

Cultural integration: The case of Muslim Immigrants in the U.K.

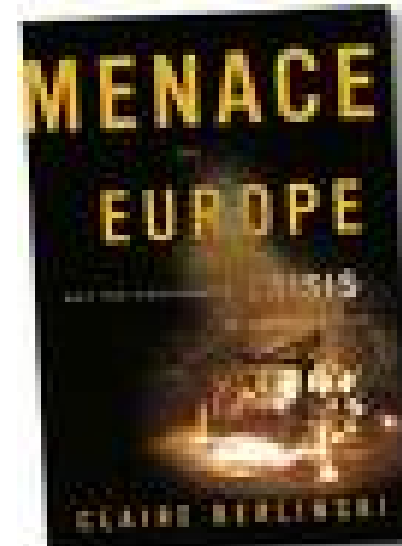
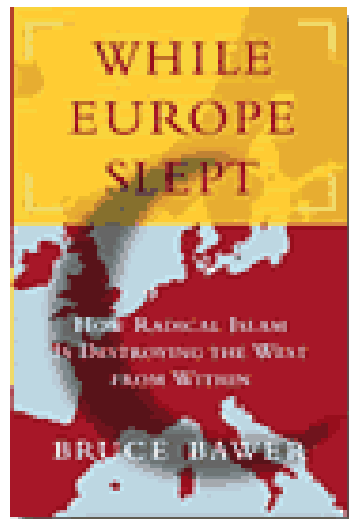
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Will they ever integrate?



A Parenthesis on modeling cultural transmission, socialization, integration, identity.....

- Based on the work with Thierry Verdier (PSE, CEPR) and with Thierry Verdier and Giorgio Topa (NY Fed)

Two possible types of cultural traits in the population, $\{a, b\}$.

The fraction of individuals with trait $i \in \{a, b\}$ is q^i .

‘Direct vertical’ socialization to the parent’s trait, say i , occurs with probability $d^i(q^i)$.

If a child from a family with trait i is not directly socialized, which occurs with probability $1 - d^i(q^i)$, he/she picks the trait of a role model chosen randomly in the population (i.e., he/she picks trait i with probability q^i and trait $j \neq i$ with probability $q^j = 1 - q^i$).

Let P^{ij} denote the probability that a child from a family with trait i is socialized to trait j :

$$P^{ii} = d^i(q^i) + (1 - d^i(q^i))q^i \quad (1)$$

$$P^{ij} = (1 - d^i(q^i))(1 - q^i) \quad (2)$$

The dynamics of the fraction of the population with trait i , in the continuous time limit is:

$$\dot{q}^i = q^i(1 - q^i)[d^i(q^i) - d^j(1 - q^i)] \quad (3)$$

Definition. Cultural Substitution. *Vertical cultural transmission and oblique cultural transmission are cultural substitutes for agent i (or, equivalently, $d^i(q^i)$ satisfies the cultural substitution property) if*

$d^i(q^i)$ is a continuous, strictly decreasing function in q^i , and, moreover, $d^i(1) = 0$.

Proposition 1. *Suppose vertical and oblique cultural transmission are cultural substitutes for both groups a and b. Then, $(0, 1, q^{i*})$ are the stationary states of (3), and $0 < q^{i*} < 1$. Moreover, $q^i(t, q_0^i) \rightarrow q^{i*}$, globally, for any $q_0^i \in (0, 1)$.*

Every adult agent chooses $x \in X$ to maximize preferences $u^i : X \rightarrow \mathbb{R}$, for $i \in \{a, b\}$.

Let V^{ij} denote the utility to a type i parent of a type j child, $i, j \in \{a, b\}$. The expected lifetime gains (abstracting from socialization costs) of a family of type i at time t are then:

$$u^i(x) + (P^{ii}V^{ii} + P^{ij}V^{ij})$$

Imperfect Empathy: For all $i, j \in \{a, b\}$, $V^{ij} = u^i(x^j)$, where $x^j = \operatorname{argmax}_{x \in X} u^j(x)$, and $x^a \neq x^b$.

d^i is the probability of direct socialization of parents with trait i to the i trait; a map $D : \mathbb{R}_+^n \times [0, 1] \rightarrow [0, 1]$ represents the ‘production function’ of direct socialization:

$$d^i = D(\tau^i, q^i) \tag{4}$$

Socialization is costly. Let $C(\tau^i)$ denote socialization costs.

For any $i \in \{a, b\}$:

- i) the utility function $u^i(x)$ is \mathcal{C}^2 , monotonic increasing and strictly concave, and the choice set X is convex and compact;
- ii) the map D is \mathcal{C}^2 , strictly increasing and strictly quasi-concave in τ^i ; moreover, $D(0, q^i) = 0, \forall q^i \in [0, 1]$;
- iii) the map C is \mathcal{C}^2 , strictly increasing and strictly quasi-convex; moreover, $C(0) = 0$, and $\frac{\partial C(0)}{\partial \tau^i} = 0$.

Parents of type i choose $\tau^i \in \mathfrak{R}_+^n$, and $x^i \in X$ to maximize:

$$u^i(x^i) - C(\tau^i) + (P^{ii}V^{ii} + P^{ij}V^{ij}) \text{ s. t. 1), 2), and (4)} \quad (5)$$

The dynamics of the fraction of the population with cultural trait i is then determined by equation (3) evaluated at $d^k(q^i) = d(q^i, \Delta V^i)$

Proposition *Under Assumption 1 and 2, $d(q^i, \Delta V^i)$ satisfies the cultural substitution property if C and D are homothetic in τ^i , and*

$$\frac{\partial D(\tau^i, q^i)}{\partial q^i} \leq 0 \tag{6}$$

In particular, the cultural substitution property holds if direct socialization is independent of q^i .

Direct socialization is driven only by an effort variable, τ^i , and there are no interactions between society at large and direct vertical socialization: $d^i = D(\tau^i) = \tau^i$.

If preferences and socialization costs satisfy Assumption oblique and direct vertical cultural transmission are cultural substitutes.

Homogamous marriages only are endowed with a direct socialization technology.

The altruistic utility for each parent in an homogamous family with type i is:

$$W^i(q^i) = \max_{\tau^i} [\tau^i + (1 - \tau^i)q^i]V^{ii} + (1 - \tau^i)(1 - q^i)V^{ij} - H(\beta\tau^i). \quad (8)$$

The altruistic utility for each parent in an heterogamous family is:

$$q^iV^{ii} + (1 - q^i)V^{ij}. \quad (9)$$

With probability α^i an agent of type i (trait $i \in \{a, b\}$) enters the restricted pool and is married homogamously; with probability $1 - \alpha^i$ an agent of type i enters a common pool made of all individuals who have not been matched in marriage in their own restricted pools.

In the common pool individuals match randomly. Let A^i be the fraction of individuals of type i who are matched in their restricted pool: the probability an individual of type i in the common unrestricted marriage pool is matched in marriage with an individual of the same type is then $\frac{(1-A^i)q^i}{(1-A^i)q^i + (1-A^j)(1-q^i)}$, and the probability of homogamous marriage of an individual of type i is given by

$$\pi^i(\alpha^i, A^i, A^j, q^i) = \alpha^i + (1 - \alpha^i) \frac{(1 - A^i)q^i}{(1 - A^i)q^i + (1 - A^j)(1 - q^i)}. \quad (10)$$

Individuals of type i can affect the probability of being matched in their restricted pool by choosing α^i at a cost $C(\alpha^i)$.

Back to the Muslims in U.K.

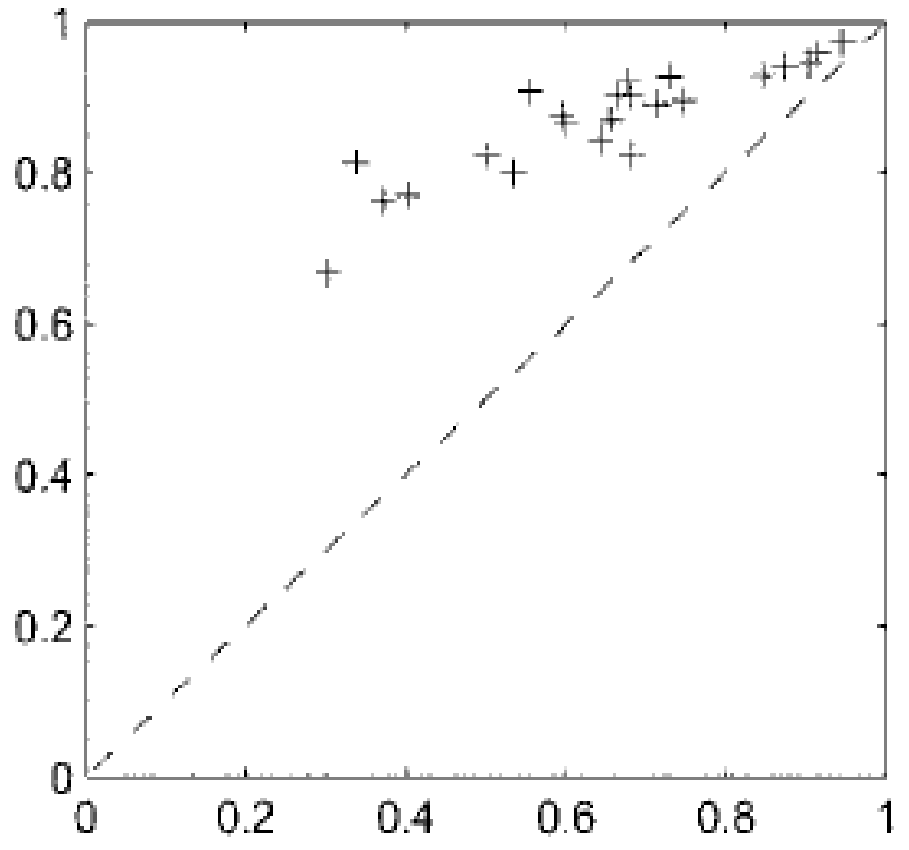
Raw data: FNSEM on Carribean, Indian, Pakistani, African-Asian, Bangladeshi, Chinese in U.K. 1993-94

Average homogamy rates in FNSEM data (standard deviation)

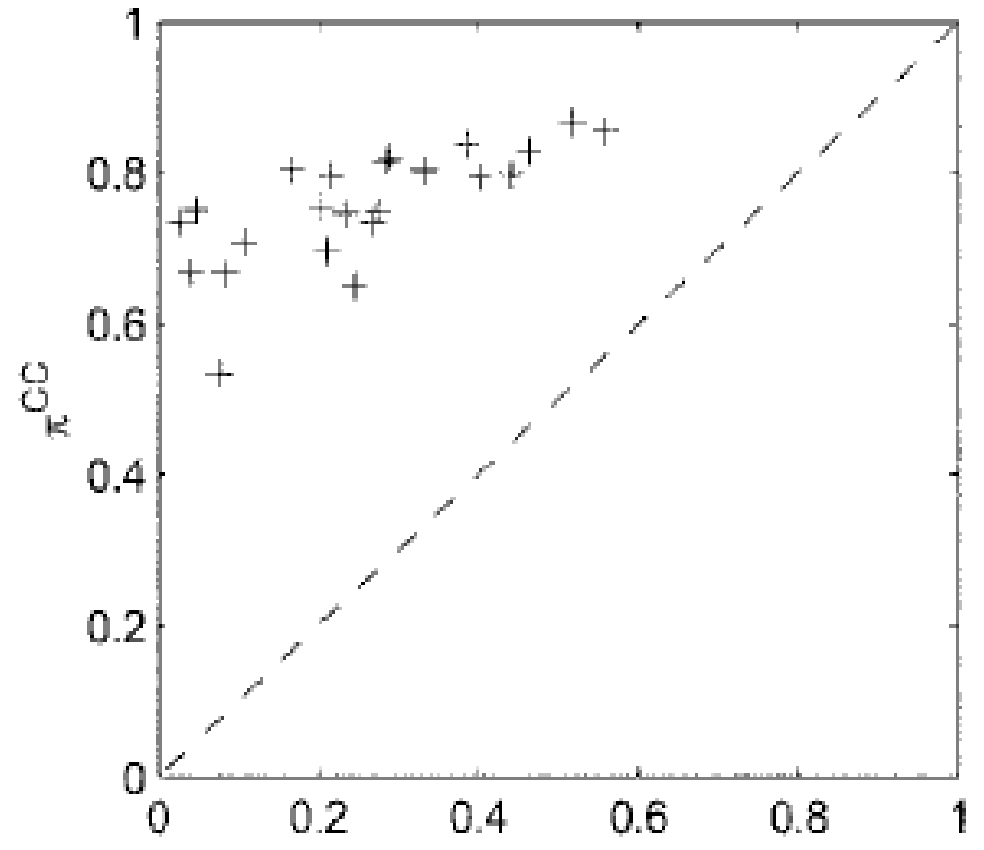
	Muslims	Non-Muslims
First generation	88.6% (.19)	75.9% (.45)
Second generation	84.1% (.38)	65.1% (.51)

Homogamy rates: Protestants and Catholics in U.S. by state, (GSS data in Bisin, Topa, Verdier 2004)

Protestants



Catholics



Historical homogamy rates: U.S. 1880-1990

Tassi di omogamia, U.S. 1910-1990

		donne					uomini				
	1910	1920	1960	1970	1990	1910	1920	1960	1970	1990	
Messicani											
1° Gen	94	94	79	78	91	94	94	79	76	92	
2° Gen	82	78	65	59	74	49	70	63	55	74	
Svedesi											
1° Gen	88	81	62	48	//	91	80	52	44	//	
2° Gen	45	38	20	16	//	37	34	15	12	//	
Polacchi											
1° Gen	98	95	73	69	//	96	94	70	63	//	
2° Gen	80	74	39	35	//	67	70	37	32	//	
Irlandesi											
1° Gen	78	73	62	52	//	85	81	67	59	//	
2° Gen	42	37	19	16	//	44	39	18	15	//	
Italiani											
1° Gen	100	99	89	84	//	98	95	83	76	//	
2° Gen	84	82	57	51	//	38	77	47	41	//	

Identity: FNSEM survey data in U.K. 1993-94

⁷The precise questions are the following ones: (i) *Is religion to the way you live your life not at all important, not very important, fairly important, or very important?*; (ii) *If a close relative were to marry a white person would you, not mind, mind only a little, mind, mind very much?*; (iii) *If the available schools were similar in other ways, what proportion of one's ethnic group would you like in your children's school, no preference, fewer than a half, about a half, more than a half.*

Identity: FNSEM survey data in U.K. 1993-94 – cont.ed

Table 1: Description of data

	<i>Muslim</i>		<i>Non-Muslim</i>	
	n.obs.: 2,369		n.obs.: 3,594	
<i>Variable</i>	<i>Mean</i>	<i>St.dev.</i>	<i>Mean</i>	<i>St.dev.</i>
Importance of religion***	79.15	13.32	42.05	16.66
Attitude towards inter-marriage***	70.10	10.42	36.91	12.43
Importance of racial composition in schools***	64.65	21.34	33.45	15.35

Importantly, the stronger resistance to integration which our data documents for Muslims immigrants in U.K. is hardly explained by a difference in the time spent in the U.K. that is (on average) not statistically different between Muslims and non-Muslims. However, on average Muslims are less educated than non-Muslims, with a lower household income, and with more than a double probability to be unemployed. Muslims also live in more ethnic segregated areas, which have higher unemployment rates. To what extent these and other demographic and socio-economic contextual characteristics of Muslim immigrants in the U.K. explain their differential attachment to their religion and associated cultural traits?

The determinants of identity: FENSEM, U.K. 93-4

- (1) Dependent variable: importance of religion
- (2) Dependent variable: attitude towards inter-marriage
- (3) Dependent variable: importance of racial composition in schools

Variable	(1)		(2)		(3)	
	Muslim	Non-Muslim	Muslim	Non-Muslim	Muslim	Non-Muslim
	Marginal effect (<i>p</i> -value)	Marginal effect (<i>p</i> -value)	Marginal effect (<i>p</i> -value)	Marginal effect (<i>p</i> -value)	Marginal effect (<i>p</i> -value)	Marginal effect (<i>p</i> -value)
Age at arrival	-0.0069 (0.1754)	0.0081 (0.3302)	-0.0046 (0.2317)	0.0058 (0.3993)	-0.0106 (0.2175)	0.0098 (0.3630)
Female	0.0177 (0.2155)	-0.0191 (0.3144)	0.0217 (0.2015)	0.0112 (0.3011)	0.0451 (0.2661)	-0.0319 (0.3331)
Born in the U.K.	-0.0089** (0.0151)	-0.0189** (0.0188)	-0.0133** (0.0120)	-0.0389*** (0.0085)	-0.0210** (0.0251)	-0.0418** (0.0388)
Arranged marriage	0.0119** (0.0153)	0.0236 (0.1221)	0.0311** (0.0103)	0.0523 (0.0666)	0.0541** (0.0111)	0.1023 (0.1002)
Discrimination	0.0672** (0.0450)	0.0405** (0.0379)	0.0650** (0.0451)	0.0398** (0.0307)	0.0965*** (0.0074)	0.0554*** (0.0037)
Children	0.0759** (0.0120)	0.0605** (0.0295)	0.0799** (0.0115)	0.0669** (0.0209)	0.1575** (0.0120)	0.1306** (0.0129)
Years since arrival	-0.0070* (0.0722)	-0.0212** (0.0190)	-0.0079 (0.1022)	-0.0259** (0.0112)	-0.0107 (0.1001)	-0.0475** (0.0201)

No British education	0.0210 (0.4039)	0.0599 (0.2997)	0.0249 (0.4153)	0.0665 (0.2655)	0.1024 (0.3970)	0.1575 (0.2876)
British basic education	0.0002 (0.3645)	0.0015 (0.2370)	0.0001 (0.3224)	0.0010 (0.2095)	0.0100 (0.2465)	0.0201 (0.1720)
British high education	-0.0513 (0.3457)	-0.0807*** (0.0010)	-0.0533 (0.3045)	-0.0888*** (0.0007)	-0.0633 (0.4335)	-0.1070*** (0.0026)
Foreign education	0.0346 (0.2425)	0.0501*** (0.0032)	0.0366 (0.2624)	0.0601** (0.0123)	0.0469 (0.2825)	0.0580** (0.0223)
Unemployed	-0.0542 (0.2190)	0.1003 (0.3971)	-0.0492 (0.1990)	0.0985 (0.3884)	-0.0742 (0.2905)	0.1440 (0.4559)
Self-employed	0.0105 (0.2219)	0.0048 (0.2950)	0.0118 (0.3192)	-0.0085 (0.3504)	0.0105 (0.1870)	-0.0034 (0.2512)
Manager	0.0651** (0.0235)	-0.0499* (0.0813)	0.0617** (0.0204)	-0.0485** (0.0487)	0.0717** (0.0211)	-0.0928*** (0.0078)
Employee	0.0672 (0.5020)	0.0605 (0.6042)	0.0702 (0.5332)	0.0635 (0.6217)	0.1720 (0.5920)	0.1663 (0.6817)
No parents	0.0508** (0.0144)	0.0122 (0.1121)	0.0598** (0.0164)	0.0169 (0.1320)	0.0435** (0.0105)	0.0115 (0.1066)
Parents' physical contacts	0.0464** (0.0130)	0.0158 (0.1765)	0.0699*** (0.0099)	0.0300 (0.1585)	0.0434** (0.0333)	0.0113* (0.0918)
Parents' telephone calls	0.0349** (0.0405)	0.0070 (0.3345)	0.0432** (0.0345)	0.0175 (0.4053)	0.0243** (0.0459)	0.0037 (0.3445)
Parents' letters	0.0708*** (0.0076)	0.0205** (0.0302)	0.0678** (0.0162)	0.0211** (0.0212)	0.0978*** (0.0062)	0.0520*** (0.0012)

English spoken at home (older)	-0.0999** (0.0177)	-0.0755** (0.0209)	-0.1091** (0.0195)	-0.0555** (0.0225)	-0.1901*** (0.0003)	-0.1555** (0.0129)
English spoken at home (younger)	-0.0458** (0.0117)	-0.0321 (0.1436)	-0.0576** (0.0312)	-0.0389 (0.1036)	-0.0596** (0.0412)	-0.0369 (0.1553)
English spoken at work	0.0707* (0.0762)	0.0198* (0.0798)	0.0697* (0.0902)	0.0210* (0.0989)	0.0509* (0.0602)	0.0102* (0.0799)
English spoken with friends	-0.0672** (0.0306)	-0.0340** (0.0478)	-0.0671*** (0.0077)	-0.0414** (0.0500)	-0.0772*** (0.0076)	-0.0540** (0.0482)
Household income	0.0009** (0.0201)	-0.0005 (0.4557)	0.0017** (0.0253)	-0.0010 (0.4253)	0.0019** (0.0121)	-0.0015 (0.4075)
Discrimination of own ethnicity	0.0801*** (0.0066)	0.0500** (0.0135)	0.0880*** (0.0026)	0.0560*** (0.0093)	0.1400*** (0.0026)	0.1131*** (0.0035)
Ward density of own ethnic group	-0.0193** (0.0128)	-0.0098** (0.0345)	-0.0173** (0.0180)	-0.0086** (0.0359)	-0.0201** (0.0185)	-0.0058** (0.0450)
Ward unemployment rate	-0.0280** (0.0413)	0.0199 (0.3269)	-0.0289** (0.0430)	0.0189 (0.3355)	-0.0442** (0.0370)	0.0192 (0.3009)

Notes:

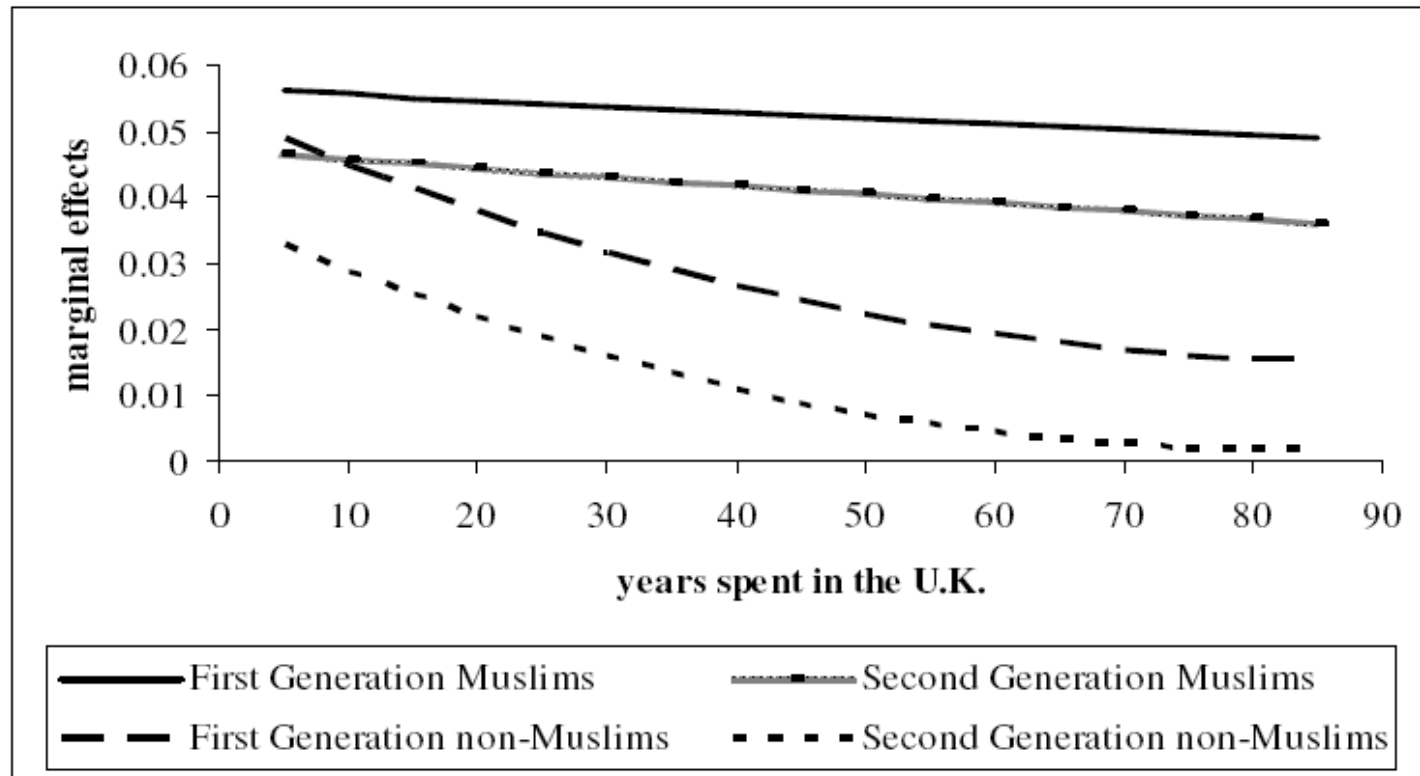
- marginal effects at the sample means
- * significant at 10%; ** significant at 5%; *** significant at 1%
- a constant and regional dummies are included
- results weighted for population proportions

Summary: specific/characteristic elements of the integration pattern of Muslim immigrants

Stronger identity associated to:

- High level of education and/or high job qualification/high income
- Low unemployment rate in nbhd
- Younger at arrival in U.K.
- More integrated nbhd, English at work
- Instances of discrimination

Integration patterns over time



Notes:

- The marginal effects show the increase/decrease in the average probability of having a strong religious identity following a one-year increase in the time spent in the U.K. The average probability, i.e. calculated at the sample means of all variables, is equal to 5.7% and 5.3% for Muslims and non-Muslims respectively.

Discussion and related literature

- Manning-Roy (2006): no culture clash in migrants – in general and with Muslims in particular – in U.K. Labor Force data, 2001
identity measured from “What do you consider your national identity to be?”
- Constant-Gataullina-Zimmermann-Zimmermann (2006): more similar methodology and results to our paper in German Socioeconomic Panel 2001

How to handle the possible endogeneity of nbhd choice

area. We therefore select a sub-sample of respondents composed of individuals *(i)* who state that the neighborhood in which they reside is “poor” for “being with other people of their own ethnic group” but nonetheless they declare they do not wish to move; and individuals *(ii)* who state that the neighborhood in which they reside is “good” for “being with other people of their own ethnic group” but nonetheless they declare they do wish to move. These two groups contain the individuals for whom, in our interpretation, the choice of the residential neighborhood is likely to be exogenous with respect to their concerns about the ethnic composition of the neighborhood.

Table 4: The development of an identity**Robustness check**

Sub-sample (a): individuals declaring that their residential area is poor for being with other people of their own ethnic group but prefer to stay

Sub-sample (b): individuals declaring that their residential area is good for being with other people of their own ethnic group and are willing to move out from the area

Dependent variable: importance of religion

Variable	Muslim		Non-Muslim	
	(a)	(b)	(a)	(b)
	Marginal effect (<i>p</i> -value)	Marginal effect (<i>p</i> -value)	Marginal effect (<i>p</i> -value)	Marginal effect (<i>p</i> -value)
Age at arrival	-0.0016 (0.1859)	0.0089 (0.3530)	-0.0006 (0.2875)	0.0018 (0.3930)
Female	0.0265 (0.2644)	-0.0199 (0.3445)	0.0499 (0.2699)	-0.0355 (0.3433)
Born in the U.K.	-0.0109** (0.0215)	-0.0185** (0.0218)	-0.0255** (0.0332)	-0.0421** (0.0403)
Arranged marriage	0.0105** (0.0165)	0.0213* (0.0462)	0.0505** (0.0222)	0.0782 (0.1011)
Discrimination	0.0882** (0.0345)	0.0664** (0.0387)	0.0779** (0.0179)	0.0455** (0.0203)

Children	0.0799** (0.0132)	0.0805** (0.0299)	0.1590** (0.0220)	0.1430** (0.0341)
Years since arrival	-0.0087 (0.1072)	-0.0210** (0.0218)	-0.0110 (0.1199)	-0.0405** (0.0321)
No British education	0.0288 (0.5050)	0.0759 (0.3529)	0.1202 (0.4947)	0.1457 (0.3857)
British basic education	0.0006 (0.3664)	0.0019 (0.2537)	0.0111 (0.2669)	0.0255 (0.1972)
British high education	-0.0544 (0.3845)	-0.0980*** (0.0100)	-0.0763 (0.4533)	-0.1115*** (0.0079)
Foreign education	0.0304 (0.3472)	0.0515** (0.0203)	0.0408 (0.3282)	0.0445** (0.0278)
Unemployed	-0.0454 (0.4210)	0.1100 (0.5359)	-0.0702 (0.3829)	0.1344 (0.4995)
Self-employed	0.0120 (0.3322)	0.0004 (0.3995)	0.0099 (0.2887)	-0.0013 (0.3925)
Manager	0.0765** (0.0323)	-0.0564* (0.0801)	0.0799** (0.0299)	-0.0892** (0.0207)
Employee	0.0607 (0.5402)	0.0609 (0.6099)	0.1507 (0.5992)	0.1466 (0.6681)
No parents	0.0450* (0.0514)	0.0102 (0.1441)	0.0224** (0.0166)	0.0091 (0.1106)

Parents' physical contacts	0.0488** (0.0210)	0.0145 (0.1876)	0.0543** (0.0493)	0.0188 (0.1309)
Parents' telephone calls	0.0300* (0.0514)	0.0067 (0.3450)	0.0240** (0.0499)	0.0075 (0.3564)
Parents' letters	0.0728*** (0.0087)	0.0229** (0.0390)	0.0917** (0.0106)	0.0542*** (0.0081)
English spoken at home (older)	-0.0918** (0.0215)	-0.0798** (0.0277)	-0.1855*** (0.0023)	-0.1501** (0.0219)
English spoken at home (younger)	-0.0401** (0.03311)	-0.0298 (0.1743)	-0.0598* (0.0515)	-0.0386 (0.1885)
English spoken at work	0.0790* (0.0876)	0.0219* (0.0979)	0.0560* (0.0760)	0.0120* (0.0870)
English spoken with friends	-0.0697** (0.0399)	-0.0310* (0.0549)	-0.0977** (0.0120)	-0.0584** (0.0500)
Household income	0.0018**	-0.0002	0.0025**	-0.0011

	(0.0320)	(0.4995)	(0.0412)	(0.4755)
Discrimination of own ethnicity	0.0822**	0.0510**	0.1440**	0.1199**
	(0.0165)	(0.0251)	(0.0102)	(0.0150)
Ward density of own ethnic group	-0.0219**	-0.0089**	-0.0250**	-0.0065*
	(0.0251)	(0.0453)	(0.0185)	(0.0501)
Ward unemployment rate	-0.0268**	0.0201	-0.0404**	0.0190
	(0.0451)	(0.3526)	(0.0498)	(0.3955)

Notes:

- marginal effects at the sample means
- * significant at 10%; ** significant at 5%; *** significant at 1%
- a constant and regional dummies are included
- results weighted for population proportions