

# Is Britain Pulling Apart? Homophily and Homogamy in Contemporary Britain

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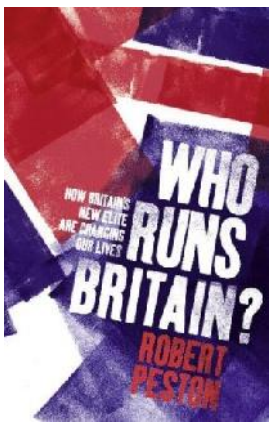
Sponsored by the ERSC Secondary Data Analysis Initiative  
Phase 1 project '*Is Britain pulling apart? Analysis of  
generational change in social distances*'

<http://www.camsis.stir.ac.uk/pullingapart>

<http://www.twitter.com/pullingapart>

<http://pullingapartproject.wordpress.com/>

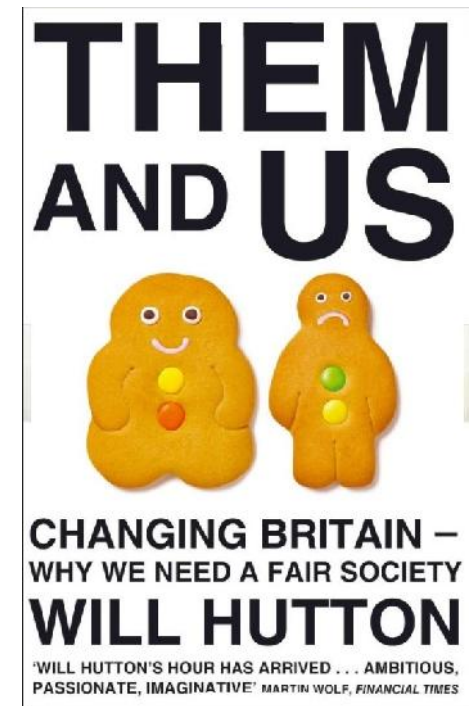
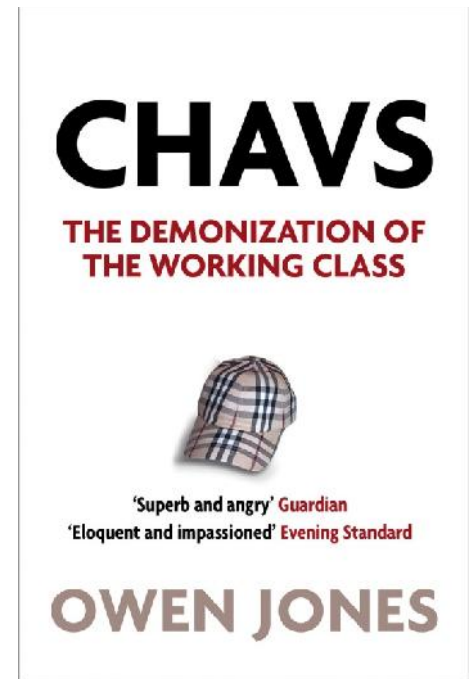




# Divided Britain

- Popular Social Science publications portray Britain as divided, but where is the dividing line?
  - Bankers vs rest (Hutton, 2011)
  - Politicians/companies vs rest (Peston, 2008)
  - Rest vs working classes (Jones, 2011)
- Strong public debate, often lacking evidence, on scale of social divisions
- Commonality of argument leads to perception amongst informed public that Britain is divided

<http://www.camsis.stir.ac.uk/pullingapart>



# Evidence of 'divided Britain'

- Ethnicity/immigration?
  - Yes: media/politicians talk of immigrant influxes, concentrated in estates/wards
  - No: academics refute this (Finney & Simpson, 2009; Farley & Blackman, 2014)
  - No: rise in multi-ethnic households & people with dual ethnicity (Jivraj, 2012)
- Politically
  - Yes: Media report new cleavages by new social movements (i.e., rise of UKIP)
  - Yes: Academics note greater geographical voting segregation (Dorling, 2011)
  - No: Class dealignment in voting (Evans & Tilley, 2011)
- Socio-economically
  - Yes: Increased income & social inequality, north/south and rural/urban divides (Dorling, 2011)
  - No: stability in social mobility (Lambert et al., 2008); educational expansion
- Social relations
  - Social connection patterns could help reveal how divided Britain is?

# Does social distance matter?

- Geographical segregation less relevant in contemporary life
    - Commuting and computing means we are less geographically constrained (Putnam, 2000; Rainie & Wellman, 2012)
  - Relevance of distance between decision makers and disadvantaged
    - Policymakers more likely to be favourable to disadvantaged if they have greater connectivity to them (Wilkinson & Pickett, 2009; Jones, 2011)
  - Impact upon social trust
    - May be lower when people are hived into private communities
    - We are more trusting of others if we perceive others to be more like us (Putnam, 2000)
  - Social position rooted in access to social networks
    - Diversity of networks creates diversity of opportunity (Bourdieu, 1977)
- *Diversity of social connections should be positive for individuals*
- *Particular interest here in influence on diversity of attitudes / perspectives*

# Catnets

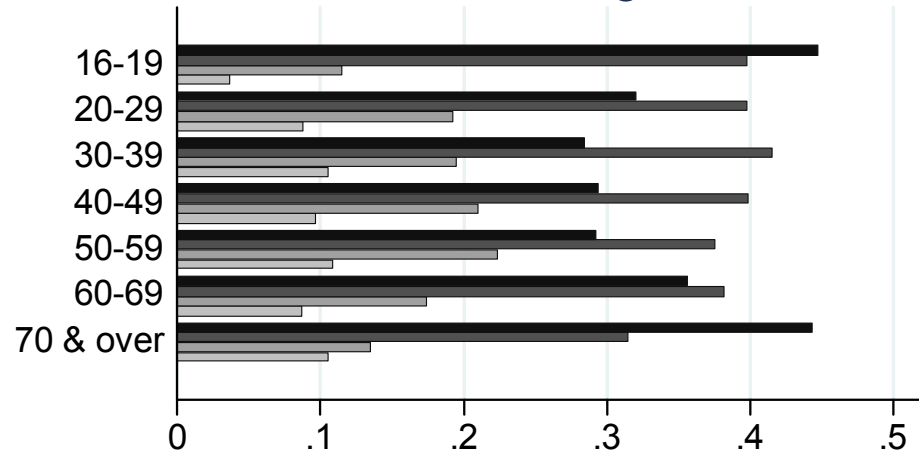
- **Categories of social networks** (White, 1992)
- Think of student interactions
  - An undergraduate more likely to know a student if:
    - On same course
    - In same halls
    - In same sports teams
  - And, more likely to know those with multiple similarities
- Concept can be applied to homophily:
  - Do my friends:
    - Vote the same way as me?
    - Read the same papers as me?
    - Have similar levels of education?
- Homophily can occur due to different processes (propinquity, attraction, assimilation)

# Understanding Society survey (UKHLS)

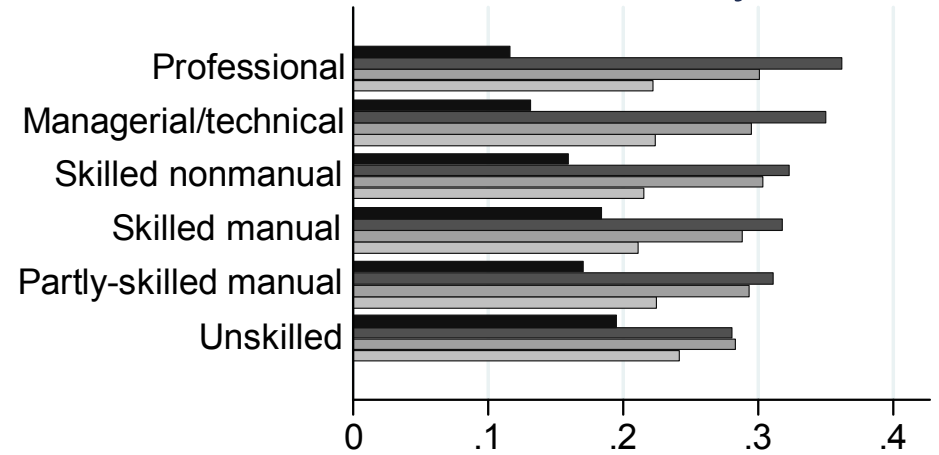
- Large-scale household panel survey in the UK, launched in 2009 (and incorporating 1991-2008 British Household Panel Survey)
- Those from Wave A (and their children) are interviewed every year, along with everyone else living in the household
- Wave C (2011/2) contains adult interviews with 49k individuals within 29k households
- Large, wide-ranging survey asking about full employment history, income, health, politics and so on.
- Modules included on three-wave rolling cycle, including one on social connections (wave C)

# Friends with shared characteristic

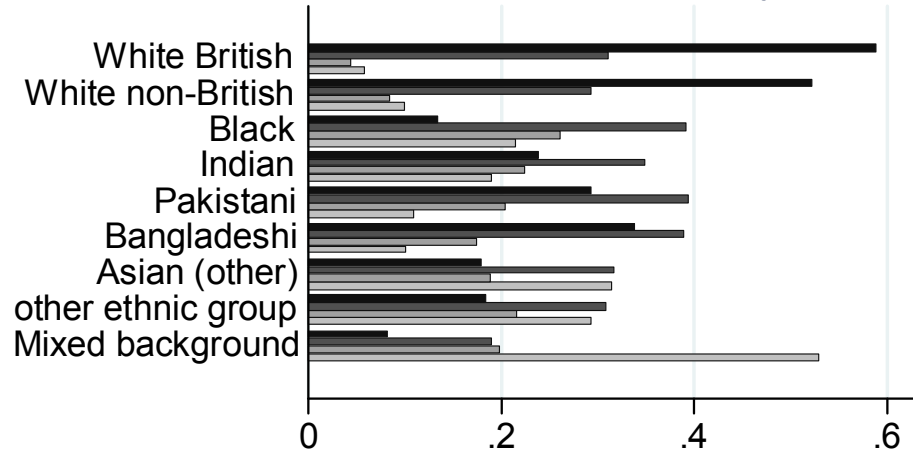
## Same age



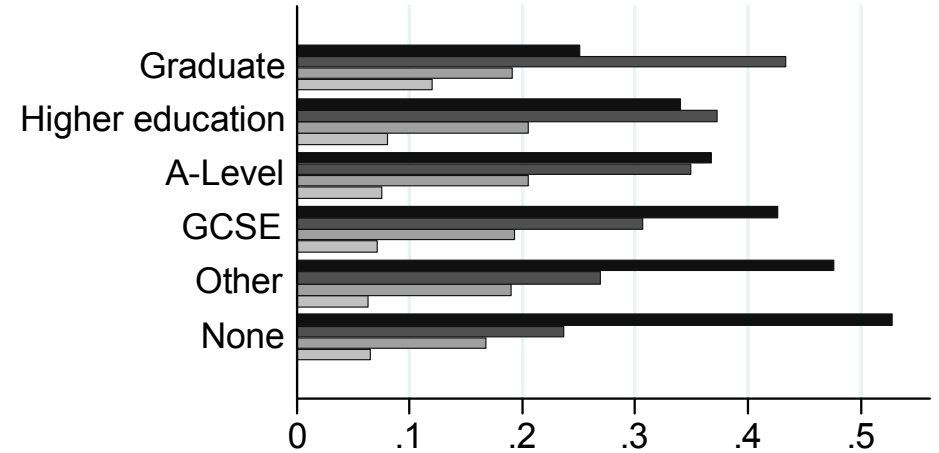
## Same income, by RGSC



## Same ethnicity



## Same qualifications



Source: UKHLS, Wave C

# Methods of analysis

## – Using data on:

- Homogamy (interviews for both partners)
- Homophily (interviews for non-related household sharers > 16)
- Create a matrix of social connections, applying:

## – Social network analysis

- Identifying those connections between social characteristics which are overrepresented (see beyond happenchance connections)
  - » What is the underlying structure of social connections?

## – Loglinear modelling

- Looking at the dynamics of all the connections across the population, and identifying how much they are shaped by forms of homophily
  - » How much does social structure shape connections?



Education (n=48,666)	Paper type (n=25,469)	Political views (n=32,577)	Religion (n=37,386)
University (33%) Non-univ. (52%) No quals. (15%)  <i>People in survey: 49,739</i>	Broadsheet (28%) Tabloid (55%) Regional (17%)  'Broadsheet' defined as over 50% of readers in UKHLS graduates (to overcome declining meaning of 'broadsheet' in UK)	Left (43%) Centre/left (3%) Centre (8%) Centre/right (3%) Right (34%) Right/left (10%)  Left/right/centre description applied to political party supported and newspaper read (defined as majority voters for paper). Those with different party and newspaper outlooks in composite categories.	Catholic (14%) Protestant (13%) Anglican (39%) Islam (7%) Hindu (3%) Jewish (0.5%) Sikh (1%) Buddhist (0.5%) No religion (22%)  Missing data and 'other' category omitted

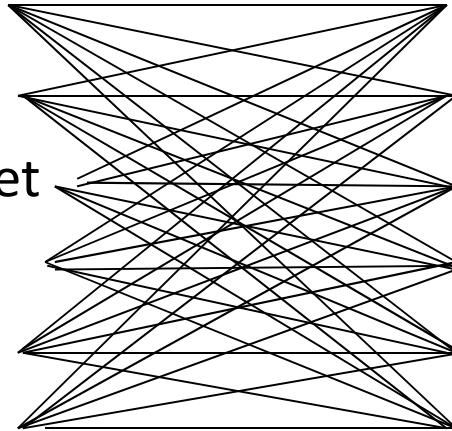
- Individuals coded into four characteristics
- Recoding of data on: education; political party supported; newspaper read; and religion. Some complications of this:
  - Uneven number of categories and levels of missing data
  - Newspaper has influence on paper type and politics
  - Education correlates strongly with paper type
  - Modelling interpretation takes these issues into account

*An example: combinations of categories between an ego (left) and alter (right)*

University, Catholic, left, broadsheet

University, Islam, centre, tabloid

- University Catholic
- University left
- University broadsheet
- Catholic left
- Catholic broadsheet
- Left broadsheet



- University Islam
- University centre
- University tabloid
- Islam centre
- Islam tabloid
- Centre tabloid

- Identities can be created using 2 characteristics of the individual
- Up to 6 'identities' can be created per person (some 'missing' values)
- For homogamy connections, this creates 36 possible identity combinations per couple
- Exemplar combination above shows homogamy in terms of education, but not in terms of religion, politics or news consumption

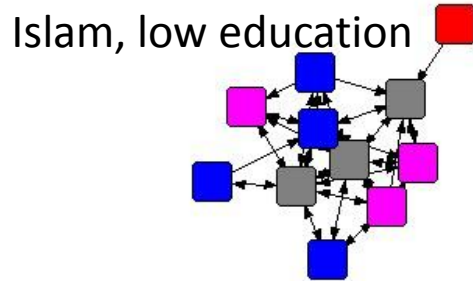
# (Pithy) example of measuring multiple forms of homogamy (to identify ties in an SNA)

Husband \ Wife		Guardian			Times			Mirror		
		Lab	Con	Lib	Lab	Con	Lib	Lab	Con	Lib
Guardian	Lab	166	2	11	3	0	1	5	0	0
	Con	8	4	2	0	1	0	0	0	0
	Lib	7	2	14	0	0	1	0	0	0
Times	Lab	7	2	1	41	6	8	2	0	0
	Con	2	0	0	13	103	18	0	0	0
	Lib	0	0	1	7	7	13	0	0	0
Mirror	Lab	1	0	0	2	0	1	140	3	5
	Con	0	0	0	0	0	0	5	4	2
	Lib	0	0	0	0	0	0	0	1	3

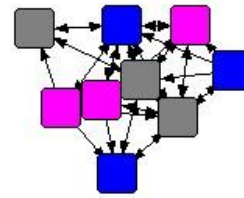
UKHLS, Wave C: 625 couples who both read one of the Guardian, Times or Mirror, and both vote for one of the three main parties.

Green cells are those which occur in at least 1% of cases and are also more common than we would anticipate if there were no relationship between husband's and wife's politics and current affairs consumption.

Colours reflect the two categories comprising the characteristic

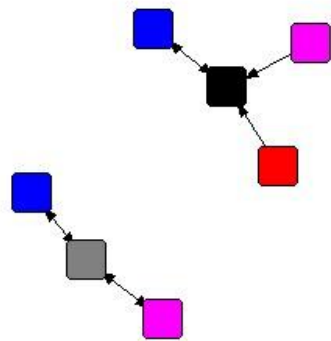


Hindu



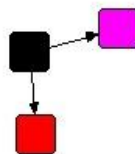
Network of couple combinations that occur >10 times expected ratio, & at least 7 times in total (UKHLS, Wave C)

Protestant, Centre, higher educ.

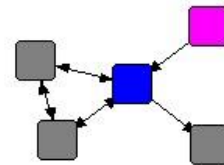


Jewish, higher educ.

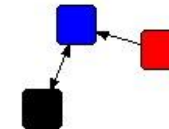
Regional, Centre



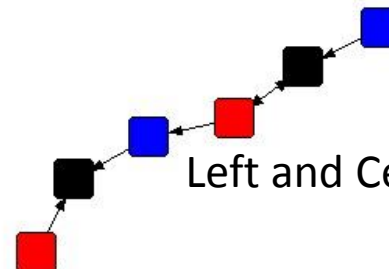
Sikh, low education

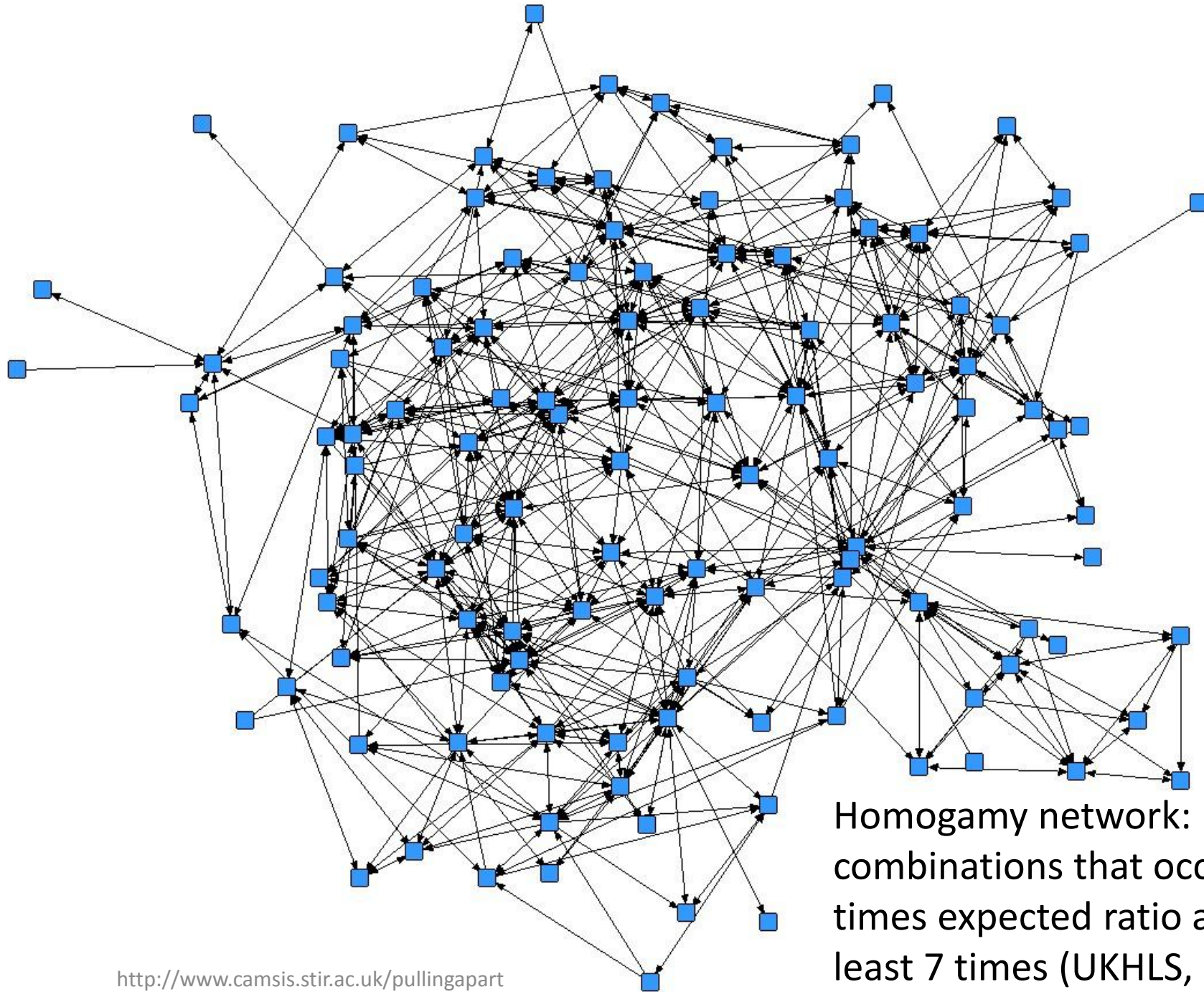


Centre/Right, higher educ.



Left and Centre





Homogamy network:  
combinations that occur >2  
times expected ratio and at  
least 7 times (UKHLS, Wave C)

# QAP Regression of over-represented ties

*Ties occurring at least twice as often as expected:  
Homogamy: and at least 7 times (174k observations)  
Homophily: and at least 3 times (8.9k observations)*

Homogamy	All	Younger	Older
Religion	.09**	.12***	.12***
Ego	.27	.27***	.27***
Edu	.12**	.06***	.06**
Views	.05*	.03	.03*
Paper type	.01	.15***	.15***
Adj. R2	.18**	.24***	.24***

Homogamy shows little difference between younger and older cohorts.

Different results when combined, and therefore similar overall pattern through different connections.

Political views and education alter between cohorts.

Homophily	All	Younger	Older
Religion	-.02	.21***	.07***
Ego	.93	.62***	.64***
Edu	.03*	.06**	.12***
Views	.04*	.01	.06***
Paper type	-.000*	-.002	-.003
Adj. R2	.94*	.67***	.64***

Homophily shows differences between younger and older cohorts and little cohesion when assessing all.

Political views only significant for older cohort, but effects on education and religion coefficients also.

# (Pithy) example of measuring multiple forms of homogamy (assessed through 'diagonal' terms in loglinear models)

Husband		Wife			Times			Mirror		
		Guardian	Lab	Con	Lib	Lab	Con	Lib	Lab	Con
Guardian	Lab	166	2	11	3	0	1	5	0	0
	Con	8	4	2	0	1	0	0	0	0
	Lib	7	2	14	0	0	1	0	0	0
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	Con	2	0	0	13	103	18	0	0	0
	Lib	0	0	1	7	7	13	0	0	0
Mirror	Lab	1	0	0	2	0	1	140	3	5
	Con	0	0	0	0	0	0	5	4	2
	Lib	0	0	0	0	0	0	0	1	3

UKHLS, Wave C: 625 couples who both read one of the Guardian, Times or Mirror, and both vote for one of the three main parties.

- 78.1% vote the same and read the same (complete homogamy)
- 17.1% read same paper but vote differently (newspaper homogamy)
- 3.7% vote the same but read different paper (voting homogamy)
- 1.1% vote different and read different papers (complete heterogamy)

	LL	Degrees Freedom	Delta	BIC	% of BIC decrease
Independence	164,787	19,881	.3450	3,166,621	
+ education*paper	162,014	19,872	.3401	3,169,958	(+3.3%)
+ paper*religion	161,193	19,854	.3400	3,163,356	3.3%
+ education*views	161,173	19,863	.3388	3,163,226	3.4%
+ religion*views	159,660	19,835	.3386	3,162,053	4.6%
+ paper*views	159,657	19,866	.3378	3,161,674	4.9%
+ education*religion	157,071	19,854	.3354	3,159,234	7.4%
+ Education	153,004	19,878	.3244	3,154,875	11.7%
+ Ego	137,471	19,739	.3056	3,141,031	25.6%
+ Views	138,783	19,875	.3066	3,140,691	25.9%
+ Paper type	138,718	19,878	.3037	3,140,589	26.0%
+ Religion	123,278	19,872	.3035	3,125,222	41.4%
Full	63,297	19,576	.1952	3,068,838	
Full (except 2 level)	63,297	19,718	.1952	3,067,112	
Full (except 2 level & ego)	64,449	19,860	.2057	3,066,539	

Loglinear models for homogamy using the volume of 2-category combinations (with terms for 'diagonals')

UKHLS Wave C: 190k cases from 11,801 couples.

No evidence that 2-category diagonals are important, but 1-category diagonals are.

Conclude: We have some similarity to partners, but not too much.



	Young (both born since 1960)		Older (both born pre 1960)	
	Delta	BIC	Delta	BIC
Independence	.3316	1,305,092	.3674	1,409,536
Full	.2013	1,273,373	.2145	1,365,769
Full (except 2 level)	.2013	1,271,772	.2145	1,364,188
Full (except 2 level & ego)	.2951	1,300,583	.2264	1,363,381

## Homogamy effects broken down by age

UKHLS Wave C:  
 95k cases from 4.9k couples for older  
 79k cases from 5.8k couples for younger

Older cohort are more homogamous

Delta for independence model for younger cohort lower than for the education and religion models for older.

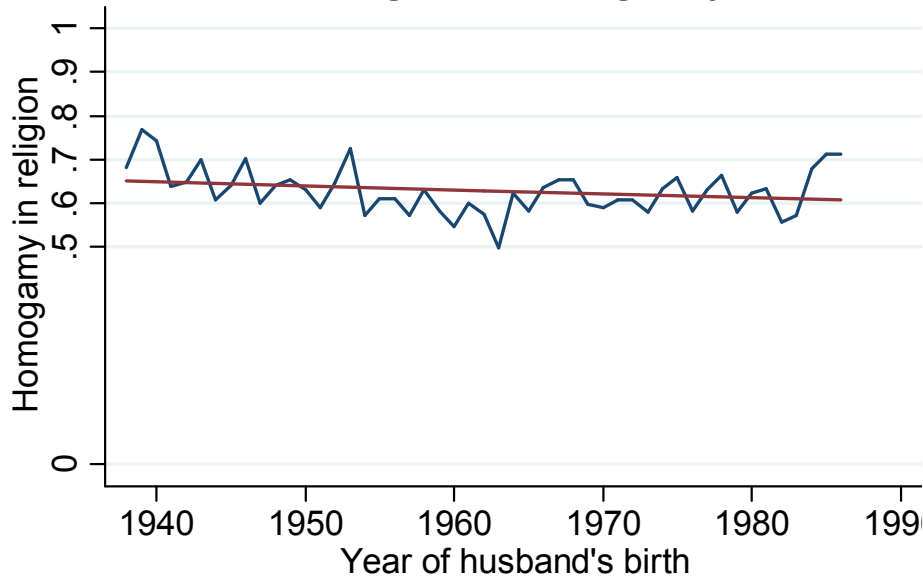
No evidence of 'pulling apart'

Religion becomes relatively more important for younger cohort?

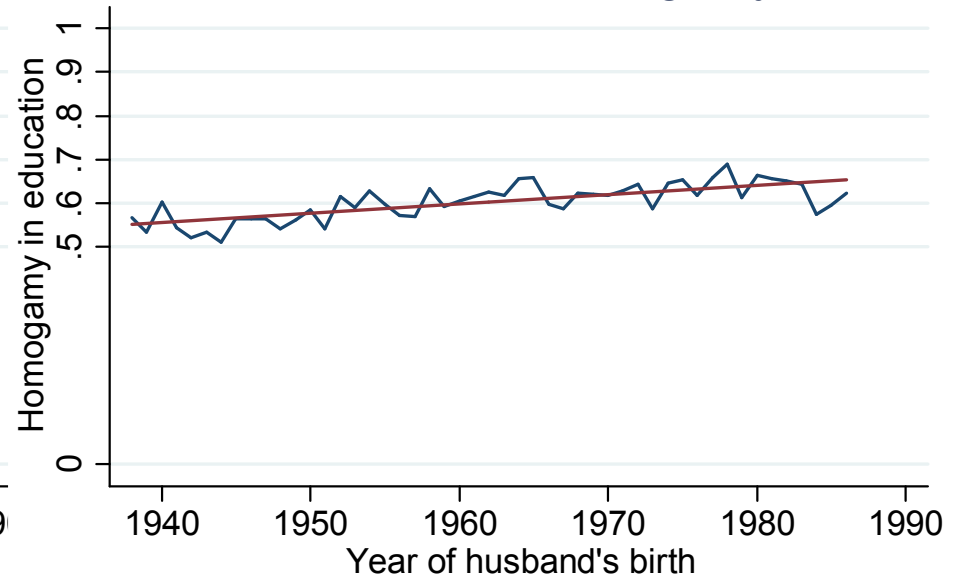
Young (both born since 1960)			Older (both born pre 1960)		
	Delta	% of BIC decrease		Delta	% of BIC decrease
Education	.3128	3.8%	Education	.3457	12.1%
Views	.3049	14.8%	Ego	.3270	24.7%
Paper type	.2996	15.8%	Religion	.3398	26.5%
Ego	.2951	18.4%	Paper type	.3206	30.9%
Religion	.2851	54.7%	Views	.3177	35.9%

# Links to overall trends in homogamy?

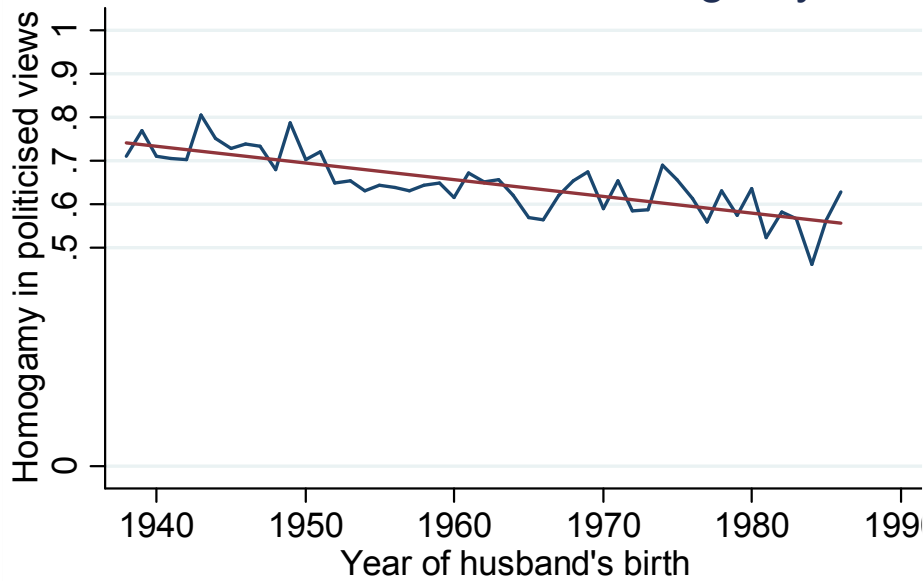
## Religion homogamy



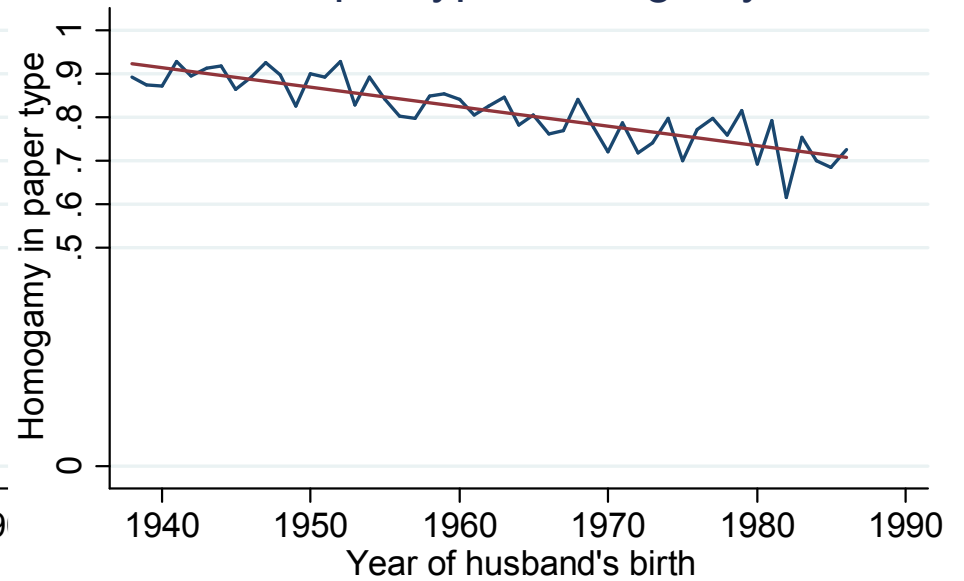
## Educational homogamy



## Politicised views homogamy



## Paper type homogamy



	LL	Degrees Freedom	Delta	BIC	% of BIC decrease
Independence	10,999	14,161	.379	156,666	
+ religion*views	10,923	14,125	.378	156,921	(+9.8%)
+ paper*religion	10,969	14,139	.378	156,837	(+6.6%)
+ paper*views	10,894	14,146	.3738	156,700	(+1.3%)
+ education*views	10,850	14,146	.373	156,654	0.5%
+ education*paper	10,897	14,152	.374	156,647	0.7%
+ education*religion	10,567	14,138	.371	156,446	8.4%
+ Ego	10,124	14,041	.351	156,891	(+8.6%)
+ Views	10,598	14,155	.370	156,321	13.2%
+ Paper type	10,608	14,158	.365	156,302	14.0%
+ Education	10,333	14,158	.353	156,018	24.9%
+ Religion	9,528	14,152	.361	155,277	53.3%
Full	8,013	13,900	.3001	156,073	
Full (except 2 level)	8,013	14,020	.301	154,973	
Full (except 2 level & ego)	8,200	14,140	.311	154,060	

Loglinear models for homophily using the volume of 2-category combinations (with terms for 'diagonals')

UKHLS Wave C:  
9k cases from 932 pairs of 634 individuals.

Overlap between the 1-category and 2-category diagonal terms, suggesting that we are alike our friends in multiple ways.

	Young (both born since 1960)		Older (both born pre 1960)	
	Delta	BIC	Delta	BIC
Independence	.397	108,734	.620	12,173
Full	.320	108,767	.501	12,763
Full (except 2 level)	.320	107,815	.501	12,326
Full (except 2 level & ego)	.332	107,026	.536	11,952

## Homophily by age

UKHLS Wave C:  
 750 cases from 66 pairs of  
 52 individuals for older;  
 16k cases from 889 pairs of  
 554 individuals for younger

Older cohort are more homophilous, albeit with factors not captured by models

Delta for younger cohort always much lower than any models for older cohort

No evidence of 'pulling apart'.

Student households may explain education for younger cohort

	Young (both born since 1960)			Older (both born pre 1960)		
		Delta	% of BIC decrease		Delta	% of BIC decrease
Ego	.368	+18.4%	Ego	.577	+145%	
Views	.390	6.2%	Education	.612	0.9%	
Paper	.388	8.8%	Paper	.604	14.0%	
Religion	.376	62.3%	Religion	.603	23.5%	
Education	.370	114.1%	Views	.561	77.3%	

# Conclusion

- Little evidence of ‘hiving’ apart in Britain
  - homogamy exists, but different domains don’t particularly reinforce each other
  - We are more alike the friends we live with than our partners
- Effects of homogamy may be declining over time
  - Greater diversity for younger couples without controls than for older people with education or religion homophily modelled
  - Within-household friends have greater diversity for younger than older cohorts
  - Older people more likely to be alike in terms of their political values and news consumption, greater diversity amongst the young across all analysis
- Is Britain Pulling Apart?
  - No: Our connections are becoming more diverse
  - But, is this a cohort effect (changing attitudes between generations) or ageing effect (become more alike as we age)?

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