, divorced, separated, or other but did provide information on the race and identity of their partner were classified as dating. We realize that some of the respondents who were single, divorced, or separated *and* who had a partner but refused to answer the questions on the race of the partner may erroneously have been classified as not dating.

Our dependent variable indicates that the respondent had an interethnic partner. A respondent is involved in an interethnic union if the ethnicity of the respondent is different from the ethnicity of his/her partner.

We included some variables that may affect both our independent and dependent variable and are thereby able to control for spurious relationships. In addition to sex and age, we include religiosity to control for the lower likelihood of cohabitation and out-group partner choice that has been reported for religious individuals (Arland, Axinn, & Hill, 1992; Kalmijn, 1998). Religiosity was measured in wave 3 by asking how often the respondent attended religious services (answer categories ranged from $1 = never$ to $8 = several\ times\ a\ week$). We also include the highest level of education completed at the time of wave 3. Educational effects on the likelihood of interethnic union formation, both positive and negative, have been found for specific groups (Gullickson, 2006; Qian, 1999; Sung, 1990; Wong, 1989). We distinguish four levels, that is, some high school, high school completed, some college, and 3 or more years of college. We also control for differences in endogamy rates between ethnic groups (Qian & Lichter, 2007). Finally, some respondents identified with a single ethnic group, even though the ethnicity of their father differed from the ethnicity of their mother ($n = 190$). We included these respondents in our analyses while controlling for mixed ethnic origin, because mixed ethnic origin may have affected their own ethnic identification and, thereby, whether the friendship network and the partner choice are considered interethnic or not.

Results

Descriptive results

Table 1 reports the descriptive statistics of the analytical sample and shows that marriage and dating are common union types, whereas only 9% of the respondents cohabit with a partner without being married. Overall, about a quarter of these unions is interethnic indicating that in general exogamy is less likely than endogamy. At the same time, analyses do reveal that the prevalence of interethnic unions differs between union types. Marriages are least often interethnic (17%), dating unions are somewhat more often interethnic (24%), and cohabitation is most often interethnic (31%). These results are partly in line with the expectation that interethnic unions become less likely as

Table 1. Descriptive characteristics.

Measure	N	Mean/proportion	SD	Min	Max
Interethnic union	1464	.22		0	1
Friendship network					
Nonimmigrant network	1787	.04		0	1
Immigrant network: homogeneous	1564	.57		0	1
Immigrant network: interethnic	1564	.40		0	1
Social context					
School composition: pupils of other ethnicity	1602	.48	.29	.02	.75
School heterogeneity	1829	.49	.22	.01	1.00
Neighborhood composition: mixed	1829	.27		0	1
Parents' network composition: mixed	1829	.09		0	1
Union type					
Married	1829	.44		0	1
Cohabiting	1829	.10		0	1
Dating	1829	.46		0	1
Female	1829	.61		0	1
Age	1827	23.84	.77	22	26
Religiosity	1797	3.78	2.00	1	8
Educational achievement					
Less than high school	1829	.06		0	1
High school	1829	.19		0	1
Some college (<3 years)	1829	.35		0	1
College or higher	1829	.40		0	1
Ethnicity					
White	1602	.04		0	1
Black	1602	.07		0	1
Asian	1602	.32		0	1
Hispanic	1602	.57		0	1
Mixed ethnic origin	1829	.18		0	1

List-wise N = 1406.

individuals progress along the relationship continuum. What is unexpected is that cohabiting unions are more often interethnic than dating unions. We will address this finding in the conclusion, after inspecting the multivariate results.

The results also show that almost all immigrant children had at least some friends whose parents were not born in the United States (i.e., very few have a purely non-immigrant network). About 40% of the respondents had an *interethnic* immigrant friendship network and 57% had a homogeneous friendship network. Interethnic friendship networks mostly consisted of group members of one other ethnic group (75%), whereas only few networks consisted of two or three other ethnic groups (25%).

The ethnic composition of the schools that respondents attended varied substantially. Most Whites (60%) and all Asians attended schools in which their ethnic group constituted less than half of the pupil population. By contrast, the majority of Hispanic respondents (63%) attended schools in which Hispanics constituted at least half of the pupil population. Blacks were evenly divided over schools in which they constituted either more than half or less than half of the pupil population. These differences have

Table 2. Multinomial logistic regression model predicting friendship network composition.

Measure	Nonimmigrant network[a]		Interethnic immigrant network[a]	
	b	SE	b	SE
Female	.041	.311	.056	.121
Age	.054	.187	-0.027	.076
Religiosity	.009	.074	-0.047	.030
Educational achievement				
Less than high school	.733	.545	-0.305	.579
High school	.524	.399	-0.255	.543
Some college (<3 years)	.194	.375	.112	.536
College or higher	ref.		ref.	
Ethnicity				
White	ref.		ref.	
Black	-0.960	.770	-2.212*	.177
Asian	-3.232*	.762	-3.240*	.543
Hispanic	-2.673*	.718	-2.712*	.536
Mixed ethnic origin	0.666*	.347	.091	.177
School composition: proportion pupils of other ethnicity	2.952*	.821	2.321*	.438
School heterogeneity	.262	1.198	-2.527*	.592
Neighborhood composition: mixed	-0.482	.384	-0.129	.144
Parents' network composition: mixed	-0.966	.772	-0.181	.223
Constant	-3.406	4.533	3.366*	1.907

Note. $N = 1406$.
[a]Reference category is homogeneous immigrant network.
*$p < 0.05$ (one-tailed tests).

consequences for the opportunities that were provided by the school context to interact with other ethnic groups.

Besides the school context, we also looked at the neighborhood context and the parents' network. There are large ethnic differences in the type of neighborhood respondents lived in. Only 12% of Whites and 17% of Blacks lived in a mixed neighborhood. Hispanics were somewhat more likely to live in a mixed neighborhood. One out of four Hispanics did so. Asians most often lived in a mixed neighborhood (43%). The parents' network was not likely to be mixed. Only one in 10 respondents had parents who had a mixed network. We found no differences between ethnic groups in this regard.

Multivariate results

Before discussing the results with regard to the effect of the friendship network on interethnic partner choice, we will briefly discuss the association between the social context and the friendship network. Table 2 clearly shows that the school context affects the composition of the friendship network. Immigrant children who attended schools with a larger proportion of other-ethnic pupils are both more likely to have a nonimmigrant network and an interethnic immigrant network compared to having a homogeneous

immigrant network. In addition, school heterogeneity decreases the likelihood of having an interethnic friendship network. The neighborhood and the network of the parents do not seem to affect the composition of the friendship network. For these contexts, the friendship network may not play a mediating role.

We will now turn to the analysis of interethnic partner choice among children of immigrants. Table 3 presents the results of the logistic regression models. Model 1 provides insight into the differential likelihood of exogamy across different ethnic groups. Whites are more likely to have a partner of a different ethnic group than all the other groups. Differences between Blacks, Asians, and Hispanics are relatively small but Asians and Hispanics are more likely to be in an interethnic union than Blacks. In addition, we find that respondents with mixed ethnic parentage are more likely to have an interethnic partner than respondents with same ethnic parentage (exp (.469) = 1.6).

In the second model, we include measures of opportunities for interethnic contact provided by the social context during early adolescence. Do these opportunities affect the likelihood of obtaining an interethnic partner later on in life? The school context does have a clear effect, which is indicated by the significant effects of school composition and school heterogeneity. Attending a school that is also attended by other ethnic groups positively affects the likelihood of being involved in an interethnic union. For example, an increase from 25% to 50% other-ethnic pupils in the pupil population increases the odds of involvement in an interethnic union by 64% (exp (.25 × 1.972)). In addition, results show that heterogeneity has a negative effect. Hence, the more different ethnic groups are present in the pupil population, the lower the likelihood of choosing an interethnic partner. We are aware that school composition and heterogeneity are highly correlated. Estimation of the model with only the effect of the proportion out-group members in the pupil population decreases the effect to $b = .971$ ($p < .000$) but it is still positive and significant. Also, we find an effect of the parental network. Individuals whose parents had a mixed network have 1.6 times higher odds to choose an interethnic partner than individuals whose parents had a homogeneous network (exp (.447)). In contrast to the effects of the school context and parental network, opportunities for intergroup contact provided by the neighborhood do not appear to have an effect on the likelihood of choosing an interethnic partner.

The results in model 3 first provide clear support for the hypothesis that an ethnically mixed friendship network increases the likelihood of becoming involved in an interethnic union. Compared to individuals who had a homogeneous immigrant friendship network during adolescence, individuals who also had friends of a different ethnic group are more likely to have an interethnic partner later in life. To be exact, the odds are 1.6 times higher (exp (.454)). Furthermore, results show that immigrant children who had a nonimmigrant network were as likely to choose an interethnic partner as immigrant children who had a homogeneous immigrant network.

In additional analyses, we distinguish between individuals whose immigrant network only consisted of their own ethnic group, individuals whose immigrant network consisted of one other ethnic group, and individuals whose immigrant network consisted of at least two other ethnic groups. The findings (not reported in the table) show that the effect of the friendship network is larger for those individuals whose network was more diverse. Compared with the odds that an individual with a homogeneous immigrant

Table 3. Logistic regression of having an interethnic union on network and structural variables.

Measure	Model 1 b	SE	Model 2 b	SE	Model 3 b	SE	Model 4 b	SE
Female	.302*	0.141	.268*	.143	.266*	.144	.305*	.145
Age	-.084	.089	-.069	.089	-.064	.09	-.042	.091
Religiosity	-.082*	.034	-.084*	.035	-.080*	.035	-.056	.036
Educational achievement								
Less than high school	-.298	.298	-.376	.307	-.331	.307	-.326	.311
High school	-.480*	.198	-.503*	.202	-.476*	.203	-.396*	.205
Some college (<3 years)	-.259*	.154	-.260*	.157	-.270*	.157	-.221	.160
College or higher	ref.		ref.		ref.		ref.	
Ethnicity								
White	ref.		ref.		ref.		ref.	
Black	-1.862*	.407	-1.708*	.422	-1.589*	.425	-1.684*	.429
Asian	-1.178*	.288	-.800*	.321	-.577*	.329	-.623*	.330
Hispanic	-1.253*	.274	-.818*	.300	-.655*	.304	-.645*	.305
Mixed ethnic origin	.469*	.183	.436*	.185	.437*	.187	.436*	.188
School composition: proportion pupils of other ethnicity			1.972*	.389	1.797*	.393	1.798*	.395
School heterogeneity			-1.909*	.534	-1.732*	.539	-1.737*	.541
Neighborhood composition: mixed			-.080	.165	-.068	.166	-.066	.168
Parents' network composition: mixed			.447*	.234	.472*	.235	.472*	.237
Nonimmigrant friendship network					.102	.37	-.063	.584
Immigrant friendship network: homogeneous					ref.		ref.	
Immigrant friendship network: interethnic					.454*	.145	.525*	.232
Union type								
Married							ref.	
Cohabiting							.835*	.324
Dating							.424*	.214
Cohabiting × nonimmigrant network							-.398	1.314
Dating × nonimmigrant network							.498	.776
Cohabiting × interethnic friendship network							-.296	.464
Dating × interethnic friendship network							-.079	.300
Constant	2.126	2.119	1.378	2.149	0.855	2.166	-.097	2.214
Hosmer–Lemeshow chi	7.59		9.44		3.83		9.08	
Determinant of correlation matrix	.113		.018		.013		.001	

Note. N = 1406, *p < 0.05 (one-tailed tests)

friendship network becomes involved in an interethnic union, the odds for involvement were 1.5 times higher for individuals whose network consists of one other ethnic group (exp (.419)), and 1.8 times higher for individuals whose network consists of at least two other ethnic groups (exp (.565)).

Does the effect of the social context on interethnic union formation change once we control for the composition of the friendship network during young adolescence? The results show that, after including the effect of the friendship network, the effect of the school context remains significant and declines only slightly compared with model 2. In other words, the effect of the school context does not appear to operate via the friendship network. Moreover, the results show that the effect of the school context has a significant direct effect in addition to the effect of the friendship network. With regard to the effect of the parental network, we find that, compared with model 2, the effect increases slightly and continues to be significant. The effect of the neighborhood remains insignificant.

In model 4, we include the interaction effect of friendship networks and union type to gain insight into the question of whether the effect of the friendship network on interethnic unions differs by type of union. The main effect of union type is in line with the descriptive finding that the prevalence of interethnic unions is highest among cohabiting unions and that marriages are less likely to be interethnic than cohabitating and dating unions. The odds that a cohabiter has an interethnic partner are 2.3 times higher than the odds that a married individual has an interethnic spouse (exp (.835)). Those who date are 1.5 times more likely to be in an interethnic union than those who are married (exp (.424)). The difference between dating and cohabiting couples is not as expected. Cohabiting couples are less endogamous than dating couples. We come back to this in the conclusion.

Turning to the interaction terms, our main focus in model 4 is on the interaction with interethnic friendship network. We find negative interactions with cohabiting unions and dating unions but these are not statistically significant. When we combine dating and cohabiting unions, the interaction effect is $b = -.093$ with a p value of .508. Hence, although the direction of the effect is as expected, we cannot conclude that the effects of the friendship network are weaker for less-formalized unions. The interaction effects with nonimmigrant network, although less important theoretically, are also not statistically significant.[2]

Discussion

The goals of this article were threefold. First, we set out to provide more insight into the formation of interethnic unions by examining the impact of the friendship network in a longitudinal fashion. In addition, we extended earlier theoretical work by studying to what extent friendship networks may explain the association between the social context and partner choice that has been found in previous studies (Emerson et al., 2002; Kalmijn, 1994). Third, we add to previous research by analyzing dating and cohabiting unions in addition to marital unions. We will discuss our results and their implications for our understanding of relationship development.

We tested our hypotheses using longitudinal data on immigrant children in two metropolitan areas in the US. The analyses provide clear support for our main

hypothesis. Individuals who had an interethnic friendship network were more likely to choose an interethnic partner later in life. In addition, analyses show that the more ethnic groups were present in someone's friendship network, the higher the odds that this individual later enters an interethnic union. Our evidence is stronger than previous studies because the sample we use is broader and because our evidence is longitudinal, thereby ruling out the possible reverse causal effect of being in an interethnic union on friendship networks. Several mechanisms are likely to play a role here. First, interethnic friendship networks may affect partner choices by decreasing ethnic identification and intergroup prejudice (Pettigrew & Tropp, 2006). Second, interethnic friendship networks may have weaker norms of endogamy. Third, interethnic friendship networks may increase opportunities to meet individuals of other ethnic groups by acting as a bridge to out-groups. Accordingly, the opportunity to meet potential interethnic partners also increases.

Our second goal was to examine the role of the social context and the friendship network simultaneously. The school context has a substantial effect on entering an interethnic union. The more out-group members are present in the pupil population, the higher the likelihood of choosing an interethnic partner. At the same time, school hetero-geneity, that is, many different ethnic groups attending the school – holding constant the size of the out-group – has a negative effect on the likelihood of entering an interethnic union. In addition, we found that having parents whose network is mixed positively affects the likelihood of interethnic partner choice. By contrast, the analyses show that the neighborhood did not affect partner choice significantly when controlling for the effect of the school context. The absence of an effect of the neighborhood context may be a result of the crude measurement or due to having moved since the time of measure-ment. Contrary to our expectations, the effect of the school context and parents' network did not diminish substantially when controlling the effect of the friendship network. Thus, we found little support for the mediating role of personal networks. Partner choice is affected by both social contexts *and* friendship networks.

If the effect of the social context does not run via the friendship network, how does it affect partner choice? Our results suggest that individuals may sometimes select their partner from a social context without first filtering them into their network. Hence, opportunities provided by the social context to meet individuals of a different ethnicity are as important as opportunities provided by the friendship network. In addition, the social context may also affect individual partner preferences by reducing prejudice, even though contact within a social context is mostly superficial. Rather, the difference is between having interethnic contact and not having interethnic contact. This finding fits within the literature on the contact hypothesis by supporting the conclusion of Pettigrew and Tropp (2006) and Tropp and Pettigrew (2005) that optimal contact conditions, such as personal contact, are not necessary for prejudice reduction. Furthermore, our study contributes to this literature by illustrating how the contact hypothesis manifests itself in the lives of immigrant children by pointing out consequences of intergroup contact that lie beyond the reduction in prejudice (Dixon, Durrheim, & Tredoux, 2005). The finding of Emerson et al. (2002) that prior interethnic contact increases the likelihood of forming interethnic friendship ties is extended by showing that prior interethnic contact also affects the likelihood of forming the more intimate tie of partnership. Moreover,

intermarriage not only indicates a higher level of social integration, but is in itself also an agent for further social integration (Lieberson & Waters, 1988). Hence, the study suggest that interethnic contact during early adolescence, both superficially within the social context and more personally within the friendship network, has also long-term effects for the social integration of ethnic groups.

The third goal of our study was to see how the prevalence of exogamy and the effect of the friendship network differed between types of unions and whether this could be explained by the effect of the friendship network. Results showed that dating and cohabiting unions are more likely to be interethnic than marital unions. Whereas this is in line with expectations, we also found that cohabiting couples are more often interethnic than dating couples. There may be several explanations for this unexpected finding. The number of cohabiting individuals in our sample was small and may not be representative. An alternative explanation is that this finding may be the result of a selection effect. Individuals who cohabit, especially those who view cohabitation as an alternative to marriage, are a selective group with respect to norms and values (Clarkberg, Stolzenberg, & Waite, 1995). Likewise, cohabiting couples may be less likely to adhere to the more traditional norm of endogamy in society. However, even after controlling the selectivity of nonreligious individuals to cohabit, cohabiters are most likely to have an exogamous partner. Finally, the high rate of exogamy in cohabiting unions may also be a result of differences in the development of intra- and interethnic unions that are caused by third party influence, such as friends. Our interaction analyses, however, did not support our expectation that friendship networks would have the strongest effects for more formalized unions. Our reasoning was that such unions would receive more disapproval from the friendship network, but our findings show that the effect of the friendship network is equally strong for all types of unions. This also suggest that the effect of the friendship network probably works more via opportunities and its effect on individual preferences than via its effect on third party preferences and pressure.

Future research might improve upon some of the data limitations of this study. First, the use of panel data in our study was an improvement in the cross-sectional studies that had examined the friendship effect so far. However, some measures were not optimal. Dating status had to be inferred from answers to questions about the characteristics of the partner. Respondents without a partner may have filled out desired partner characteristics and have been wrongly classified as dating. Furthermore, the friendship network measure was not person-oriented, but based on the characteristics of the parents. In addition, the neighborhood context and the parents' network measures were not continuous, thereby limiting the variation of these variables and, hence, the desired precision in our analysis. Also, our analyses are based on a sample of children of immigrants. Future research might investigate whether the effect of the friendship network on partner choice that we have found for immigrant children also applies to nonimmigrant children and, thus, whether this effect is a universal phenomenon or not. We would expect a replication of our findings, because the arguments of opportunities, preferences, and third party influence that have motivated our hypothesis are considered to be equally valid for nonimmigrant children.

The influence of friends on romantic development has been illustrated in this study by the effect of the friendship network on the choice of a partner, which exists in addition to

effects of the social context. A useful approach to adopt in future research investigating the effect of third party preferences might be to shift the focus from the formation of interethnic unions to the dissolution of interethnic dating unions. Although much has been written about interethnic marriages, research on the important earlier stage of dating is still scarce. Shifting the focus to the dissolution of interethnic dating unions provides new opportunities to test the effect of third parties on partner choice by their influence on the development of interethnic unions.

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Notes

1. We use the classification non-Hispanic White, Black, Asian, and Hispanic because individuals within each of these groups share a common race and are similar with respect to identifying as Hispanic or not. We acknowledge that this classification unites more specific ethnic groups into one broader category. In the remainder of this study, ethnicity refers to these broad racial/ethnic groups.
2. We performed additional analyses to check whether our findings also hold whether we only include married and cohabiting individuals. The conclusions based on these analyses are the same. The additional analyses are available from the author upon request.

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