



## Bend it like Beckham: Ethnic identity and integration <sup>☆</sup>

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### ABSTRACT

We propose a theoretical framework to study the determinants of ethnic and religious identity along two distinct motivational processes: *cultural distinction* and *cultural conformity*. Under cultural conformity, ethnic identity is reduced by neighborhood integration, which weakens group loyalties and prejudices. On the contrary, under cultural distinction, ethnic minorities are more motivated in retaining their own distinctive cultural heritage the more integrated are the neighborhoods where they reside and work. Using data on ethnic preferences and attitudes provided by the Fourth National Survey of Ethnic Minorities in the UK we find evidence that might be consistent with intense ethnic and religious identity mostly formed as a *cultural distinction* mechanism. Consistently, we document that ethnic identities might be more intense in mixed than in segregated neighborhoods.

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*Bengali, bengali / Bengali, bengali / No no no / He does not want to depress you/ Oh no no no no no / He only wants to impress you / Oh.. Bengali in platforms / He only wants to embrace your culture / And to be your friend forever. ['Bengali in Platform,' Morissey, Viva Hate, 1988, Reprise/Wea]<sup>1</sup>*

## 1. Introduction

In the last decades, immigration into western countries has become an important facet of globalization. This phenomenon has induced renewed interest on the rise of ethnic diversity in the host countries.<sup>2</sup> While cultural diversity is generally seen as a desirable societal trait, the persistence of ethnic identities on the part of minorities is often perceived by natives as a threat or as a source of potential problems (see [Alba, 1990, 2005](#)). This is well illustrated, for instance, by the recent

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<sup>1</sup> Thanks to Andrew Clark for Morissey's quote.

<sup>2</sup> [Alesina and La Ferrara \(2005\)](#) provide a general discussion of the economic effects of increased ethnic diversity.

passionate debates all over Europe about the building of mosques or the public display of religious attire on the part of Muslim women. As Putnam (2007) put it in his John Skytte Price Lecture, “the increase in ethnic and social heterogeneity in virtually all advanced countries is one of the most important challenges facing modern societies, and at the same time one of our most significant opportunities”.

Two opposing views characterize the conceptual analysis of identity formation mechanisms in the social sciences.<sup>3</sup> The first view is characterized by the postulation that ethnic identity is reduced by assimilation and by the blurring of groups' boundaries. *Assimilation theories* in political science and sociology (Gordon, 1964; Moghaddam and Solliday, 1991) and *contact theory* in social psychology (Allport, 1954) are the prominent manifestations of this line of thought. Underlying these theories is the principle that group identity is driven by a preference for inclusiveness and *cultural conformity*.<sup>4</sup> The alternative view represents instead ethnic minorities as motivated in keeping their own distinctive cultural heritage, in identifying themselves with an ethnic/social group to generate a sense of positive *distinctiveness* from the cultural predispositions of the majority (Abrams and Hogg, 1988; Turner, 1982). These ideas compose the core of theories of *multiculturalism* (Glazer and Moynihan, 1970; Taylor and Lambert, 1996), and *conflict* (Bobo, 1999).<sup>5</sup> The fundamental principle of these theories is that group identity formation is driven by a preference for *cultural distinction*.

In this paper, we propose a simple model of identity formation that is able to accommodate both cultural conformity and cultural distinction. *Cultural conformity* and *cultural distinction* provide distinct empirical implications on the way neighborhood segregation interacts with the process of ethnic integration. When *cultural conformity* is the main motivational process of identity formation, we expect neighborhood segregation to act as a complement to ethnic assimilation. On the contrary, when *cultural distinction* is at work, neighborhood segregation might substitute for ethnic assimilation.<sup>6</sup>

Nonetheless, identifying empirically *cultural conformity* and *cultural distinction* by studying the interaction between neighborhood segregation and ethnic integration is complicated for two reasons. First of all, *cultural conformity* and *cultural distinction* are specific dimensions of individuals' preferences whose manifestation in their choices is mediated by the characteristics of the choice environment itself. For instance, while cultural distinction reduces the “demand” for homogamous marriages (an indicator of identity) in segregated neighborhoods, this effect is confounded by a “supply” effect: homogamous marriages are facilitated, simply as a consequence of random matching, in segregated neighborhoods where a single ethnic group is relatively dominant. Secondly, the distribution of the population by ethnic trait across neighborhoods is not exogenous. Individuals choose where to live depending also on their preferences for ethnic identity. Without a natural experiment, the endogeneity of the neighborhood distribution of the population by ethnic trait is, in principle, an even harder problem to deal with.

In this paper, we use data from the UK Fourth National Survey of Ethnic Minorities (FNSEM) to provide some descriptive evidence. The FNSEM over-samples ethnic minority groups and provides a wealth of information about different dimensions of identity and aspects of individual's ethnic preferences. In addition, the data is merged with Census information, so that it is possible to obtain the percentage of residents belonging to the different ethnic groups at a very high level of spatial disaggregation. The data reveal evidence consistent with ethnic identity to be formed as a *cultural distinction* mechanism rather than due to *cultural conformity*. Indeed, a cultural conformity mechanism in our context would in fact generate the implication that individuals with stronger preferences for ethnic identity locate in more ethnically segregated neighborhoods. Although our data are limited to make conclusive statements, they do not show any clear trend of this sort. In conclusion, we cannot answer causal questions like “how much more/less identity would an individual with given characteristics form when moved from a neighborhood A to a neighborhood B?”. Nonetheless, under our modeling assumptions, we can evaluate the relative likelihood of the data with respect to *cultural distinction* vs. *cultural conformity*.

The evidence for *cultural distinction* fits well with several other empirical studies on the link between identity and segregation. Fryer and Torelli (2010), using data from the National Longitudinal Study of Adolescent Health, find that “acting white” behavior among blacks is more developed in racially mixed schools.<sup>7</sup> Also, Bisin et al. (2004) document that, in General Social Survey data, religious socialization across US states is more intense when a religious faith is in minority.<sup>8</sup> Finally, Munshi and Wilson (2011) combine data from the US census and the National Longitudinal Survey of Youth to identify a negative relationship across counties in the Midwest of the United States between ethnic fractionalization in 1860 and the probability that individuals have professional jobs or migrated out of the county by 2000.

<sup>3</sup> The study of ethnic identity formation has a long theoretical and empirical tradition in social sciences with Cross (1991), Phinney (1990), Ferdman (1995) in developmental psychology, Stryker (1980) in symbolic interactionist sociology, Tajfel (1981), Tajfel and Turner (1979), Turner et al. (1987) in social psychology, and Brewer (2001) in political psychology.

<sup>4</sup> See Bernheim (1994), Akerlof (1997) and Patacchini and Zenou (2012) for formal economic analyses of conformity.

<sup>5</sup> At a broader level, this view is also related to the *social identity theory* in social psychology (Tajfel, 1981; Turner, 1982).

<sup>6</sup> In economics, the distinction between *cultural conformity* and *cultural distinction* is also related to the notion of cultural complementarity and cultural substitutability between socialization mechanisms. This has been defined formally by Bisin and Verdier (2000). Indeed, in Bisin and Verdier (2000), when family and role models tend to be substitutes in the process of socialization, families with a relatively minoritarian cultural trait have larger incentives to spend resources socializing their children to their trait in order to ensure its persistence. Conversely, under cultural complementarity, the more minoritarian is a family's cultural trait, the lower are the family's incentives to socialize their children to the trait and hence to limit cultural assimilation. For empirical tests of cultural substitutability and cultural complementarity in the Bisin-Verdier framework, see, in particular, Bisin et al. (2004), Patacchini and Zenou (2011, 2016b).

<sup>7</sup> Anthropologists have also observed that social groups seek to preserve their identity, an activity that accelerates when threats to internal cohesion intensify. Thus, groups may try to reinforce their identity by penalizing members for differentiating themselves from the group. The penalties are likely to increase whenever the threats to group cohesion intensify; for an early analysis of this issues, see Whyte (1943).

<sup>8</sup> Relatedly, Bisin and Verdier (2000) provide many examples of the resilience of ethnic and other cultural traits that can be explained by a similar mechanism, from the case of Orthodox Jews in Brooklyn to the case of aristocrats in France.

## 2. Related literature

Beyond the large sociology and socio-psychology literature on ethnic identity formation, our work is related to a growing economic literature studying the evolution of culture and ethnic identity and its interactions with economic outcomes. [Akerlof and Kranton \(2000, 2010\)](#) consider identity formation as an explicit – more or less conscious – endogenous choice by individuals exposed to a certain social context. [Darity et al. \(2006\)](#) and [Eaton et al. \(2009\)](#) provide evolutionary models discussing the relationship between identity formation and inter-racial interactions.

In the specific context of African American communities of the Ante-Bellum American South, [Bodendorn and Ruebeck \(2003\)](#) underline the endogeneity of racial identity. [Chiswick \(2009\)](#) emphasizes the role of ethnic specific human capital in minority groups' decisions to culturally assimilate or separate. [Austen-Smith and Fryer \(2005\)](#), [Battu et al. \(2007\)](#), [Bisin et al. \(2011a,b\)](#) and [Fang and Loury \(2005\)](#) discuss the emergence and persistence of “oppositional” or “dysfunctional” identities in marginalized social groups where some ethnic minorities reject the majority behavioral norms while others totally assimilate to it ([Ainsworth-Darnell and Downey, 1998](#)). For example, studies in the US (and also in the UK) have found that African American students in poor areas may be ambivalent about learning standard English and performing well at school because this may be regarded as “acting white” ([Fordham and Ogbu, 1986](#); [Wilson, 1987](#); [Delpit, 1995](#); [Ogbu, 2003](#); [Fryer and Torelli, 2010](#); [Battu and Zenou, 2010](#); [Patacchini and Zenou, 2016a](#)).

There are few theoretical models that try to explain oppositional identity behaviors. [Austen-Smith and Fryer \(2005\)](#) model the trade off experienced by black individuals by putting forward the tension they face between signalling their type to the outside labor market and signalling their type to their peers. Indeed signals that induce high wages can be signals that induce peer rejection. [Battu et al. \(2007\)](#) highlight another tradeoff faced by blacks. On the one hand, they want to interact with other blacks and thus to reject the white's norm. On the other, they also want to be friends with whites because the latter possess social networks of a higher quality. They find that black workers can end up choosing oppositional identities if their identity is not strong enough or the wage premium of being employed high enough. Based on cultural transmission and peer effects, [Bisin et al. \(2011a\)](#) develop a dynamic model of identity formation that explains why ethnic minorities may choose to adopt oppositional identities and why this behavior may persist over time.<sup>9</sup>

Related to the issue of oppositional identity, [Brewer \(1991\)](#) proposes a model of optimal distinctiveness, in which the strength of affiliation to a particular group is a function of its relative size in the population. Brewer postulates that in-group identification is the product of two opposing needs. On one hand, individuals have a distinct need for inclusion (conformity). As such, if a person is isolated from any social group, she feels the need to identify herself with a collective unit. On the other hand, people also have a need for distinctiveness: if a person is a member of an excessively large group, she feels the need to search for differentiation. In other words, individuals need a certain level of both similarity to and differentiation from others. Our theoretical model is clearly related to this idea but the mechanisms are different since ethnic minorities always prefer to interact with someone from the same community, independent of the size of this community. Cultural distinction and cultural conformity are captured through the costs of interacting with the majority group and are not choice variables. Each ethnic minority chooses his strength of identity and how much effort he puts in finding a spouse from his own community. If the cost differential between interacting with people from the majority and the minority group decreases (increases) with the fraction of majority individuals residing in the same neighborhood, i.e. cultural conformity (cultural distinction), then we show that the strength of identity and neighborhood segregation are complements (substitutes) for homogamy marriage.

Finally, there are some empirical papers that are related to our study. [Battu and Zenou \(2010\)](#), [Nekby and Rödin \(2010\)](#), and [Manning and Roy \(2010\)](#) find that language proficiency in the host country, isolation and segregation, years spent in the host country, intermarriage, and education acquired before immigration are significantly correlated with ethnic identity. [Facchini et al. \(2015\)](#) study immigrant assimilation by analyzing whether friendship with natives is a measure of cultural assimilation, and by investigating the formation of social ties. Using the German Socio-Economic Panel, they find that immigrants with a German friend are more similar to natives than those without German friends, along several important dimensions, including concerns about the economy, an interest in politics, and a host of policy issues. In the same context of migrant communities in Germany, [Constant and Zimmermann \(2008\)](#) and [Constant et al. \(2009\)](#) analyze ethnic identity as the endogenous balance between commitment to and self-identification with the culture and society of the origin and the host country.

## 3. Conformity vs. distinction

We consider a model where ethnic minorities choose with whom to marry (homogamy or heterogamy) and how strong is their identity and how these decisions are affected by the proportion of ethnic minorities living in their neighborhood. We start, first, with a pure model of marriage choice and then include identity decision.

<sup>9</sup> For other theoretical models, see also [De Marti and Zenou \(2016\)](#) and [Verdier and Zenou \(2015\)](#).

### 3.1. Marriage choice

Consider a member of an ethnic or religious group.<sup>10</sup> Let  $q$  denote the proportion of ethnic minorities in the neighborhood where this ethnic person resides. Let homogamy (i.e. when an ethnic minority marries someone with the same ethnic background) be an index  $H \in \{0, 1\}$ , with  $\Pr\{H = 1\} = \pi$  (i.e.  $H = 1$  means that the ethnic minority is married to someone from the same ethnic group while  $H = 0$  indicates heterogamy). There is a psychological cost of interacting with individuals from the majority (dominant) group. We assume that this (psychological) cost depends on the marriage status of the minority member and is denoted by  $C(H)$ . We further assume that such costs are lower in a homogamous than in a heterogamous marriage, i.e.

$$\Delta C = C(0) - C(1) > 0 \quad (1)$$

Indeed, all ethnic minorities need to interact with natives, for example when their kids go to the same school and have the same social activities, or when they need to find a job. The *unit* cost of interacting with natives is the same for all ethnic minorities. However, we postulate that, when a minority individual gets married with someone from the same ethnic group, he/she does not need to socially interact as much with natives (he/she puts children in an “ethnic” school, works with people from the same ethnic group, etc.). As a result, the *total cost* of socially interacting with natives is lower for an individual in a homogamous marriage than for someone who is married to a native (heterogamy) since the latter spends more time with natives (he/she needs to meet the parents in law, to put his/her kids in the majority school, etc.). In our framework,  $C$  denotes the total cost of interacting with a native and it satisfies (1), that is  $C(0) > C(1)$ .

In general,  $\Delta C$  is also a function of  $q$  as well as of the strength of identity of the ethnic minority; we denote this strength of identity by an index  $I \in \{0, 1\}$  with  $\Pr\{I = 1\} = \nu$ .<sup>11</sup> Indeed, the composition of the neighborhood as well as the strength of identity have an obvious impact on this cost differential since families living in more “ethnic” neighborhoods and with stronger ethnic identities are more ensured that their ethnic identity will be passed on to their kids. We thus have  $C(H) \equiv C(H, I, q)$  and thus  $\Delta C \equiv \Delta C(q, I)$ .<sup>12</sup> It is then straightforward to formulate a precise definition of cultural conformity and distinction:

**Definition 1.** The preferences of an ethnic minority individual display:

- (i) *Cultural conformity*: if the differential cost  $\Delta C$  decreases with the proportion of non-minority members  $1 - q$ , i.e.  $\frac{\partial \Delta C(q, I)}{\partial q} > 0$ ;
- (ii) *Cultural distinction*: if the differential cost  $\Delta C$  increases with the proportion of non-minority members  $1 - q$ , i.e.  $\frac{\partial \Delta C(q, I)}{\partial q} < 0$ .

In the cultural conformity assumption, the minority's psychological costs of interacting with individuals from the majority group are *decreasing* in the proportion of whites living in the neighborhood where the minority resides. In the cultural distinction assumption, we have the opposite.<sup>13</sup> To be more precise, when minorities are more exposed to the majority group (i.e. when  $1 - q$  increases), the difference in interaction costs with whites between a homogamous and heterogamous minority person is reduced with cultural conformity. Indeed, in that case, minorities tend to assimilate to the majority norm and their marital status have less impact on interaction costs. However, when we consider cultural distinction, this cost differential tends to increase because minorities are now rejecting the “white” norm and homogamous minorities interact much less with the majority group.

Minority members put effort in finding a spouse of the same ethnic background. Let this effort be a continuous variable denoted by  $\tau \in [0, 1]$ . Suppose that the minority member first searches a spouse in a restricted pool of partners from his/her own community minority. The search intensity,  $\tau$ , determines the probability with which he/she finds his/her marital partner in the pool. With the residual probability  $1 - \tau$ , he/she remains unsuccessful and therefore goes to a common pool of partners that includes both minority and majority types. There, he/she gets matched with a spouse of his/her community with probability  $q$ . As a result, an ethnic minority individual living in a neighborhood with a fraction  $q$  of minority members has a probability of marrying homogamously equals to

$$\pi(\tau, q) = \tau + (1 - \tau)q \quad (2)$$

To better understand this equation, think of a neighborhood where an ethnic minority (say from India) resides so that  $q$  denotes the fraction of people from the same community (Indians) who live in the same neighborhood. First, each ethnic individual from India in this neighborhood decides how much effort  $\tau$  he puts in looking for a spouse from India, not necessarily residing in the same neighborhood. Indeed, some people may look for arranged marriages, ask their friends or community leaders if they know someone from India who wants to marry, etc. If this fails, then the probability of marrying someone from India will depend on  $q$ , the neighborhood when this person lives. If he lives in an almost Indian

<sup>10</sup> We only consider here two groups: the ethnic minority and the majority groups. Our theoretical analysis can easily be extended to more than one ethnic group.

<sup>11</sup>  $C$  is therefore also a function of both  $q$  and  $I$ .

<sup>12</sup> Remember that in this section both  $q$  and  $I$  are exogenous. We will relax these assumptions below.

<sup>13</sup> See our discussion in the Introduction.

neighborhood ( $q$  close to 1), then it will be easy for him to marry an Indian woman. If, on the contrary, he lives in an almost all white neighborhood ( $q$  close to 0), then it will be more difficult to marry an Indian woman.

The search intensity  $\tau$  is chosen by the agent but it requires a cost  $Z(\tau)$ , in the same units of the psychological costs  $C(\cdot)$ . For analytical simplicity, we assume that:

$$Z(\tau) = \frac{1}{2} \alpha \tau^2 \quad (3)$$

A minority member's problem is thus<sup>14</sup>:

$$\max_{\tau \in [0,1]} \left\{ -\pi(\tau, q)C(1) - [1 - \pi(\tau, q)]C(0) - \frac{1}{2} \alpha \tau^2 \right\} \quad (4)$$

where  $\alpha$  is a measure of the relative cost of  $\tau$ . As a result, the first order condition of problem (4) leads to:

$$\tau^* = \frac{(1-q)\Delta C(q, l)}{\alpha} \quad (5)$$

Observe that assuming  $\Delta C > 0$ , i.e. it is less costly to interact with someone from own community than other community, does not prevent ethnic minorities from marrying an outsider (i.e. someone from the majority group). It is because they do not perfectly control with whom they will marry. Indeed, they only decide upon  $\tau$ , the effort of finding a spouse from the same ethnic minority community, but this does not guarantee that they will marry one since  $\tau \in [0, 1]$  is also the probability of finding an ethnic spouse from the same community. The probability of marrying an ethnic spouse is in fact given by  $\pi$ , defined in (2), which also depends on  $q$ , the fraction of ethnic minorities living in the same neighborhood. It is also because there is a cost of providing effort  $\tau$  given by  $\frac{1}{2} \alpha \tau^2$ . Clearly, if  $\alpha$  is low enough (e.g.,  $\alpha \rightarrow 0$ ), then the marginal utility of providing effort  $\tau$  is always positive and therefore  $\tau^* = 1$ . In that case,  $\pi^* = \tau^* = 1$ , and the ethnic minority will always marry someone from the same community. On the contrary, if  $\alpha$  is high enough (e.g.,  $\alpha \rightarrow +\infty$ ), then it would be optimal to put zero effort, i.e.  $\tau^* = 0$ , and ethnic minorities' marriage choice will only depend on  $q$  since  $\pi^* = q$ . In that case, ethnic minorities who live in a mostly ethnic neighborhood, i.e.  $q$  high (a mostly white neighborhood, i.e.  $q$  low) will be more likely to marry someone from the same community (an outsider).

Replacing  $\tau^*$  in (2), the probability of a homogamous marriage is equal to

$$\pi^* = q + \frac{(1-q)^2 \Delta C(q, l)}{\alpha} \quad (6)$$

**Proposition 1.** *When ethnic minorities only choose with whom to marry, we have<sup>15</sup>:*

- (i) *Assume cultural distinction: Then, the higher is the proportion of the same ethnic group living in the neighborhood, the lower is the homogamy effort, i.e.*

$$\frac{\partial \tau^{CD}}{\partial q} < 0$$

- (ii) *Assume cultural conformity: Then, if the elasticity of  $\Delta C$  with respect to  $q$  is large enough, the higher is the proportion of the same ethnic group living in the neighborhood, the higher is the homogamy effort, i.e.*

$$\frac{\partial \tau^{CC}}{\partial q} > 0$$

This result is quite intuitive since cultural conformity or distinction captures the impact of the differential cost  $\Delta C$  on  $q$ , the proportion of non-minority members (see Definition 1). However, the sign of  $\partial \pi^* / \partial q$  tends to be ambiguous with either cultural distinction or cultural conformity.

### 3.2. Marriage choice and identity formation

We complement the analysis of the previous section by including identity formation. In this model,  $q$  is still the exogenous ethnic composition of the location. The timing is as follows. People are “dropped” in a neighborhood and then simultaneously form their ethnic identity (choose  $\nu$ ) and look for a spouse (choose  $\tau$ ). Once the individual marriage status either homogamous or not ( $H=1$  or  $=0$ ) is realized, the psychological cost of interacting with individuals from the majority group depends on identity  $\nu = \Pr\{I=1\}$  and on the percentage ethnic minorities where he/she resides,  $q$ ; i.e.  $C(H, \nu, q)$ . We have  $(H, l) \in \{0, 1\}^2$  and  $q \in [0, 1]$ . Observe that the probability  $\nu = \Pr\{I=1\}$  is here modeled as a choice of the individual. We assume that *identity and homogamy act as complements* to each other. For simplicity, we use the following explicit function:

$$C(H, \nu, q) = (1 - \nu H)C(q)$$

<sup>14</sup> For notational simplicity, we do not put  $q$  and  $l$  as arguments of the cost function  $C(\cdot)$ .

<sup>15</sup> The superscripts CC and CD stand for “cultural conformity” and “cultural distinction”, respectively.

which implies that, for individuals in a homogamous marriage,  $H=1$ , we have:

$$C(1, \nu, q) = (1 - \nu)C(q),$$

while, for individuals in a heterogamous marriage,  $H=0$ , we have:

$$C(0, \nu, q) = C(q)$$

This means that a strong identity (high  $\nu$ ) with a homogamous marriage ( $H=1$ ) leads to a *lower total cost* of interacting with whites than a weak identity with a heterogamous marriage. Our explanation is as before. Individuals married to someone from the same ethnic group and having a strong identity do not interact very much with whites and thus have a lower interacting cost than someone more “integrated” to the majority group. This specification implies that  $\Delta C(q, \nu) = C(0, \nu, q) - C(1, \nu, q)$ , which is equal to:

$$\Delta C(q, \nu) = \nu C(q) \quad (7)$$

As above (Eq. (2)), the probability of marrying homogomously is given by  $\pi(\tau, q)$  and still equal to:

$$\pi(\tau, q) = \tau + (1 - \tau)q$$

where now  $\tau$  will be a function of  $q$  but also of  $\nu$ , the strength of identity. Observe that  $q$ , the fraction of individuals from the ethnic group residing in the same neighborhood, is a crude way of measuring peer effects but this is what we have in the (Census) data. In particular, we do not model the identity choice of the people living in the same neighborhood.<sup>16</sup> In this respect, this is a pure *random matching process* and therefore there is no assortative matching, in the sense that minority members with low (high) levels of ethnic identity strength would marry people with low (high) levels of ethnic strength. Again, we do not have this information in the data. From the Census, we only know  $q$ , the fraction of ethnic minorities residing in the same neighborhood but we do not know the strength of their identity.

We assume that location  $q$  is exogenous and individuals choose their identity and homogamy efforts,  $\nu$  and  $\tau$ . The utility cost of developing identity  $\nu$  is denoted by  $J(\nu)$ , in the same units of the psychological costs  $C(q)$ . As a result, a minority member's problem is:

$$\max_{\nu, \tau} \{ -\pi(\tau, q)(1 - \nu)C(q) - [1 - \pi(\tau, q)]C(q) - Z(\tau) - J(\nu) \}$$

where  $\pi(\tau, q)$  is given by (2). Indeed, if an ethnic minority marries homogomously (this occurs with probability  $\pi(\tau, q)$ ), then the cost of interacting with whites is  $C(1, \nu, q) = (1 - \nu)C(q)$  while, if he/she marries with someone from the white population (this occurs with probability  $1 - \pi(\tau, q)$ ), he/she occurs a cost of  $C(0, \nu, q) = C(q)$ . Assume, for simplicity, that (3) holds and that  $J(\nu)$  is quadratic, i.e.  $J(\nu) = \frac{1}{2} \nu^2$ . The first order conditions of this problem can easily be reduced to<sup>17</sup>:

$$\nu = \pi C(q) \quad (8)$$

$$\pi = q + \frac{(1 - q)^2 C(q)}{\alpha} \nu \quad (9)$$

This is a simultaneous equation system in which  $(\nu^*, \pi^*)$  are the endogenous variables and  $q$  the exogenous variable.

Under *cultural conformity*, the minority's psychological costs of interacting with individuals from the majority group are decreasing in the proportion  $1 - q$  of the majority residing in the neighborhood where the minority lives. The simplest formulation therefore has:

$$C(q) = c q \quad (10)$$

Under *cultural distinction*, the minority's psychological costs to interact with individuals from the majority group are increasing in the proportion  $1 - q$  of the majority in the neighborhood where the minority resides. The simplest formulation thus has:

$$C(q) = c(1 - q) \quad (11)$$

Given (7), this implies that  $\Delta C(q, \nu) = \nu c q$  and thus  $\partial \Delta C(q, \nu) / \partial q > 0$  for *cultural conformity*, and  $\Delta C(q, \nu) = \nu c(1 - q)$  and thus  $\partial \Delta C(q, \nu) / \partial q < 0$  for *cultural distinction*. This corresponds exactly to [Definition 1](#).

By plugging (11) into (8) and (9), for *cultural distinction*, we obtain:

$$\nu^{CD} = \pi^{CD} c(1 - q) \quad (12)$$

$$\pi^{CD} = q + \frac{c(1 - q)^3}{\alpha} \nu^{CD} \quad (13)$$

<sup>16</sup> For an analysis where the choice of people residing in the same neighborhood is explicitly modeled as a network formation game, see [Del Bello et al. \(2016\)](#).

<sup>17</sup> It is easily verified that

$$\tau^* = \frac{(1 - q)C(q)\nu^*}{\alpha}$$

When plugging  $\tau^*$  into (2), we easily obtain (9). We prefer, however, to express our equilibrium condition in terms of  $\pi^*$  instead of  $\tau^*$  because, in the data, we observe  $\pi^*$  and not  $\tau^*$ .

Various simple conclusions can be obtained from these two equations. Consider, first, Eq. (12), expressing how identity formation  $\nu^{CD}$  depends on the proportion  $q$  of minority members and on  $\pi^{CD}$  the probability of homogamy. Clearly, the larger is the proportion of minority members and the more segregated the neighborhood is, the lower is  $C(q) = c(1-q)$ , the psychological cost of interacting with the majority group, and the smaller are the incentives for identity formation as a cultural distinction. On the other hand, the higher is the probability  $\pi^{CD}$  of homogamous marriage resulting from socialization effort, the larger are the expected benefits from identity formation and the more intense is the identity. Interestingly, marital segregation, as reflected by  $\pi^{CD}$ , and neighborhood segregation, as reflected by  $q$ , are substitutes in terms of identity formation since  $\frac{\partial^2 \nu^{CD}}{\partial \pi^{CD} \partial q} < 0$ . In other words, the marginal effect of marital segregation on identity formation tends to be reduced the more segregated the neighborhood is (i.e. the larger is  $q$ ).

Consider now Eq. (13) characterizing the (endogenous) probability of homogamy  $\pi^{CD}$  as a function of identity  $\nu^{CD}$  and neighborhood segregation  $q$ . The more intense is the identity formation, the higher is the probability of homogamy. On the other hand, the effect of  $q$  on  $\pi^{CD}$  is ambiguous and reflects two opposite effects. First, there is a direct effect related to the fact that the larger the proportion of minority people in the neighborhood  $q$ , the larger the probability of finding a minority spouse in the common pool of potential partners. This effect is reflected in the first term  $q$  of (13). The second effect is illustrated by the second term  $(1-q)^2 C(q) \nu^{CD}$  and indicates the impact of a change in  $q$  on the marginal incentives to marital segregation (i.e. the socialization effort  $\tau^{CD}$ ). Indeed, the more segregated is the neighborhood (i.e. the larger is  $q$ ), the smaller are the incentives to spend resources of finding directly a partner in the restricted pool of minority spouses. First, because social interactions with the majority people are less costly, there is less of a need for identity formation that can be effectively expressed in a homogamous marriage. This is reflected by the term  $C(q) = c(1-q)$ . Second, a larger proportion of minority people in the neighborhood also reduces the incentives to make special effort to find a spouse in a segregated marital pool, as minority people are already more likely to be found in the common marital pool. Both channels reduce therefore the incentives for socialization efforts  $\tau^{CD}$ , which, in turn, tends to reduce the probability of homogamy  $\pi^{CD}$ . It is also interesting to observe that, for the choice of socialization effort and probability of homogamy, identity and neighborhood segregation (as reflected by  $q$ ) are substitutes since  $\frac{\partial^2 \pi^{CD}}{\partial \nu^{CD} \partial q} < 0$ . More precisely, the marginal effect of identity on minority homogamy tends to be reduced the more segregated the neighborhood (i.e. the larger is  $q$ ).

Let us now consider *cultural conformity*. By plugging (10) into (8) and (9), we obtain:

$$\nu^{CC} = \pi^{CC} cq \quad (14)$$

$$\pi^{CC} = q + \frac{c}{\alpha} q(1-q)^2 \nu^{CC} \quad (15)$$

Again, simple conclusions can be drawn from these equations. Consider first (14). In that case, the larger the proportion  $q$  of minority members and the more segregated the neighborhood, the higher  $C(q) = cq$ . Similarly, the larger the probability  $\pi^{CC}$  of homogamous marriage, the larger the expected benefits from identity, and hence the more intense is identity formation. Again the sign of the cross derivative is interesting. Marital segregation (as reflected by  $\pi^{CC}$ ) and neighborhood segregation (as reflected by  $q$ ), under cultural conformity, are complements in terms of identity formation. In other words, the marginal effect of marital segregation on identity formation is larger, the more segregated the neighborhood is (i.e. the larger is  $q$ ).

Consider now Eq. (15). The more intense is identity formation  $\nu^{CC}$ , the larger is neighborhood segregation  $q$ . The effect of  $q$  on  $\pi^{CC}$  is, however, ambiguous and reflects now three effects. First, there is, as before, the *direct effect* related to the fact that the larger the proportion of minority people in the neighborhood, the larger the probability of finding a minority spouse in the common pool of potential partners. This effect is illustrated by the first term  $q$  in (15). A second positive effect is illustrated by  $\nu^{CC} C(q)/\alpha = \nu^{CC} cq/\alpha$ . The larger  $q$ , the larger the conformity psychological gain of social interactions with other minority individuals in the neighborhood and the associated identity formation process that can be effectively expressed in homogamous marriages. This increases the incentives for homogamous marriages and the marginal incentives to marital segmentation (i.e. the socialization effort  $\tau^{CC}$ ). The last effect of  $q$  on  $\pi^{CC}$ , captured by  $(1-q)^2$ , is negative. As in the case of cultural distinction, it reflects simply the fact that a larger  $q$  reduces the incentives to make special efforts to find a spouse in a segregated marital pool, as minority people are already likely to be found in the common marital pool. This channel decreases the incentives for socialization efforts  $\tau^{CC}$ , and tends to reduce the probability of homogamy  $\pi^{CC}$ .

Finally, identity and neighborhood segregation (as reflected by  $q$ ) interact in terms of the formation of homogamous minority marriages. The second cross derivative of  $\pi$  with respect to  $\nu$  and  $q$  has the sign of

$$\frac{\partial^2 \pi^{CC}}{\partial \nu^{CC} \partial q} = \frac{d}{dq} \left\{ (1-q)^2 C(q)/\alpha \right\} = \frac{d}{dq} \left\{ (1-q)^2 \frac{cq}{\alpha} \right\}$$

which is, in general, ambiguous. When  $C(0) = 0$ , namely when identity formation gains are very small for small minority populations, it is easy to see that

$$\frac{d}{dq} \left\{ (1-q)^2 C(q) \right\} > 0$$

for small enough values of  $q$ . In that case, neighborhood segregation and identity are complements for homogamy.

Our discussion can be summarized by the following proposition:

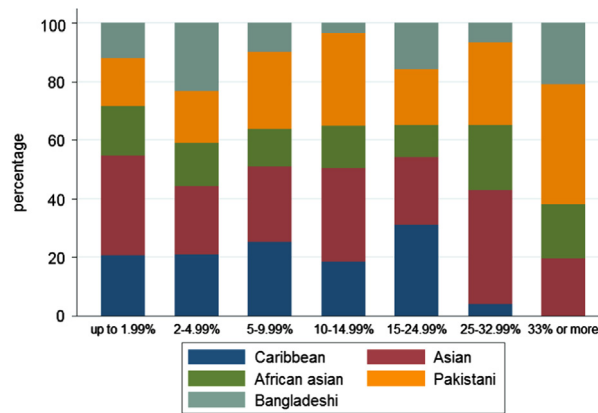


Fig. 1. Ethnic composition by neighborhood class. Notes: The Asian group comprises Indians and Chinese.

**Proposition 2.** When ethnic minorities choose both with whom to marry and their identity, we have:

- (i) Assume cultural distinction, i.e.  $C(q) = c(1 - q)$ :
  - (i-1) Consider the choice of identity  $\nu^{CD}$ : The strength of identity  $\nu^{CD}$  is decreasing with neighborhood segregation  $q$  and increasing with minority homogamy  $\pi^{CD}$ . Marital segregation  $\pi^{CD}$  and neighborhood segregation  $q$  are substitutes for identity formation  $\nu^{CD}$ .
  - (i-2) Consider the choice of marriage  $\pi^{CD}$ : The probability of marital segregation is increasing in the intensity of identity while the effect of neighborhood segregation is ambiguous. Identity and neighborhood segregation are substitutes for homogamy.
- (ii) Assume cultural conformity, i.e.  $C(q) = c q$ :
  - (ii-1) Consider the choice of identity  $\nu^{CC}$ : Identity is increasing with neighborhood segregation and increasing with minority homogamy. Marital segregation and neighborhood segregation are complements for identity formation.
  - (ii-2) Consider the choice of marriage  $\pi^{CC}$ : The probability of marital segregation  $\pi^{CC}$  is increasing in the intensity of identity  $\nu^{CC}$  while the effect of neighborhood segregation is ambiguous. For small enough minority groups  $q$ , identity intensity  $\nu^{CC}$  and neighborhood segregation  $q$  are complements for homogamy.

From this proposition, it clearly appears that the distinctive characteristics of the *cultural distinction* model (as opposed to the *cultural conformity* model) are:

1.  $\nu$  is decreasing in  $q$ ; and
2. marital segregation  $\pi$  and neighborhood segregation  $q$  are substitutes for identity formation  $\nu$ , i.e.  $\frac{\partial^2 \pi}{\partial \nu \partial q} < 0$ .

This is what we want to test in the data.

#### 4. Data and descriptive evidence

As it is extremely difficult to obtain detailed data on ethnic preferences and homogamy marriage along ethnic lines together with residential neighborhood composition at high level of spatial disaggregation and individual socio-economic characteristics, there is no *direct* empirical test of models of cultural integration in the literature. We present a first evidence in this direction by using data from the Fourth National Survey of Ethnic Minorities (FNSEM) collected in 1993/4 by the Policy Studies Institute. This includes a standard set of variables that capture individual, demographic and job characteristics; see Berthoud et al. (1997) and Modood et al. (1997) for details. It over-samples ethnic minority groups, distinguishing explicitly six of them: Caribbean, Indian, Pakistani, African-Asian, Bangladeshi, and Chinese.<sup>18</sup> The survey contains detailed information about the respondents' identification with their own ethnic group (e.g., attitudes towards inter-marriage, importance of religion and other aspects of individual's ethnic preferences) as well as variables aiming at capturing the heterogeneity within the non-white population in terms of individual, demographic, family and socio-economic characteristics (see Modood et al., 1997, for details).

<sup>18</sup> Black Africans were not included because the bulk of their immigration in the UK happened earlier. Furthermore, the survey only covers England and Wales.



We enrich the analysis of ethnic identification, necessarily a self-reported “subjective” measure, with the study of homogamy marriage along ethnic lines. Homogamy can in fact be considered an “objective” measure of identity, which is conceptually strongly related to our subjective measure.

Finally, to address the main issue of this paper, the identification of *cultural distinction* versus *cultural conformity*, we need to study the variation of the respondents' identification with their own ethnic group across different residential neighborhoods as characterized by their ethnic composition. To this end, we use the information provided by the FNSEM data about each individual's residential ward, which is taken from the 1991 Census.<sup>19</sup>

#### 4.1. Definition of the variables

The key variables in our analysis are (i) the ethnic composition of the residential neighborhood,  $q$ ; (ii) the intensity of ethnic identity,  $\nu$ ; and (iii), the probability of homogamous marriage,  $\pi$ . They are described in turn.

(i) For each individual  $i$ , the percentage of ward inhabitants of the same ethnic group is reported in the data divided into seven classes,  $q_i \leq 2\%$ ,  $2\% < q_i \leq 5\%$ ,  $5\% < q_i \leq 10\%$ ,  $10\% < q_i \leq 15\%$ ,  $15\% < q_i \leq 25\%$ ,  $25\% < q_i \leq 33\%$ ,  $q_i \geq 33\%$ . In 1991, there were not many wards with a portion of inhabitants of each ethnic group much larger than 33%.<sup>20</sup> In the regression analysis, we use the mean value of each interval and use the top coding  $q_i = 33$  for the last class.<sup>21</sup>

Fig. 1 reports the distribution of respondents over the ethnic composition of the neighborhood in which they live.

(ii) The survey contains a number of questions providing information on different dimensions of identity, in particular, the importance of religion, the attitudes towards inter-marriage, the relevance of ethnicity in influencing the kind of school people want for their children, and the clothes people wear.<sup>22</sup> For Asians, the interviewer also records if the head of the respondent is covered and, for Asian females, whether they wear bindi (i.e. the mark on forehead). We perform our analysis using separately the answers on each of these questions. Identity, denoted by  $I$ , is coded as a dichotomous variable taking value 1 if the individual considers as very important the role of religion in her/his life, and 0 otherwise (*importance of religion*). It takes value 1 if the individual would personally mind if a close relative were to marry a white person, and 0 otherwise (*inter-ethnic marriage*). It takes value 1 if ethnicity has a very important or at least fairly important influence in choosing the school for a child and 0 otherwise (*school ethnic composition*). Finally, it takes value 1 if the individual wears distinctive ethnic clothes (or, for Asians, if the interviewer see the head covered or the bindi), and 0 otherwise (*wearing distinctive ethnic clothes*). The variable measuring the intensity of ethnic identity,  $\nu$ , is then the probability that  $I = 1$ , for each aspect of these different measures of identity.

(iii) Homogamy  $H$  is a dummy variable taking value 1 if the respondent is married to a person of her/his own ethnic group, and 0 otherwise. The variable  $\pi$  measures the probability that marriage is homogamous. Singles, somewhat consistently with the theoretical analysis of integration in Section 4, are assigned  $H = 0$ , that is, they are treated as non-homogamous.<sup>23</sup>

An extensive set of control variables is also available. In addition to several individuals' observable characteristics (i.e. education, age, sex, fertility choices, employment status, job qualification, household house ownership, time spent in the UK, a dummy indicating whether the respondent is born in the UK or not), the data set also contains variables aiming at capturing the influence of the social environment (family, friends, neighbors) and workplace (language typically spoken in the family, with friends, at work, a dummy capturing instances of discrimination, and one indicating whether the marriage is arranged by the parents). Precise definitions of all these variables, as well as our sample descriptive statistics, can be found in the Data Appendix (Table A1). Excluding the individuals with missing or inadequate information on our target variables, we obtain a final sample of 1559 individuals.

#### 4.2. Descriptive evidence

The relationship observed in the data between ethnic identity and ethnic composition is represented in Fig. 2a. In panel (a) ethnic identity is directly measured by  $I$  (here importance of religion); while in panel (b) we use homogamy,  $H$ , as an indirect measure.  $I$  seems to vary non-systematically with ethnic composition as measured by  $q$ . The view that individuals

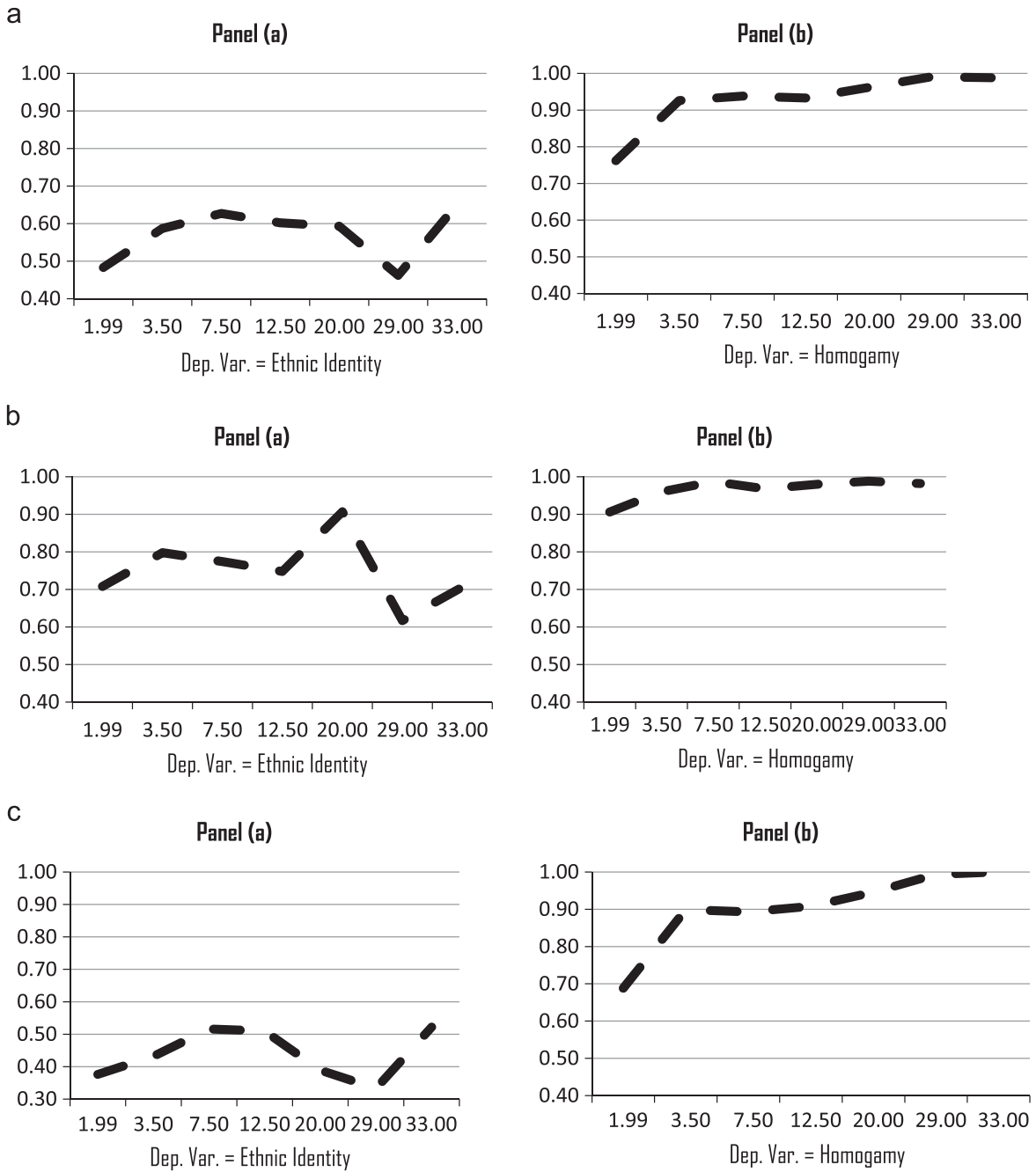
<sup>19</sup> A UK Census ward contains on average 3000–4000 residents.

<sup>20</sup> According to the Census 1991 data, for example, there are about 25% of the wards with percentages of Bangladeshi higher than 33% but only 5% with portions higher than 40%.

<sup>21</sup> Our results remain qualitatively unchanged when slightly moving the top coding.

<sup>22</sup> The precise questions are the following ones: “How important is religion to the way you live your life? Is it not at all important, not very important, fairly important or very important?”; “Would you personally mind if a close relative were to marry a white person?”; “If you were choosing a school for an eleven-year old child of yours, would your choice be influenced by how many (respondent's ethnic group origin) children there were in the school? And, if “yes”, would it be a very important influence, a fairly important influence or a not very important influence?”. If Asian: “do you ever wear Asian clothes such as sari, salwar, kameez, kurta or pyjama?”. And, if “yes”, “do you wear Asian clothes all the time or only sometimes?”. And, “at home?”, “in the homes of other Asians?”, “at social events?”, “at work?”, “to the shops?”. If Caribbean: “do you ever wear anything or wear your hair in a style that is meant to show a connection with the Caribbean or Africa?”.

<sup>23</sup> We link identity formation with homogamous marriages along ethnic and religious traits. It has indeed been extensively documented that inter-racial marriage is typically considered as a sign of inclination toward cultural assimilation (see, in particular, Al-Johar, 2005; Qian, 1999; Meng and Gregory, 2005; Lichter et al., 2007; Tucker and Mitchell-Kernan, 1990) and that marriage choices are at least in part determined by parents' preferences to socialize their children to their own trait (Bisin et al., 2004, and the evidence cited in Bisin and Verdier, 2000).



**Fig. 2.** (a) Proportions of ethnic identity (I) and homogamy rate (H) by neighborhood ethnic composition. Whole sample, (b) proportions of ethnic identity (I) and homogamy rate (H) by neighborhood ethnic composition, Muslim sample and (c) proportions of ethnic identity (I) and homogamy rate (H) by neighborhood ethnic composition, non-Muslim sample.

with stronger ethnic identities tend to live in more segregated neighborhoods is certainly not apparent in the raw data. On the contrary, homogamous marriages are indeed more prevalent in more segregated neighborhood, but the extent to which this is true seems to taper down as  $q$  increases: homogamy even declines for  $q \geq 33\%$ .<sup>24</sup>

One may think that this evidence is due to the Muslims in our sample. Indeed, a large debate has recently emerged in the popular press about the alleged specificity of Muslim immigrants with regard to the strength of their identity and their (lack

<sup>24</sup> The words segregation/segregated should be carefully interpreted here and in the rest of the paper: we refer to *more segregated neighborhoods* to mean neighborhoods with a higher proportion of the population of the same ethnicity. As we noted, highly segregated wards are not observed in the sample.

**Table 1**

Ethnic identity, homogamy and ethnic neighborhood composition – whole sample.

	(1): Dep. Var.: Ethnic identity measured by <i>importance of religion</i>		(2): Dep. Var.: Homogamy			
	(1)	(2)	(1)	(2)	(1)	(2)
Ward density of own ethnic group	0.0461*** (0.0156)	0.1081*** (0.0265)	0.0436*** (0.0166)	0.1355*** (0.0312)	0.0481*** (0.0169)	0.1390*** (0.0319)
Ward density of own ethnic group <sup>2</sup>	–0.0013*** (0.0004)	–0.0019** (0.0008)	–0.0014*** (0.0005)	–0.0027*** (0.0010)	–0.0015*** (0.0005)	–0.0029*** (0.0010)
<i>Individual controls</i>						
Age at arrival			0.0055 (0.0049)	0.0288*** (0.0099)	0.0042 (0.0049)	0.0305*** (0.0103)
Age at arrival			0.4078* (0.2396)	0.0062 (0.1792)	0.3656 (0.2273)	0.0334 (0.1788)
Age <sup>2</sup>			–0.0070* (0.0040)	–0.0008 (0.0027)	–0.0063* (0.0038)	–0.0010 (0.0027)
Female			0.0913 (0.0882)	0.0272 (0.1411)	0.0731 (0.0890)	0.1022 (0.1508)
Born in the UK			–6.5322* (3.5164)	–0.2273 (2.9235)	–5.8439* (3.3549)	–0.8417 (2.9436)
Arranged marriage			0.4712*** (0.0960)	1.0410*** (0.3494)	0.4468*** (0.0967)	0.9057** (0.3553)
Discrimination			0.1050 (0.1312)	–0.0803 (0.1874)	0.0945 (0.1318)	–0.1302 (0.1902)
Children			0.0562 (0.1537)	0.0008 (0.2007)	0.0740 (0.1559)	0.0476 (0.2040)
Years since arrival			–0.0294 (0.0196)	0.0486 (0.0363)	–0.0294 (0.0201)	0.0280 (0.0351)
Years since arrival <sup>2</sup>			0.0005 (0.0004)	–0.0014* (0.0007)	0.0004 (0.0004)	–0.0008 (0.0007)
British degree			0.0550 (0.1133)	–0.6510*** (0.1475)	0.0891 (0.1136)	–0.6177*** (0.1517)
British high education			–0.4770*** (0.1285)	–0.0833 (0.1612)	–0.4605*** (0.1295)	–0.1386 (0.1621)
Foreign education			–0.1913* (0.0978)	0.0639 (0.1717)	–0.1740* (0.0996)	–0.0260 (0.1743)
Employed			–0.2961*** (0.1000)	0.1892 (0.1573)	–0.2990*** (0.1109)	0.0824 (0.1728)
Manager			–0.1726 (0.2373)	–0.0637 (0.2829)	–0.1792 (0.2319)	0.0069 (0.2912)
Employee			–0.0834 (0.0934)	–0.3205* (0.1695)	–0.0840 (0.0943)	–0.3238* (0.1772)
House owner			–0.0946 (0.1093)	0.5326*** (0.1577)	–0.0710 (0.1102)	0.4882*** (0.1615)
<i>Contextual controls</i>						
English spoken at home					–0.2958** (0.1358)	–0.6141*** (0.1904)
English spoken at work					0.0695 (0.1239)	0.3542* (0.1904)
English spoken with friends					–0.1597 (0.1099)	0.2922 (0.1791)
Constant	–0.0739 (0.0907)	0.5870*** (0.1221)	0.4981* (0.2950)	–0.2440 (0.5439)	0.5645* (0.2960)	–0.3379 (0.5438)
Observations	1559	1559	1559	1559	1559	1559

Notes: Bivariate probit model estimation results. Coefficients and robust standard errors in parentheses are reported. Sampling weights are included.

\*\*\*  $p < 0.01$

\*\*  $p < 0.05$

\*  $p < 0.1$

of) assimilation tendencies.<sup>25</sup> Several of the ethnic groups for which we have data have in fact a significant Muslim population; notably Pakistani and Bangladeshi are predominantly Muslim, while Indians and African-Asian have substantial Muslim minorities. Furthermore, the FNSEM survey contains a direct question asking the respondent to identify his or her

<sup>25</sup> This position has been taken, in a rather extreme form, by several nationalist parties, e.g., the British National Party in England, the Lega in Italy, the Front National in France, Sverige Demokraterna in Sweden. Similar though less extreme positions have also been taken by center-right parties essentially all over Europe. A clear example of the inflamed rhetoric that often accompanies this debate is Fallaci (2006). See also the discussion in Sheikh (2005) for Muslims in the US, Bisin et al. (2008) for Muslims in the UK and Adida et al. (2010, 2016) for Muslims in France.

**Table 2**

Ethnic identity, homogamy and ethnic neighborhood composition – whole sample.

	(1): Dep. Var.: Ethnic identity measured by <i>wearing distinctive ethnic clothes</i>					
	(2): Dep. Var.: Homogamy					
	(1)	(2)	(1)	(2)	(1)	(2)
Ward density of own ethnic groups	0.0363** (0.0167)	0.0945*** (0.0332)	0.0371* (0.0198)	0.1230*** (0.0397)	0.0434** (0.0202)	0.1210*** (0.0408)
Ward density of own ethnic groups <sup>2</sup>	-0.0008* (0.0005)	-0.0017* (0.0010)	-0.0008 (0.0006)	-0.0022* (0.0012)	-0.0010* (0.0006)	-0.0022* (0.0013)
	(1): Dep. Var.: Ethnic identity measured by <i>school ethnic composition</i>					
	(2): Dep. Var.: Homogamy					
	(1)	(2)	(1)	(2)	(1)	(2)
Ward density of own ethnic groups	0.04190*** (0.0157)	0.1120*** (0.0268)	0.0431*** (0.0161)	0.1393*** (0.0313)	0.0425*** (0.0162)	0.1420*** (0.0321)
Ward density of own ethnic groups <sup>2</sup>	-0.0011** (0.0005)	-0.0020** (0.0008)	-0.0011** (0.0005)	-0.0028*** (0.000983)	-0.0011** (0.0005)	-0.0030*** (0.00102)
	(1): Dep. Var.: Ethnic identity measured by <i>inter-ethnic marriage</i>					
	(2): Dep. Var.: Homogamy					
	(1)	(2)	(1)	(2)	(1)	(2)
Ward density of own ethnic groups	0.0420*** (0.0162)	0.0999*** (0.0268)	0.0437** (0.0176)	0.1247*** (0.0316)	0.0420** (0.0177)	0.1299*** (0.0324)
Ward density of own ethnic groups <sup>2</sup>	-0.0007 (0.0005)	-0.0016* (0.0008)	-0.0010** (0.0005)	-0.0023** (0.00101)	-0.0009* (0.0005)	-0.0026** (0.0010)
<i>Control set for all specifications</i>						
Individual controls	No	No	Yes	Yes	Yes	Yes
Contextual controls	No	No	No	No	Yes	Yes

Notes: Bivariate probit model estimation results. Coefficients and robust standard errors in parentheses are reported. Sampling weights are included.

\*\*\*  $p < 0.01$

\*\*  $p < 0.05$

\*  $p < 0.1$

religious faith. Fig. 2b shows the data when restricting our sample to Muslims only, whereas Fig. 2c shows instead the picture when removing Muslim individuals from our sample. Although Muslims show higher homogamy rates, one can see that the general tendency in line with the entire sample, and that the evidence in its essence remains unchanged when removing the Muslims: no strong signs that people with stronger ethnic feelings live in more segregated neighborhood are revealed.

#### 4.3. Empirical results

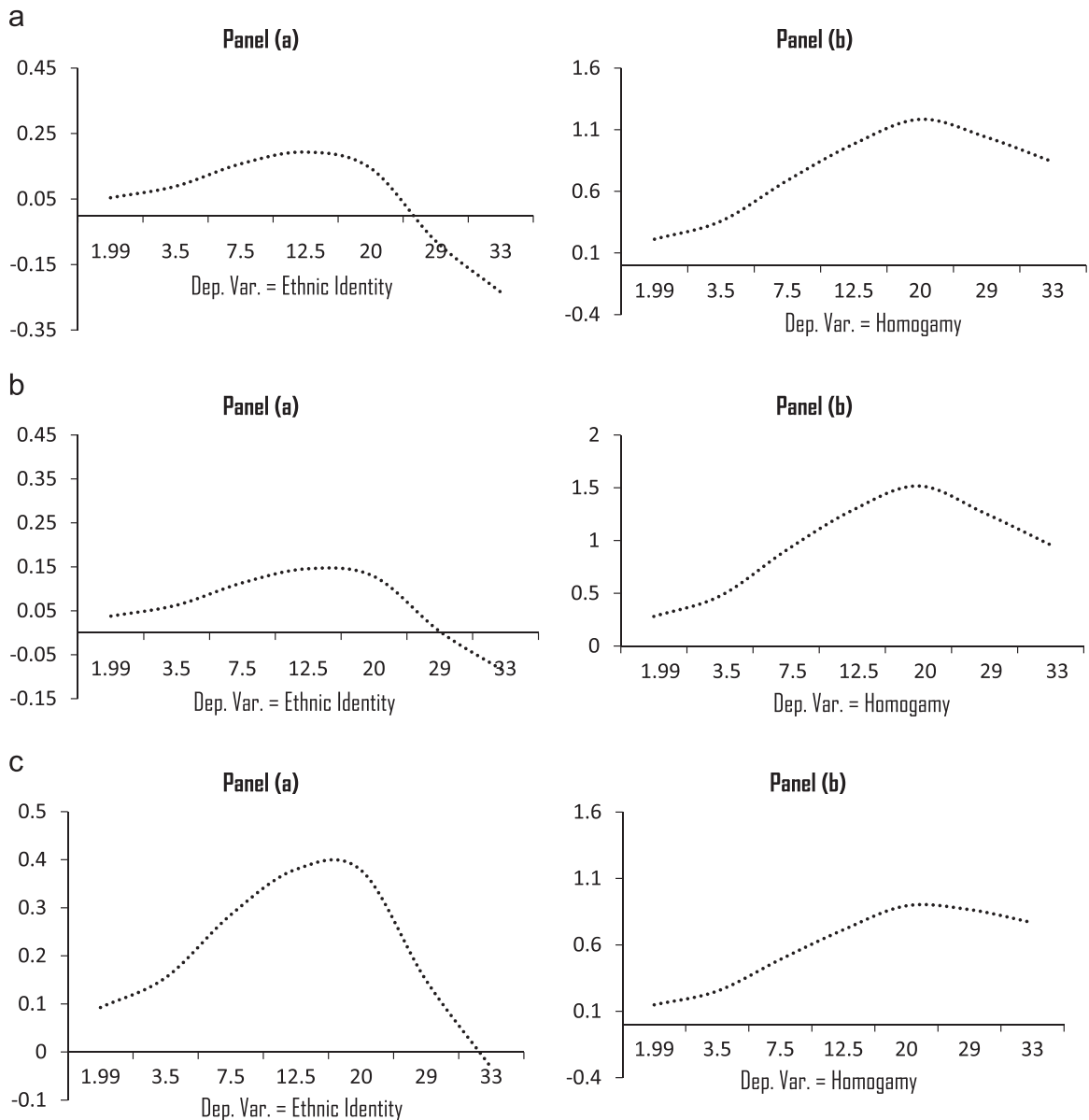
It is then of interest to present the results of a simple *bivariate probit regression*, looking at the correlation between ethnic identity and homogamy, and ethnic composition.<sup>26</sup> The regression analysis allows us to account formally for a non-linear relationship and to document the effects of an (increasing) set of control variables. We use alternative definitions of ethnic identity. Table 1 shows the complete list of estimation results when “importance of religion” is used as a proxy for ethnic identity, whereas Table 2 displays the same results when the three other measures of ethnic identity (*wearing distinctive ethnic clothes*, *school ethnic composition*, and *inter-ethnic marriage*) are used.<sup>27</sup>

We find that there is a positive and significant relationship between ethnic identity and ethnic neighborhood composition  $q$ . We also find significant non-linearities, i.e. the quadratic term in  $q$  is negative and significant. In particular, both identity and homogamy appear to be negatively related to ethnic composition for values of  $q$  greater than 20%. Fig. 3a confirms this result by depicting the estimated (non-linear) relationship between ethnic identity and ethnic neighborhood composition  $q$ , once the influence of our most extensive set of controls has been purged out.<sup>28</sup> These non-linearities suggest

<sup>26</sup> We employ a bivariate probit since, in the theoretical model of Section 3.2, ethnic identity and homogamy are chosen simultaneously. Therefore, the estimation results for the homogamy equation change accordingly to the proxy of ethnic identity used in the ethnic identity equation.

<sup>27</sup> In the probit estimations, we measure  $q$  as the fraction of *own ethnic group* in the neighborhood. The fraction of *all minority residents* in the neighborhood has been, however, included among the controls.

<sup>28</sup> This graph is depicted using “importance of religion” as a proxy for ethnic identity. The use of the other proxies leads to similar results. We have also performed our analysis using a multidimensional measure of ethnic identity, which summarizes the information contained in the available indicators. We have followed the standard approach in the sociological literature to derive quantitative information on sensitive topics using qualitative answers to a battery of related questions. This is a standard factor analysis, where the factor loadings of the different variables (questions) are used to derive the total score (multidimensional measure). The Cronbach- $\alpha$  measure is then used to assess the quality of the derived index. In our case, we obtain an  $\alpha$  equal to



**Fig. 3.** (a) Nonlinear effect of neighborhood ethnic composition on identity and homogeneity. Whole sample, (b) nonlinear effect of neighborhood ethnic composition on identity and homogeneity. Muslim sample and (c) nonlinear effect of neighborhood ethnic composition on identity and homogeneity. Non-muslim sample.

that ethnic identity is weaker in relatively more segregated neighborhoods, a result more consistent with *cultural distinction* than with *cultural conformity*.

Table 3 collects the results when we repeat our analysis on the restricted sample of Muslim respondents (713 individuals, roughly 45 percent of the whole sample). We maintain, however, the distribution by ethnic group as the relevant neighborhood composition variable in the identity formation and socialization processes. Descriptive statistics of our variables on this sub-sample can be found in the Data Appendix (Table A1). Table 4 shows instead the results when removing the Muslim sample. Fig. 3b and c depicts the corresponding picture of Fig. 3a for the Muslim sample and without Muslim sample. Even though the non-linear effect is more pronounced for the Muslim sample when ethnic identity is measured with homogeneity, there is no strong sign to conclude that the evidence is merely driven by those individuals.<sup>29</sup>

(footnote continued)

0.86 ( $0 \leq \alpha \leq 1$ ) indicating that the different items incorporated in the index have considerable internal consistency. We find that even this aggregate measure does not depend (qualitatively) differently on  $q$ .

<sup>29</sup> The evidence that is obtained when using the other measures of ethnic identity is qualitatively unchanged.

**Table 3**  
Ethnic identity, homogamy and ethnic neighborhood composition – Muslim sample.

	(1): Dep. Var.: Ethnic identity measured by <i>importance of religion</i> (2): Dep. Var.: Homogamy					
	(1)	(2)	(1)	(2)	(1)	(2)
Ward density of own ethnic group	0.0520** (0.0258)	0.128** (0.0499)	0.0342 (0.0266)	0.147** (0.0698)	0.0338 (0.0276)	0.1470** (0.0701)
Ward density of own ethnic group <sup>2</sup>	-0.00144** (0.0007)	-0.00309** (0.0014)	-0.0010 (0.0007)	-0.0036* (0.0020)	-0.0010 (0.0008)	-0.0038* (0.0020)
<i>Individual controls</i>						
Age at arrival			0.0053 (0.0081)	0.0366** (0.0164)	0.0044 (0.0081)	0.0361* (0.0185)
Age at arrival			0.2908 (0.6156)	0.4781 (0.7470)	0.2958 (0.5740)	0.7768 (0.8177)
Age <sup>2</sup>			-0.0052 (0.0112)	-0.0099 (0.0131)	-0.0056 (0.0105)	-0.0149 (0.0144)
Female			-0.2004 (0.1701)	-0.2315 (0.3035)	-0.1592 (0.1755)	-0.0960 (0.2953)
Born in the UK			-4.4350 (8.2325)	-9.9716 (10.1493)	-4.2484 (7.6234)	-14.0185 (11.1747)
Arranged marriage			0.4444*** (0.1455)	0.7115** (0.2857)	0.3629** (0.1476)	0.4822 (0.2972)
Discrimination			0.2863 (0.2576)	-0.1314 (0.4207)	0.2304 (0.2506)	-0.2232 (0.4853)
Children			0.4775* (0.2704)	1.0345*** (0.3577)	0.5130* (0.2633)	1.0239*** (0.3538)
Yearssince arrival			-0.0196 (0.0337)	-0.2984*** (0.1150)	-0.0284 (0.0336)	-0.2924*** (0.1079)
Years since arrival <sup>2</sup>			0.0001 (0.0008)	0.0060*** (0.0022)	0.0003 (0.0008)	0.0059*** (0.0021)
British degree			0.2038 (0.2338)	-0.4116 (0.2957)	0.1611 (0.2435)	-0.4188 (0.3152)
British high education			-0.3093 (0.2444)	-1.0057*** (0.3252)	-0.2354 (0.2490)	-0.9638*** (0.3187)
Foreign education			-0.1781 (0.1545)	-0.9195*** (0.2719)	-0.1444 (0.1588)	-0.9347*** (0.3213)
Employed			-0.1666 (0.1693)	-0.0379 (0.2747)	-0.2967 (0.1961)	0.1623 (0.3000)
Manager			-0.6177 (0.5023)	0.9321* (0.5499)	-0.4170 (0.5604)	0.8275* (0.4911)
Employee			-0.4116*** (0.1541)	-0.4908 (0.3102)	-0.3935** (0.1564)	-0.3788 (0.3559)
House owner			-0.1066 (0.1742)	0.5647* (0.3200)	-0.0294 (0.1724)	0.7104** (0.3558)
<i>Contextual controls</i>						
English spoken at home					-0.7231*** (0.2800)	-0.7322** (0.3624)
English spoken at work					0.3779* (0.1951)	-0.3399 (0.3291)
English spoken with friends					-0.2012 (0.1659)	-1.0207*** (0.3917)
Constant	0.506*** (0.165)	1.0259*** (0.2857)	0.6701 (0.4710)	3.493** (1.5701)	0.7263 (0.4698)	4.4347*** (1.5501)
Observations	713	713	713	713	713	713

Notes: Bivariate probit model estimation results. Coefficients and robust standard errors in parentheses are reported. Sampling weights are included.

\*\*\*  $p < 0.01$

\*\*  $p < 0.05$

\*  $p < 0.1$

Our data have some limitations. They provide a snapshot of the population and no causal claims can be made. In addition, the ethnic composition of the residential neighborhood is not reported as a continuous variable and measurement errors may arise when aggregating the data in the few categories reported in the data. In fact, the homogamy variable does not show large variations across the different categories for high levels of ethnic segregation. Also, we have no detailed information on individuals living in neighborhoods with segregation levels higher than 33%, and the overall sample size is

**Table 4**

Ethnic identity, homogamy and ethnic neighborhood composition – non-Muslim sample.

	(1): Dep. Var.: Ethnic identity measured by <i>importance of religion</i>		(2): Dep. Var.: Homogamy			
	(1)	(2)	(1)	(2)	(1)	(2)
Ward density of own ethnic group	0.0560*** (0.0196)	0.0974*** (0.0301)	0.0573*** (0.0204)	0.1240*** (0.0358)	0.0617*** (0.0207)	0.1241*** (0.0373)
Ward density of own ethnic group <sup>2</sup>	–0.0017*** (0.0006)	–0.0012 (0.0009)	–0.0018*** (0.000616)	–0.0020* (0.0012)	–0.0020*** (0.0006)	–0.0021 (0.0013)
<i>Individual controls</i>						
Age at arrival			0.0160** (0.0063)	0.0301** (0.0118)	0.0146** (0.0064)	0.0322*** (0.0124)
Age at arrival			0.7436* (0.3861)	–0.1107 (0.2027)	0.6954* (0.3733)	–0.0495 (0.2088)
Age <sup>2</sup>			–0.0120* (0.0063)	0.0008 (0.0029)	–0.0113* (0.0061)	0.0002 (0.0030)
Female			0.2370** (0.1069)	0.1515 (0.1621)	0.2127** (0.1076)	0.2450 (0.1776)
Born in the UK			–11.8778** (5.8572)	2.3888 (3.4520)	–11.0962** (5.6612)	1.2509 (3.5887)
Arranged marriage			0.2902** (0.1339)	5.3075*** (0.1953)	0.2893** (0.1342)	4.9851*** (0.1830)
Discrimination			0.0642 (0.1567)	–0.0723 (0.2082)	0.0604 (0.1574)	–0.1290 (0.2145)
Children			–0.1629 (0.1854)	–0.2119 (0.2377)	–0.1414 (0.1875)	–0.1862 (0.2471)
Years since arrival			–0.0172 (0.0256)	0.0898** (0.0431)	–0.0163 (0.0259)	0.0687 (0.0419)
Years since arrival <sup>2</sup>			0.0004 (0.0005)	–0.0021** (0.0009)	0.0003 (0.0006)	–0.0014* (0.0008)
British degree			0.1357 (0.1322)	–0.6721*** (0.1744)	0.1569 (0.1333)	–0.6550*** (0.1801)
British high education			–0.4181*** (0.1519)	0.0520 (0.1858)	–0.4037*** (0.1526)	–0.0063 (0.1876)
Foreign education			–0.1580 (0.1257)	0.2166 (0.2178)	–0.1427 (0.1274)	0.1408 (0.2362)
Employed			–0.1974 (0.1236)	0.2290 (0.1825)	–0.1739 (0.1357)	0.0886 (0.2012)
Manager			–0.1983 (0.2652)	–0.1319 (0.3173)	–0.2190 (0.2596)	–0.0793 (0.3254)
Employee			0.1148 (0.1192)	–0.1666 (0.1936)	0.1065 (0.1202)	–0.1183 (0.2042)
House owner			–0.0076 (0.1499)	0.6266*** (0.1803)	0.0080 (0.1514)	0.5369*** (0.1858)
<i>Contextual controls</i>						
English spoken at home					–0.1628 (0.1557)	–0.6982*** (0.2300)
English spoken at work					–0.0286 (0.1605)	0.5429** (0.2550)
English spoken with friends					–0.0947 (0.1465)	0.3614 (0.2527)
Constant	–0.3268*** (0.1115)	0.4712*** (0.1374)	–0.2978 (0.4074)	–1.0032 (0.6772)	–0.2294 (0.4075)	–1.2304* (0.7018)
Observations	846	846	846	846	846	846

Notes: Bivariate probit model estimation results. Coefficients and robust standard errors in parentheses are reported. Sampling weights are included.

\*\*\*  $p < 0.01$

\*\*  $p < 0.05$

\*  $p < 0.1$

not large. One implication of the small sample size is that, for example, we cannot run our analysis separately by ethnic groups (not even include controls for ethnicity in the same regression). This may be problematic, especially for the homogamy regression models. Indeed, it is well-known that in the UK homogamy rates are relatively low among the Black Caribbean (72%) and Chinese groups (58%), much higher among the South Asian groups (95–99%). In addition, we cannot exclude other sources of heterogeneity in the individual response to the social environment along other cultural dimensions.

Finally, our model does not produce the non-linear relationship between ethnic identity and neighborhood ethnic composition per se. Therefore, because of these caveats, our results should be taken with caution and our evidence should be considered as merely suggestive. Our analysis suggests that ethnic identities might be more intense in mixed rather than in segregated neighborhoods, which is consistent with the *cultural distinction* model.

## 5. Discussion and policy implications

Our analysis suggests that integration policies favoring the formation of less segregated neighborhoods might trigger more intense ethnic identities. In this respect, our results may offer a perspective to understand why the different integration policies implemented in the US and in Europe seem to have small effects. Indeed, mixing policies, which include school busing, affirmative action in public schools and in the workplace, forced integration of public housing, and laws barring discrimination in housing and employment,<sup>30</sup> have often had limited effects and are even being at times opposed by the same minority groups in whose interest they have been pursued (see, e.g., [Jacoby, 1998](#); [Thernstrom and Thernstrom, 2002](#)), consistently with the view that identity formation mechanisms are driven by *cultural distinction*.

James Coleman, for instance, fifteen years after the Coleman Report in 1966, which originally proposed busing, admitted that, “the assumption that busing would improve achievement of lower-class black children has now been shown to be fiction” (cited in [Jacoby, 1999](#)).<sup>31</sup> Moving to Opportunity (MTO) programs in the United States that relocate families from high- to low-poverty neighborhoods (and from racially segregated to mixed neighborhoods) also have had positive but arguably small effects (see, in particular, [Ludwig et al., 2001](#); [Kling et al., 2005](#)).<sup>32</sup> Similarly, the Toronto housing program where adults were assigned as children to different residential housing projects ([Oreopoulos, 2003](#)) did not give the expected results in terms of education outcomes. In Europe different integration policies and ambitious social programs have been implemented in urban areas where immigrants live but they have had also limited results. This is the case, for instance, for the creations of Zones of Educational Priority (ZEP) and for the rehabilitation of bleak housing projects in immigrant neighborhoods under the guise of urban policy (*politique de la ville*) in France.<sup>33</sup> Finally, even racially integrated schools have recently lost much of their appeal in African-American communities (see, e.g., the ethnographic study of [Gussin Paley, 1995](#)).

Far from supporting policies to establish segregated neighborhoods, in this paper, we simply document that the effect of integrated neighborhood on identity formation and socialization might be perverse, because of *cultural distinction*.

## Appendix A. Data appendix

See [Table A1](#).

<sup>30</sup> See [Lang \(2007\)](#) for an overview of these policies in the US.

<sup>31</sup> The failure of the busing and other civil right policies is certainly also due to the whites' flight from de-segregated schools and neighborhoods.

<sup>32</sup> There are, of course, other complementary mechanisms that could explain why the MTO programs had small effects. It is indeed possible that it is the loss of social networks that makes this policy relatively inefficient. A recent book ([De Souza Briggs et al., 2010](#)) evaluating the MTO programs shows that poor black families who move to richer areas tend to mostly interact with their old friends (i.e. their old social networks) from their old “bad” neighborhoods. Based on interviews and case studies, the authors claim that this may explain the relative small effects of this policy. Another explanation for the relative failure of MTO programs given by [Quigley and Raphael \(2008\)](#) is that families move from very poor to poor neighborhoods and thus the interactions in the new neighborhood is not that beneficial. Using data on adolescents in the US (AddHealth data), [Weinberg \(2010\)](#) show that individuals associate with people whose behaviors and characteristics are similar to their own and this tendency is stronger in large groups. This suggests that the MTO types of policies can have small effects because the people who move to richer areas only interact with similar types of people and not necessary with those who could generate positive externalities.

<sup>33</sup> See, for example, [Benabou et al. \(2009\)](#) for an evaluation of the ZEP and [Brubaker \(2001\)](#) who compares the different ways of assimilating ethnic minorities in France, Germany, and the US.



**Table A1**  
Description of data.

Variable	Explanation of the variable	Whole sample n.obs: 1559		Muslim sample n.obs: 713	
		Mean	St.dev.	Mean	St.dev.
<i>Main variables</i>					
Importance of religion	In the text	0.61	0.49	0.79	0.41
Homogamy	In the text	0.92	0.27	0.97	0.17
Ward density of own ethnicity	In the text	13.60	10.76	15.04	11.23
<i>Individual controls</i>					
Age at arrival	Respondent's age in years at arrival in the UK	21.15	10.38	20.49	9.63
Age	Respondent's age in years	41.37	13.09	39.44	12.84
Female	Dummy variable taking value one if the respondent is female	0.47	0.50	0.46	0.50
Born in the UK	Dummy variable taking value one if the respondent is born in the UK	0.10	0.30	0.06	0.26
Arranged Marriage	Dummy variable taking value one if the husband/wife of the respondent has been chosen by the parents	0.37	0.48	0.53	0.50
Discrimination	Dummy variable taking value one if the respondent had been insulted or threatened in the last year for reasons to do with race or color	0.10	0.30	0.09	0.28
Children	Dummy variable taking value one if the respondent has children	0.91	0.28	0.93	0.25
Years since arrival	Number of years since respondent's arrival in the UK	20.22	11.42	18.96	10.63
British degree	Dummy variable taking value one if the respondent has a UK degree	0.21	0.41	0.09	0.28
British high education	Dummy variable taking value one if the respondent has a UK O-level (or equivalent) or above qualification	0.16	0.37	0.08	0.26
Foreign education	Dummy variable taking value one if the respondent has a qualification achieved abroad	0.28	0.45	0.26	0.44
Employed	Dummy variable taking value one if the respondent is employed	0.47	0.50	0.29	0.45
Manager	Dummy variable taking value one if the respondent is a manager	0.03	0.16	0.01	0.12
Employee	Dummy variable taking value one if the respondent is an employee	0.57	0.50	0.42	0.49
House owner	Dummy variable taking value one if the household owns (or is buying) the accommodation	0.76	0.43	0.67	0.47
<i>Contextual controls</i>					
English spoken at home	Dummy variable taking value one if English is the language normally spoken at home with family members (who are older) by the respondent	0.12	0.33	0.07	0.25
English spoken with friends	Dummy variable taking value one if English is the language normally spoken with friends (outside work) by the respondent	0.51	0.50	0.45	0.50
English spoken at work	Dummy variable taking value one if English is the language normally spoken at work by the respondent	0.48	0.50	0.39	0.49

## Appendix B. Supplementary data

Supplementary data associated with this paper can be found in the online version at <http://dx.doi.org/10.1016/j.euroecorev.2016.01.006>.

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