Social change in social distance

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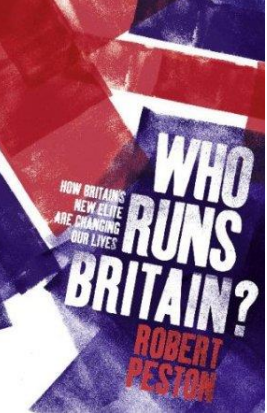
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Social Change in Social Distance

1) **Introduction: Theory and data on social distance**

2) Changes in occupational, educational and ethnic homogamy

3) Changes in other forms of social distance

A Divided Britain?

- Popular Social Science publications portray Britain as divided, but are hazy on details
  - Bankers vs rest (Hutton, 2011)
  - Politicians/companies vs rest (Peston, 2008)
  - Rest vs working classes (Jones, 2011)
  - A gulf in cultural participation (Savage et al. 2013)
- Much public debate & informed lay perception that Britain is both divided and dividing
- Objectively, in Britain, many things are remarkably stable (work, relationships, lifestyles), but some things do change (education, family formation, internet)

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

Inequalities, social relations, and social trends

- Social inequality is classically studied as distribution of resources
  - Not all evidence points the same way, but common view that resource polarisation has risen slightly since 2000, & will rise further (e.g. ETUI 2012; Dorling 2011; Gibbons et al. 2005). However, trend is not clear cut for all social groups (cf. Finney and Simpson 2009; Evans &Tilley, 2011; Jivrav 2012).
  - It's important to study inequality of resources - regardless of temporal trends!

- In our project, we focus on social relations and their trends in time
  - Social relations are important and can contribute to other inequalities (many accounts view diversity of social connections as positive / desirable - e.g. Wilkinson & Pickett 2009; consolidation as negative, e.g. Bourdieu 1984)
  - Engages with claims about rapid recent social change (Puttnam 2000 - atomisation due to technological change? modernising impact of educational expansion? ambiguous impact of Ryanair?)
  - Engages with claims about long term social change
  - …E.g. Bourdieu 1977; Marks 2014; Erikson and Goldthorpe 2010
  - …French pessimism; American optimism; English diffidence…

'Social distance'

• Generically, social distance = how far away A is from B, on the basis of {likely} levels of social contact

• *Contact levels assessed through measurable social interactions (friendship, marriage, family)*

• *A and B are usually social units; we typically see several empirical dimensions that characterise the pattern of social contacts*

• Previous research on social distance between occupational categories (e.g. www.camsis.stir.ac.uk ; Lauman & Guttman 1966; Chan 2010)
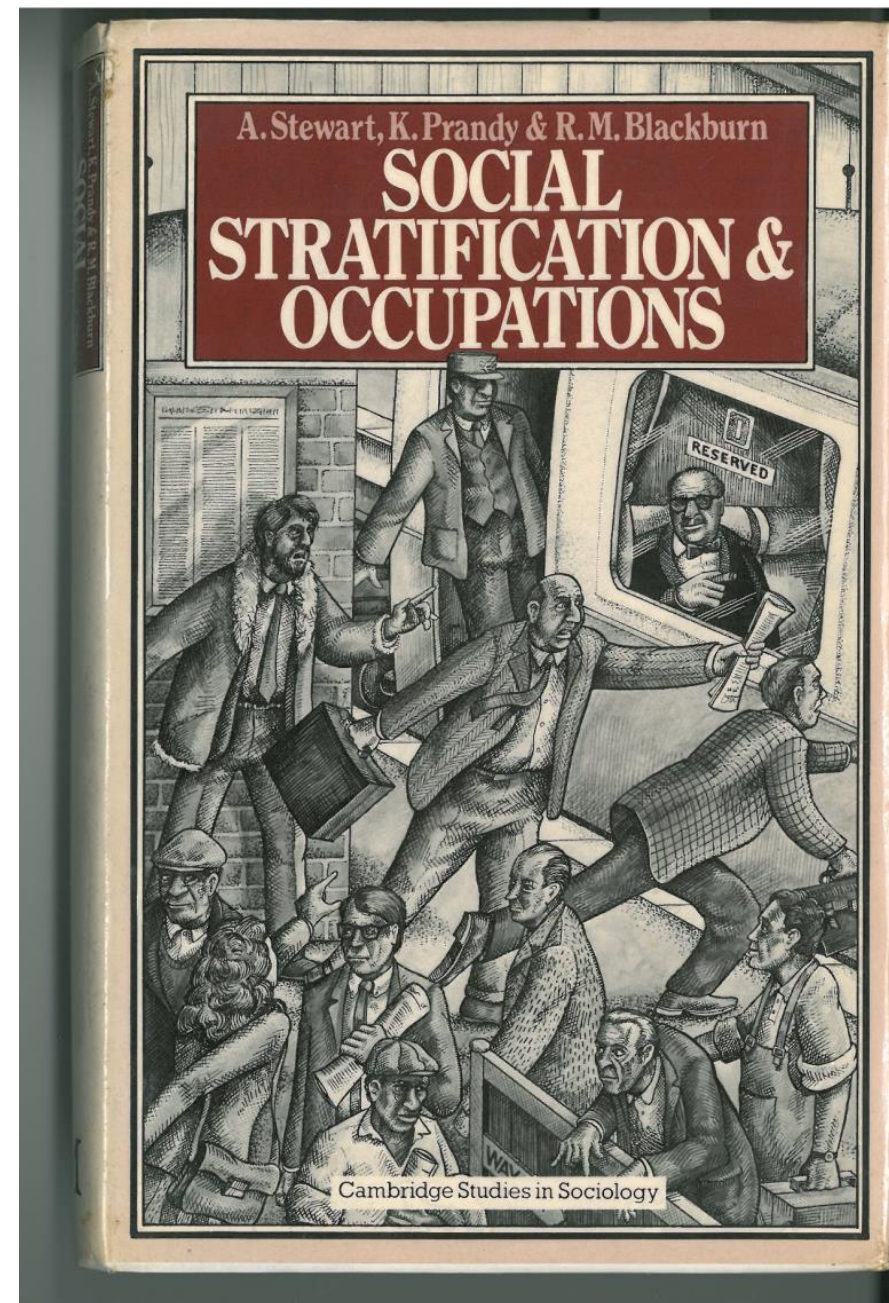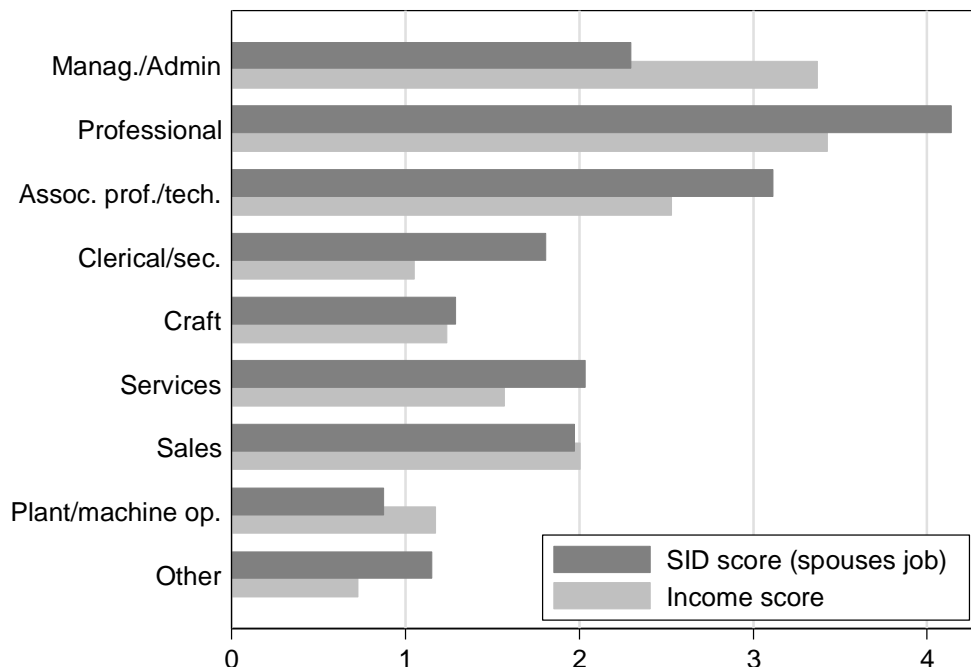

Social distance = social structure that is revealed through analysing ties

5

Why study social relations, social connections and social distance?

(a) Consequential individual level outcomes correlate data on alters

➤ Strong empirical effects of spouses, parents, friends, social capital, etc

Bivariate correlation*100 to… (UKHLS 2009) _(ul=sig. effect net of own characteristic)_	Inc.	Health	GHQ	Green
Spouse has degree	21	16	5	14
Father's job	15	14	3	9

Legend: SID score (spouses job), Income score

Source: Analysis of married males in BHPS. Scores mean standardised plus 2.

Categories: Manag./Admin, Professional, Assoc. prof./tech., Clerical/sec., Craft, Services, Sales, Plant/machine op., Other

(b) Social structure as defined by social distance is revealing

➤Interaction structure not identical to other structures and of theoretical interest (?the trace of social reproduction)

➤May be particular connections of interest (e.g. bridging ties)

➤Reveals mechanisms of inequality

Why study social distance?

…Also some recent innovations in the area covering data and methods…

• Evolution of relevant methods of network analysis, multilevel modelling, & association modelling

• Complex contemporary datasets increasingly allow reconstruction of data about social connections

- **Current household sharers from household level datasets**
- **Previous household sharers (& their new alters) from longitudinal datasets**
- **Proxy questions on alters on certain new (& old) datasets**
- *'Reconstitutions' with administrative data e.g. using information on shared households/family/institutions*
- *New wave of interest in proxy questions on social connections, e.g. lifestyle questions; position generators*

Big comparative coverage of family connections data..

IPUMS International - Internet Explorer provided by University of Stirling

https://international.ipums.org/international/samples.shtml

IPUMS International

IPUMS

International

Home | Select Data | FAQ | Help | Login

IPUMS Sample Information

Argentina	1970·1980·1991·2001·2010	Hungary	1970·1980·1990·2001	Panama	1960·1970·1980·1990·20
Armenia	2001	India	1983·1987·1993·1999·2004	Peru	1993·2007
Austria	1971·1981·1991·2001	Indonesia	1971·1976·1980·1985·1990·1995	Philippines	1990·1995·2000
Bangladesh	1991·2001·2011		2000·2005·2010	Portugal	1981·1991·2001
Belarus	1999	Iran	2006	Puerto Rico	1970·1980·1990·2000·20
Bolivia	1976·1992·2001	Iraq	1997	Romania	1977·1992·2002
Brazil	1960·1970·1980·1991·2000·2010	Ireland	1971·1979·1981·1986·1991·1996	Rwanda	1991·2002
Burkina Faso	1985·1996·2006		2002·2006	Saint Lucia	1980·1991
Cambodia	1998·2008	Israel	1972·1983·1995	Senegal	1988·2002
Cameroon	1976·1987·2005	Italy	2001	Sierra Leone	2004
Canada	1971·1981·1991·2001	Jamaica	1982·1991·2001	Slovenia	2002
Chile	1960·1970·1982·1992·2002	Jordan	2004	South Africa	1996·2001·2007
China	1982·1990	Kenya	1969·1979·1989·1999·2009	South Sudan	2008
Colombia	1964·1973·1985·1993·2005	Kyrgyz Republic	1999·2009	Spain	1981·1991·2001
Costa Rica	1963·1973·1984·2000	Malawi	1987·1998·2008	Sudan	2008
Cuba	2002	Malaysia	1970·1980·1991·2000	Switzerland	1970·1980·1990·2000
Ecuador	1962·1974·1982·1990·2001·2010	Mali	1987·1998	Tanzania	1988·2002
Egypt	1996·2006	Mexico	1960·1970·1990·1995·2000·2005	Thailand	1970·1980·1990·2000
El Salvador	1992·2007		2010	Turkey	1985·1990·2000
Fiji	1966·1976·1986·1996·2007	Mongolia	1989·2000	Uganda	1991·2002
France	1962·1968·1975·1982·1990·1999	Morocco	1982·1994·2004	United Kingdom	1991·2001
	2006	Nepal	2001	United States	1960·1970·1980·1990·20
Germany	1970·1971·1981·1987	Netherlands	1960·1971·2001		2010
Ghana	2000	Nicaragua	1971·1995·2005	Uruguay	1963·1975·1985·1996·20
Greece	1971·1981·1991·2001	Pakistan	1973·1981·1998	Venezuela	1971·1981·1990·2001
Guinea	1983·1996	Palestine	1997·2007	Vietnam	1989·1999·2009
Haiti	1971·1982·2003				

-> *today's data sources*

- ## UK data on friends and families
  - Using proxy data from social surveys (questions on friends)
    - 1972 Nuffield; 1974 SSGB; 1991-2004 BHPS; c2011 UKHLS
  - BHPS household sharer data (current or previous sharer)
  - UKHLS household sharer data (current sharer)
  - LFS household sharer data (spouse) (1997-2013)
  - GHS household sharer data (spouse) (1972-2004) [ONS, 2007]

- ## UK and international data on spouses
  - IPUMS-I records on self and spouse using, for convenience, harmonised measures of occupations (ISCO 1-dig), education, ethnicity and religion
  - Survey data with records on spouses from European Social Survey and ISSP
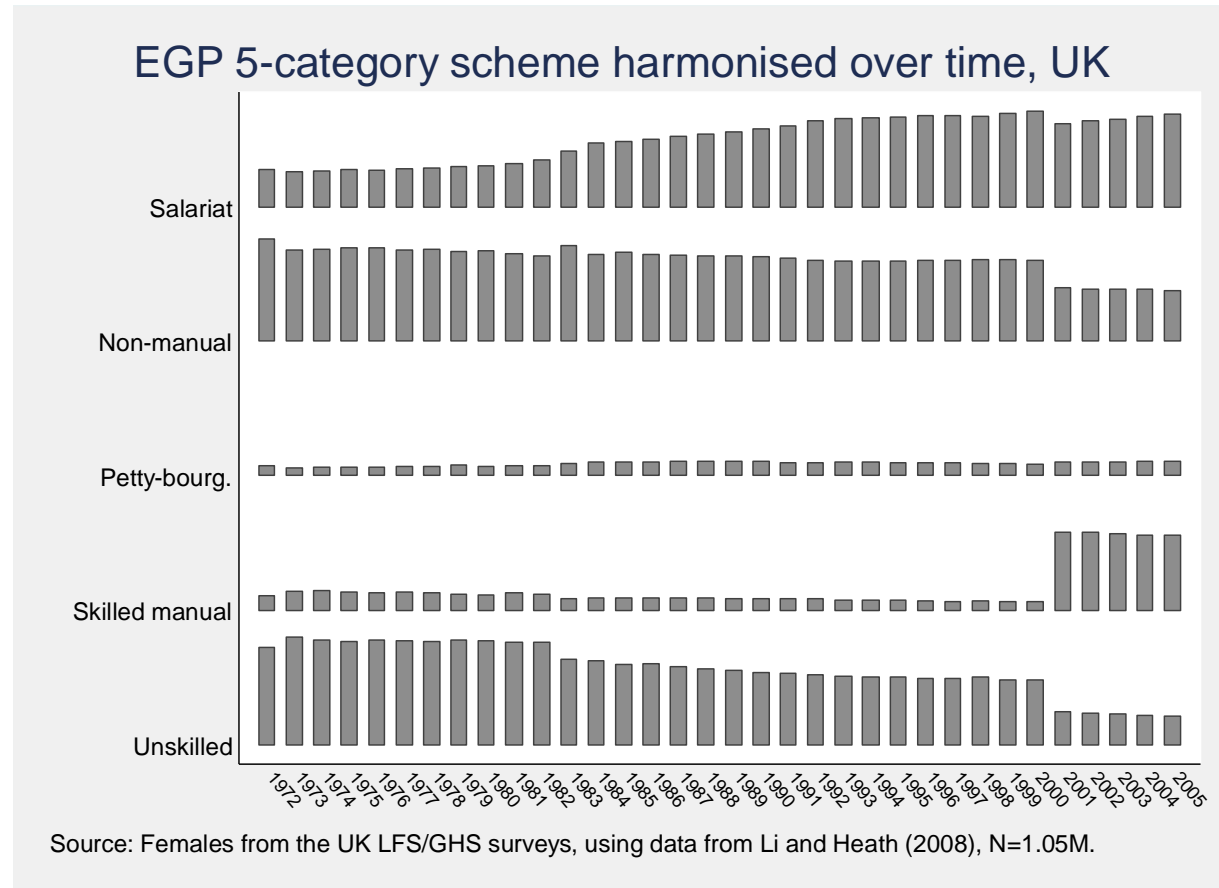
-> *today's methods*

- Descriptive tools for summarising patterns of social interaction between social groups and over time
  - Association statistics to summarise correlations between categories
  - Cohort /time period, and cross-national, trends in association patterns (homogamy, homophily)
  - Correspondence analysis / association modelling to identify subsidiary dimension structures
  - Social network analysis techniques to highlight patterns of connections and their changes
  - Loglinear modelling of the volume of connections as a function of type and time

(2) Changes in occupational, educational and ethnic homogamy

- Previous social distance research shows:
  - Levels of socio-economic homogamy/homophily are generally stable or, for education, marginally increasing (e.g. Brynin et al. 2008)
  - No major peturbations (so far) in the underlying order defined by social distance (e.g. Prandy and Lambert 2003)

- We use social interaction distance analysis to characterise the own-alter relationship between categories (here use correspondence analysis & SNA) and its change through time
  - Overall strength of the ego-alter relationship
    ('inertia' / Cramer's V / gap between selected units)
  - Evidence of trends in that structure through time or between countries

...Methodological problems abound...

- ## Which categories of occ/educ/ethnicity to use
  - Lowest common denominator problem
  - Consistency

  of relative meaning?

EGP 5-category scheme harmonised over time, UK

Source: Females from the UK LFS/GHS surveys, using data from Li and Heath (2008), N=1.05M.

- *SID approach bypasses some of these problems by scaling relative position (of detailed categories) in a social space at different times*
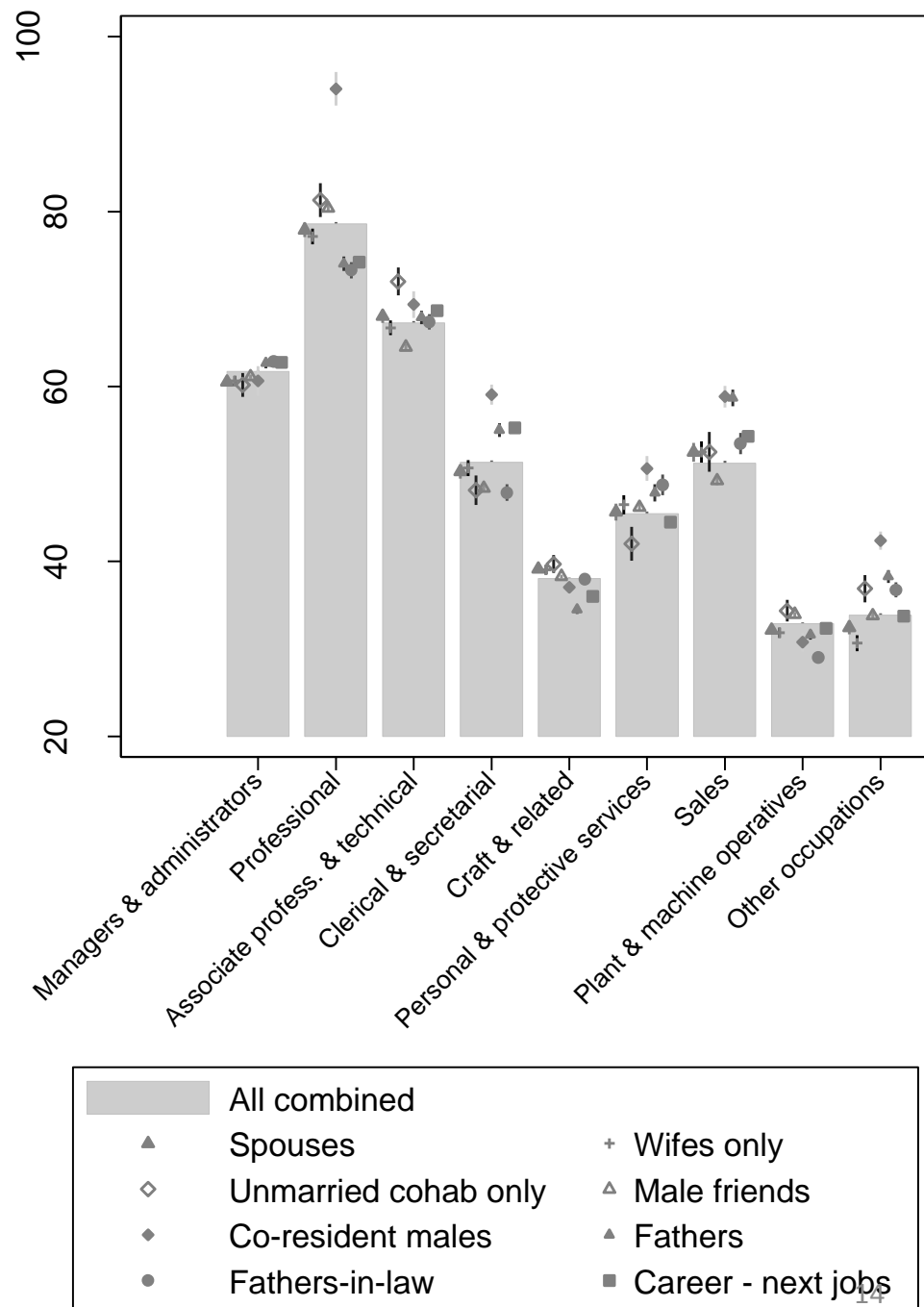
More on problems of method

- *'Statistics are constructed' – much depends upon which categories we analyse the distance between, and on what if any controls on combinations we define (e.g. excluding 'diagonals')*

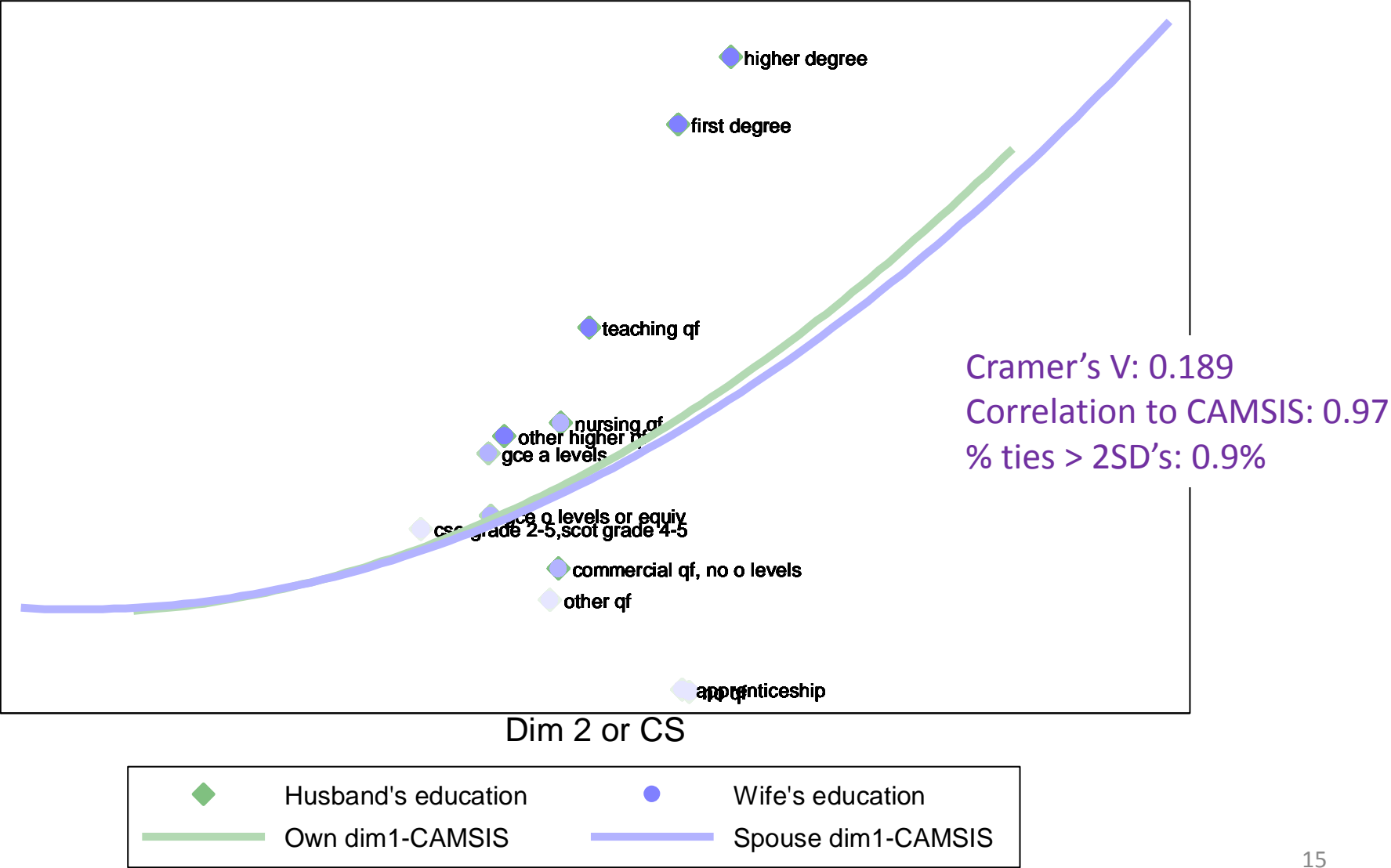| *Type of connection*	Friend; Kin (same or parental generation); Unrelated household sharer (or previous sharer)	Same-sex friends, same sex parent-child, & cross-gender spouses work fine; within-household pairs often don't work as well
Categories of analysis	k, where k >= 2 & k <= 700 k_1 for ego, k_2 for alter (k_1 ?= k_2)	- Sampling n (usually ask for 30 per k) - Consistency with other categories - Structural dependencies with other factors can define distance patterns - Hard / impossible to resolve!
Statistical controls	Diagonals; 'pseudo-diagonals'; categories linked to a separate structure (e.g. gender, nation)	- Little difference for occupations, ethnicity, age (subsidiary componens) - Considerable impact for education

'Social interaction distance' (SID) analysis of occupations is now very well charted

(Stewart et al. 1980, Laumann & Guttman 1966, Prandy 1990, Chan 2010, de Luca et al. 2012)
(...and www.camsis.stir.ac.uk)

- First dimension is of stratification (or 'status')

- Other interpretable dimensions (gender segregation, agriculture, public sector)

- Any form of social connection data probably reveals the same structure

Legend:
All combined
▲ Spouses   + Wifes only
◇ Unmarried cohab only   △ Male friends
◆ Co-resident males   ▲ Fathers
● Fathers-in-law   ■ Career - next jobs

Data on males in work and various alters, from BHPS 1991-2000.

For educational qualifications, first dimension of SID is usually stratification; subsidiary dimensions are not so clear, but might reflect age cohort differences in prevalence

Cramer's V: 0.189
Correlation to CAMSIS: 0.97
% ties > 2SD's: 0.9%

higher degree
first degree
teaching qf
nursing qf
other higher qf
gce a levels
gce o levels or equiv
cse grade 2-5,scot grade 4-5
commercial qf, no o levels
other qf
apprenticeship

Dim 2 or CS

◆ Husband's education   ● Wife's education
── Own dim1-CAMSIS   ── Spouse dim1-CAMSIS

Own ethnicity – Friend's ethnicity

For ethnicity (& religion), so far, all of the main dimensions reflect separation of just one or two groups from all others
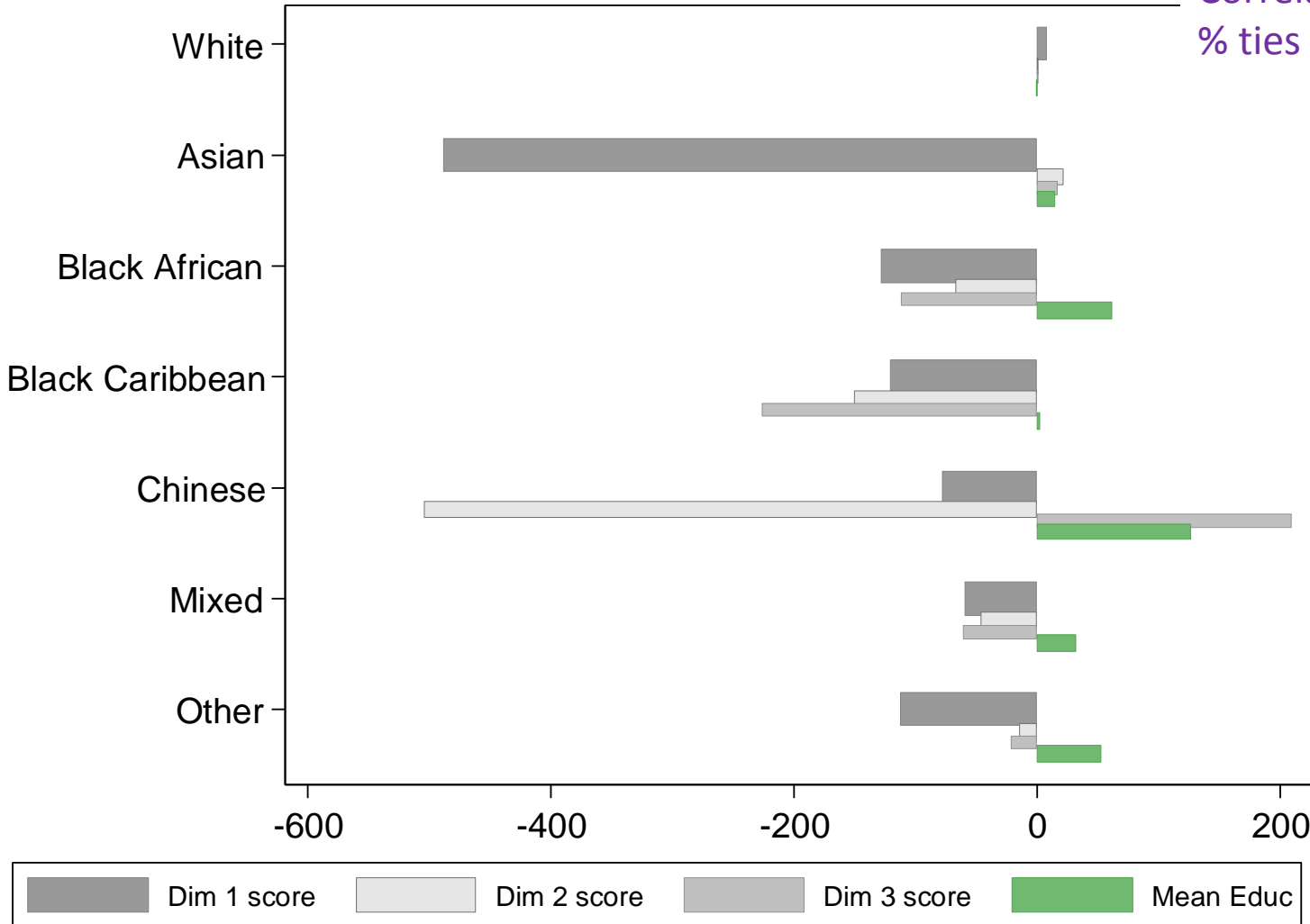
Cramer's V: 0.334
Correlation to CAMSIS: -0.17
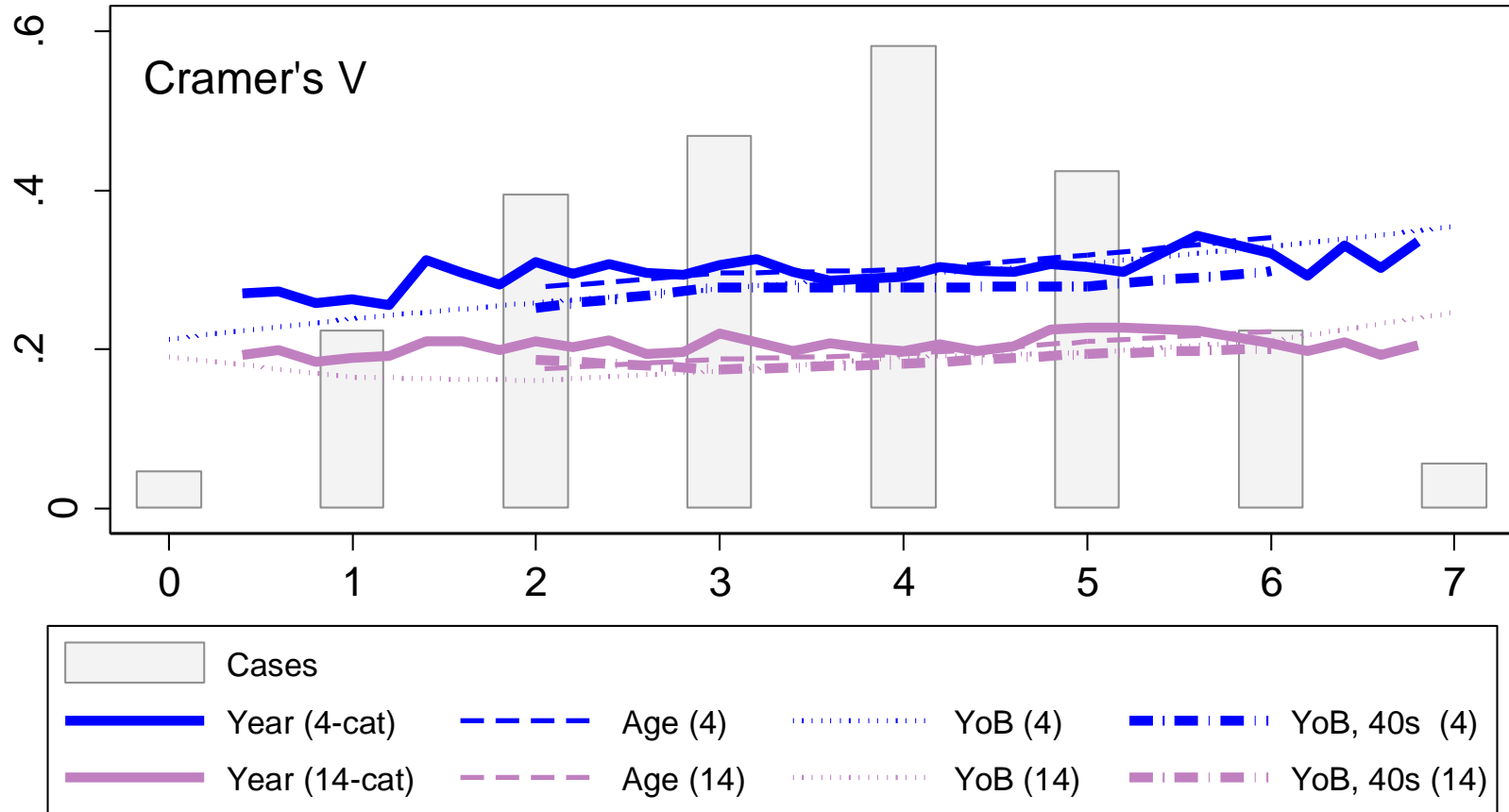% ties > 2SD's: 1.1%

Lauman 1973:
1st dim. = assimilation, further dims unclear, maybe catholicism

P50: "Our efforts to determine the role of socio-economic status, …, occupational status, and school years completed… in structuring the space have been unsuccessful"

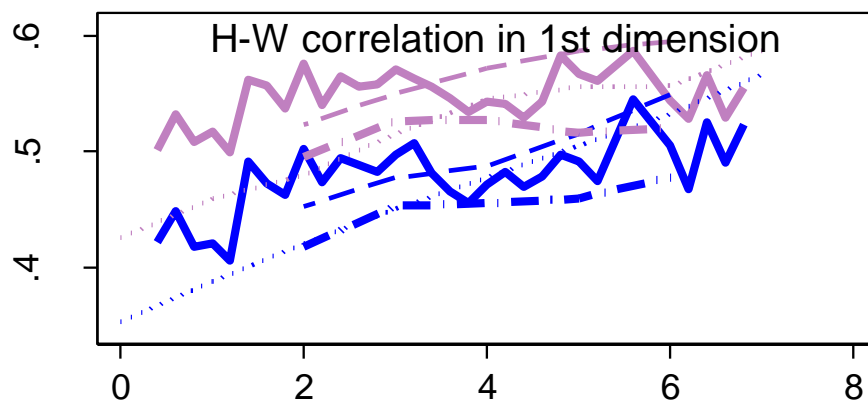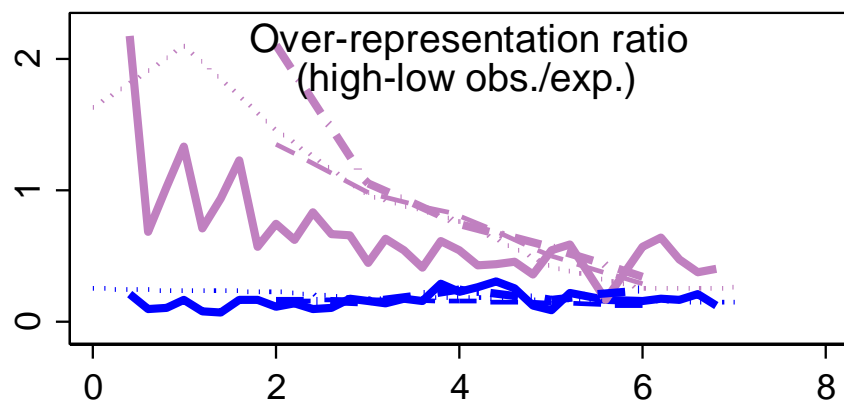| | Dim 1 score | Dim 2 score | Dim 3 score | Mean Educ |

...If studying trends, there are different possible criteria for trends in time, & permutations of categories measured and summary statistics...

Educational homogamy in the UK

Source: Pooled GHS time series, 1974-2004. Horizontal axis refers to different time metrics by line. Metrics refer to: Years since 1970/5; age in decades-1; birth cohort (year of birth since 1900). Lines show statisics when education is coded into 4 or 14-category versions, and for different measures of time (year, age, year of birth, and year of birth for adults in their 40s).

Educational homogamy in the UK

Cramer's V

High-Low 'Social distance'
(Gap in score in 1st dimension)

Over-representation ratio
(high-low obs./exp.)

H-W correlation in 1st dimension

Legend			
Year (4-cat)	Age (4)	YoB (4)	YoB + 40s (4)
Year (14-cat)	Age (14)	YoB (14)	YoB, 40s (14)

Source: Pooled GHS time series, 1974-2004. Horizontal axis refers to different time metrics by line. Metrics refer to: Years since 1970/5; age in decades-1; birth cohort (year of birth since 1900). Lines show statisics when education is coded into 4 or 14-category versions, and for different measures of time (year, age, year of birth, and year of birth for adults in their 40s).

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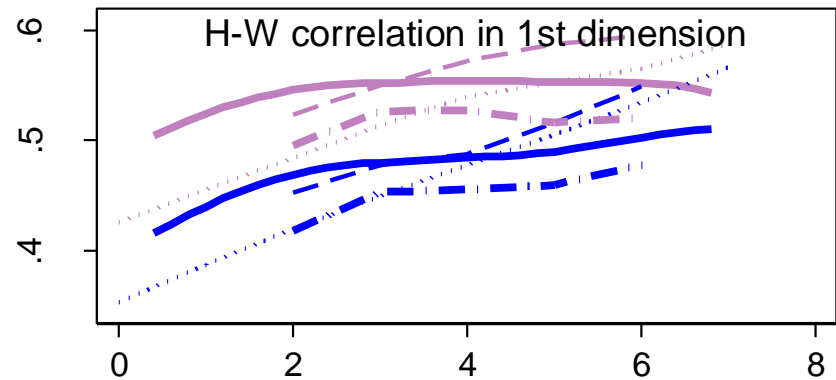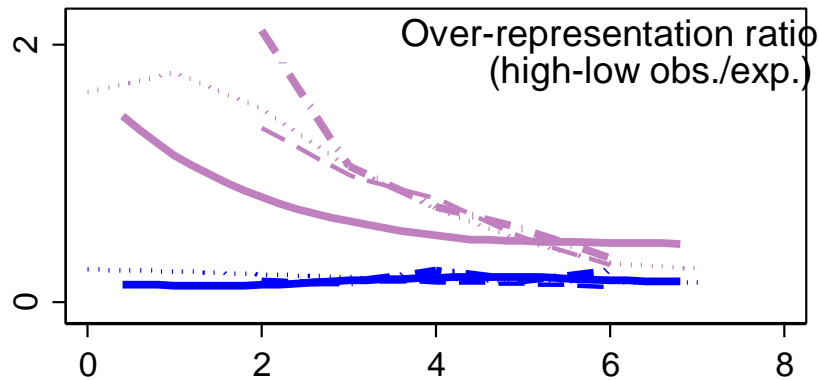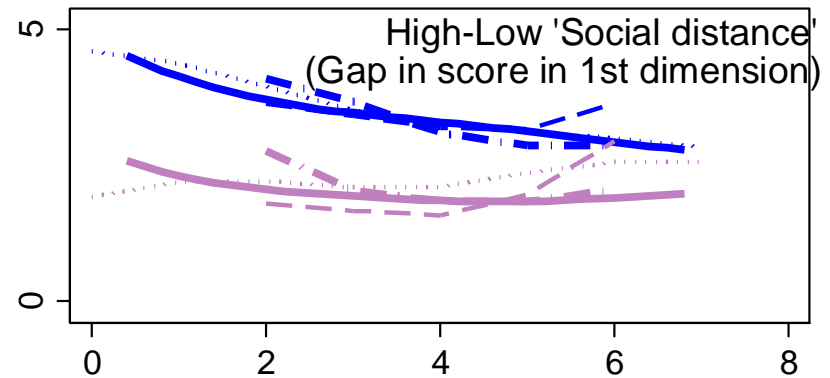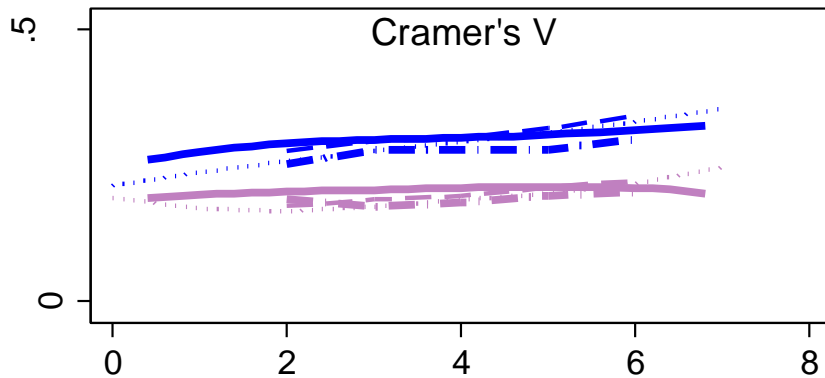| Year (4-cat) | Age (4) | YoB (4) | YoB + 40s (4) |
| Year (14-cat) | Age (14) | YoB (14) | YoB, 40s (14) |

Source: Pooled GHS time series, 1974-2004. Horizontal axis refers to different time metrics by line. Metrics refer to: Years since 1970/5; age in decades-1; birth cohort (year of birth since 1900). Lines show statisics when education is coded into 4 or 14-category versions, and for different measures of time (year, age, year of birth, and year of birth for adults in their 40s). Lines smoothed with local linear smoothing (lowess
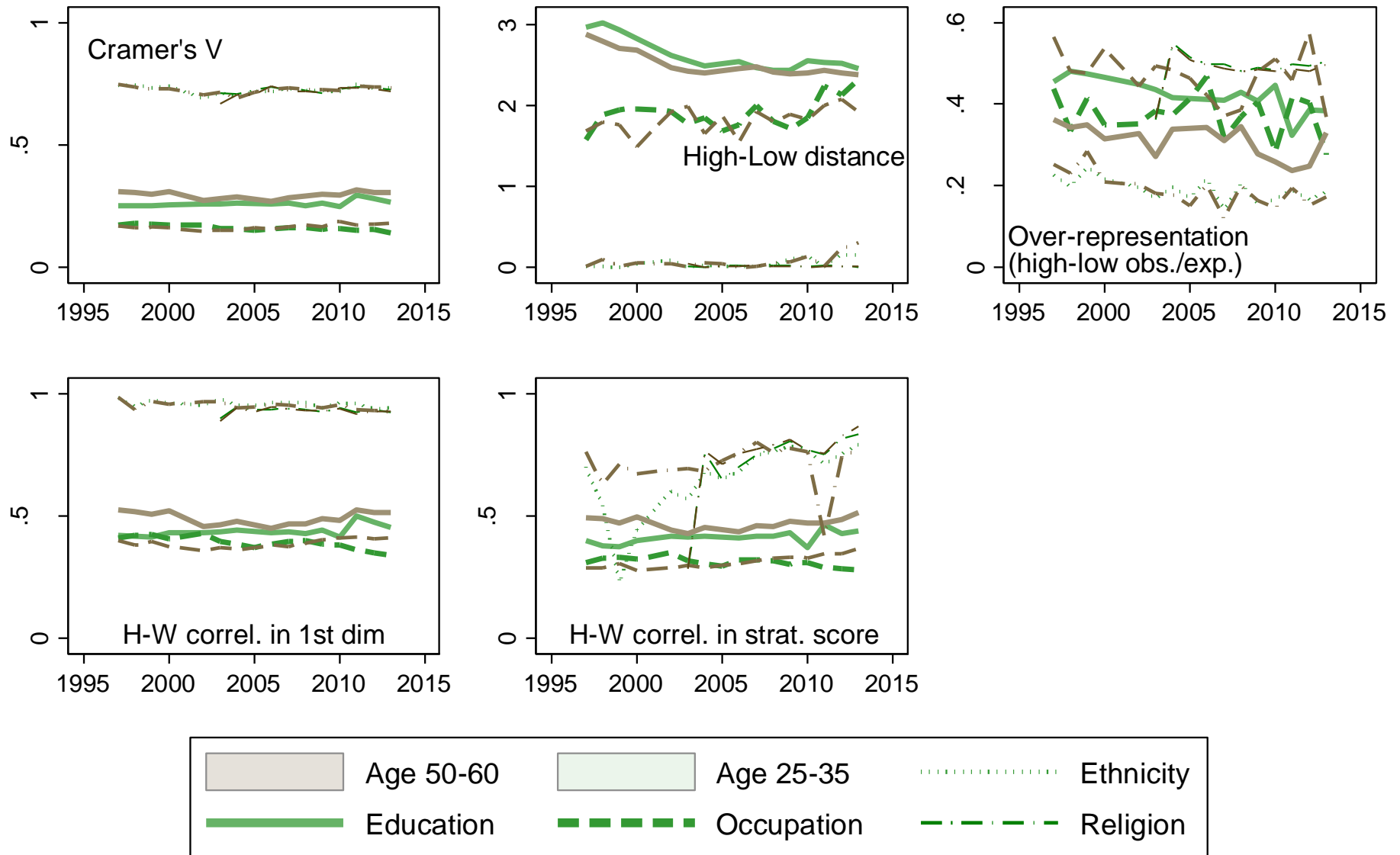
Homogamy in the UK

Source: Pooled LFS, 1997-2013, cohabiting couples. Horizontal axis refers to time point of observation.
Colours indicate age cohort within time period (age of husband). N ~= 5k couples per time period.

Homogamy in the UK
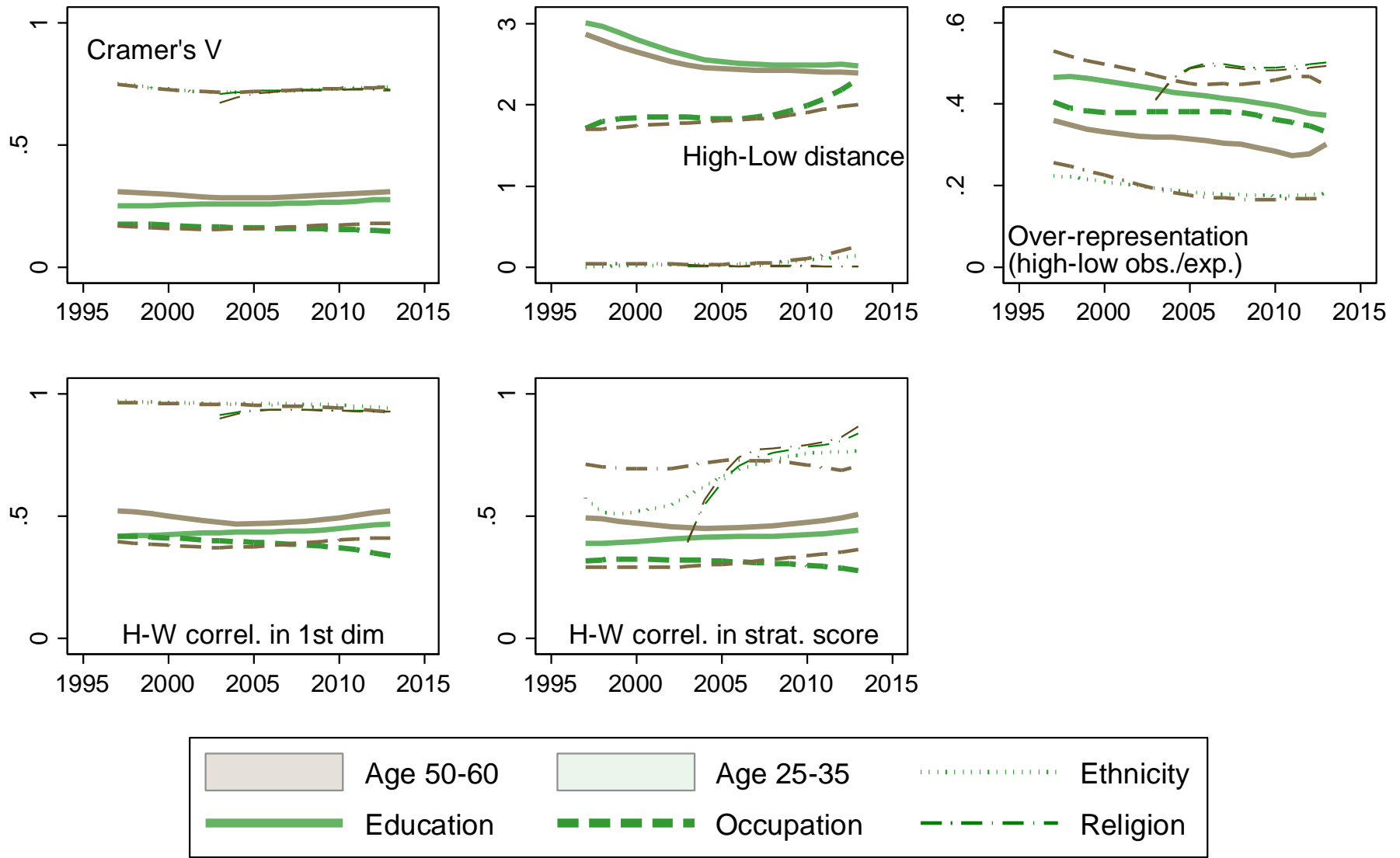
Source: Pooled LFS, 1997-2013, cohabiting couples. Horizontal axis refers to time point of observation. 'Lowess' lines plotted (local linear smooth)
Colours indicate age cohort within time period (age of husband). N ~= 5k couples per time period.

Trends in UK in social distance

Friendship data:
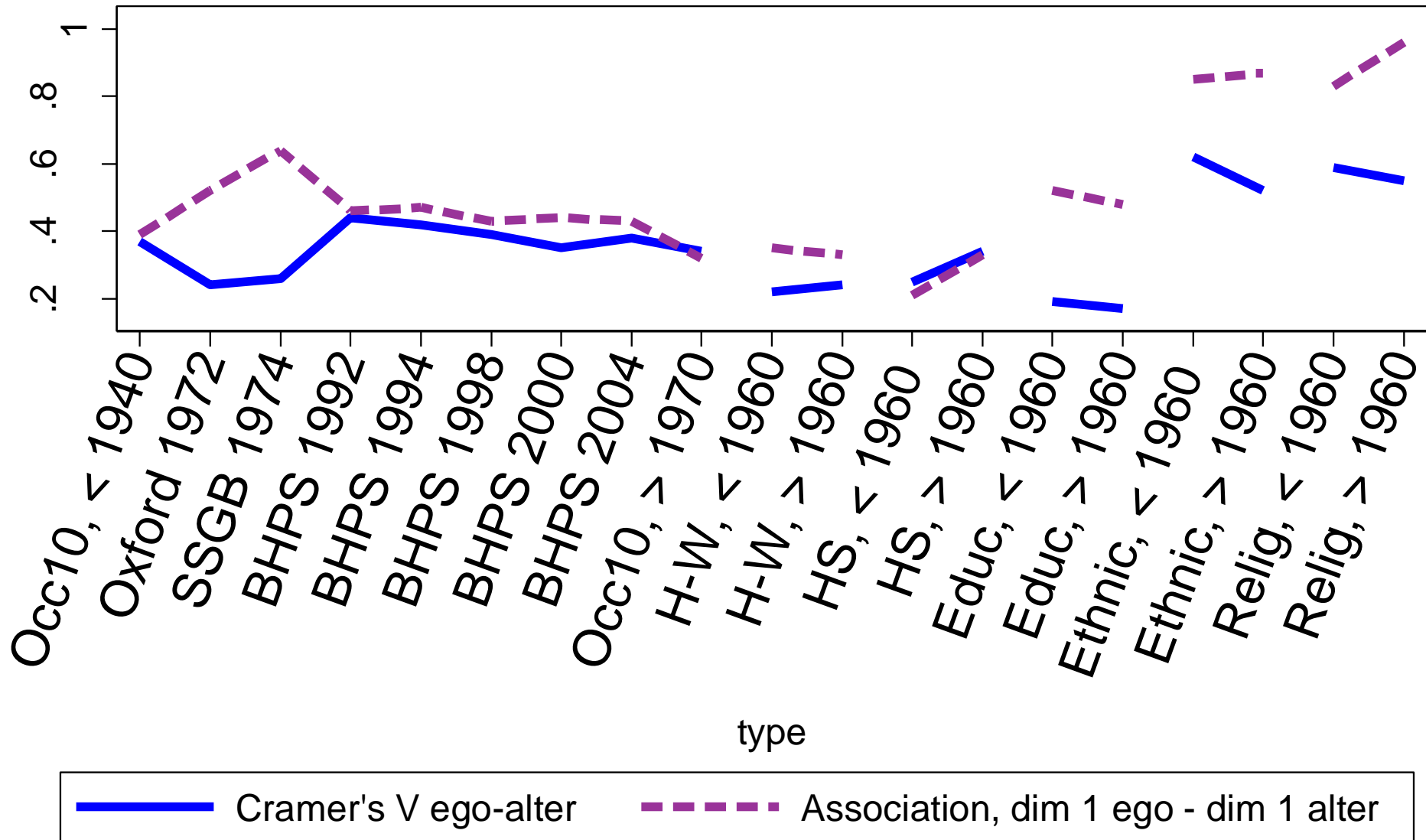
Analysis based on ego-alter associations disaggregated by year of survey or birth year.
Points refer to social distance between occupations unless otherwise indicated.

- It might be more consistent to compare patterns against an anticipated (a priori) trend line?
  - ➢ Either flatline, or linear change by 1 sd each decade, or quadratic by (sd/dec^2)…

Tearing apart!

Pulling apart!

No change

Pushing together!

Crashing together!
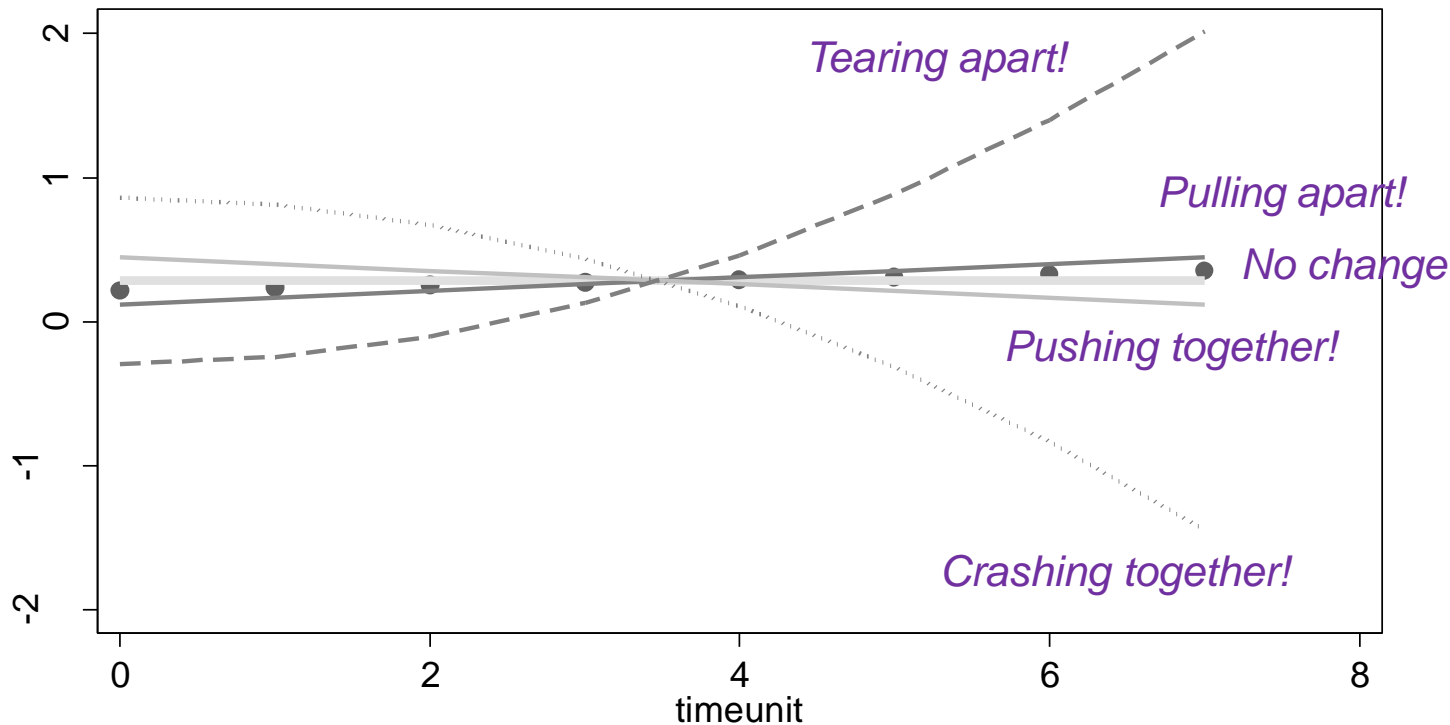
Cramer's V trend with time for education, GHS.

The observed patterns fit somewhat with linear increase but of the options, no change is best

Unconstrained, a more moderate linear increase fits best

● Data points		No change (.875)	
Linear increase (1.849)		Linear decrease (10.4)	
Quadratic increase (276.826)		Quadratic decrease (336.548)	

Statistics are a mean value for the squared error expressed as a proportion of the variance

Social distance trends in Britain

GHS data, 72-04	Type of Stat.	Best trend line
Educ (4) by yob	Cramer's V	**No change (+)**
``	HW Dim 1 cor.	**No change (+)**
``	High-Low dist.	**No change (--)**
``	H-L occurrence	**No change (-)**
	H-W strat cor.	
Educ (4) by yob	Cramer's V	**Pulling apart (+)**
for age 40-50	HW Dim 1 cor.	**Pulling apart (+)**
``	High-Low dist.	**Pulling together (-)**
``	H-L occurrence	**No change**
	H-W strat cor.	
Educ(14) by yob	Cramer's V	**No change (++)**
``	HW Dim 1 cor.	**No change (++)**
``	High-Low dist.	**No change**
``	H-L occurrence	**No change (-)**
	H-W strat cor.	

What about in comparison to other countries?

Occupational social distance scores for ISCO major groups, 1990's - 2000's

Legend:
- ESS 2002-10, Professional
- ESS 2002-10, Elementary
- ISSP 1990-6, Professional
- ISSP 1990-6, Elementary
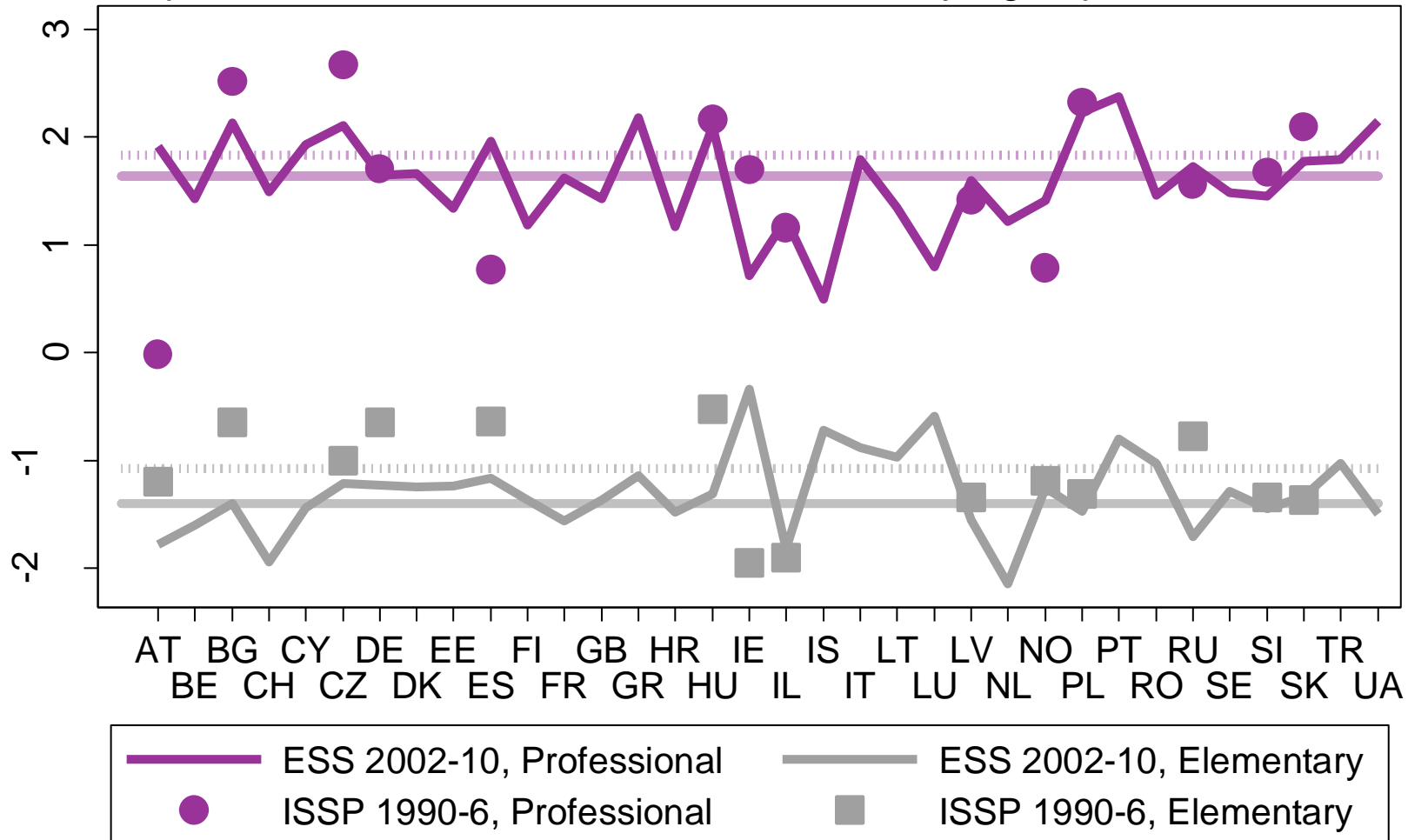
Data from ISSP, 1990-1996, and ESS 2002-2010. Husband-Wife occupations.
Horizontal lines show cross-country means (continuous for 2002-10; dashed for 1990-6)

IPUMS-I: Categorical measures used

1. Legislators, senior officials and managers
2. Professionals
3. Technicians and associate professionals
4. Clerks
5. Service workers and shop and market sales
6. Skilled agricultural and fishery workers
7. Crafts and related trades workers
8. Plant and machine operators and assemblers
9. Elementary occupations
10. Armed forces

1. Less than primary completed
2. Primary completed
3. Secondary completed
4. University completed

1. No religion
2. Buddhist
3. Hindu
4. Jewish
5. Muslim
6. Christian
7. Other

10. White
20. Black
21. Black African
22. Black Caribbean
24. Other Black
31. American Indian
41. Chinese
42. Japanese
43. Korean
44. Vietnamese
45. Filipino
46. Indian
47. Pakistani
48. Bangladeshi
49. Other Asian
55. Two or more races
60. Other

Global orders of social interaction distance…
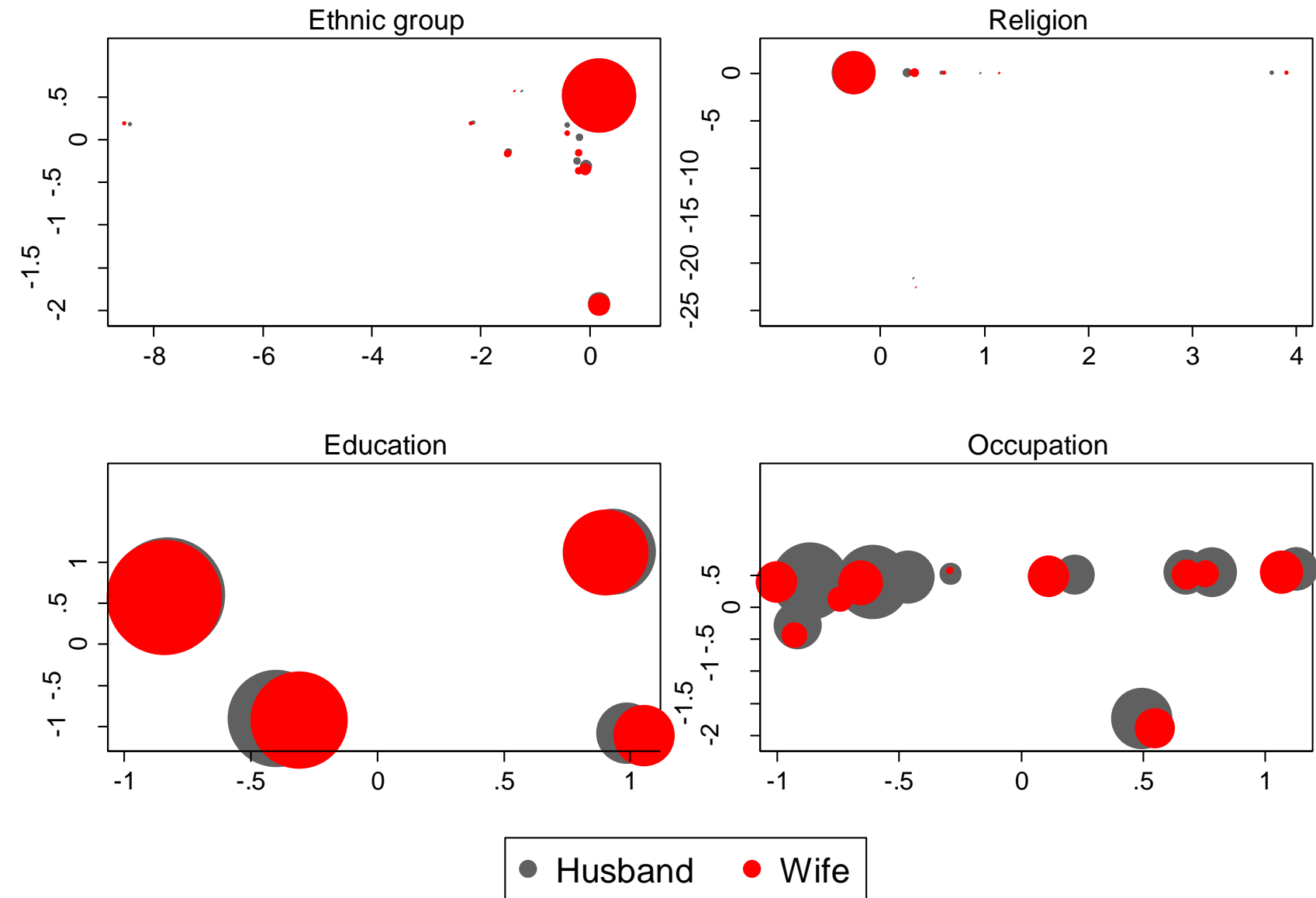
International trends in social distance
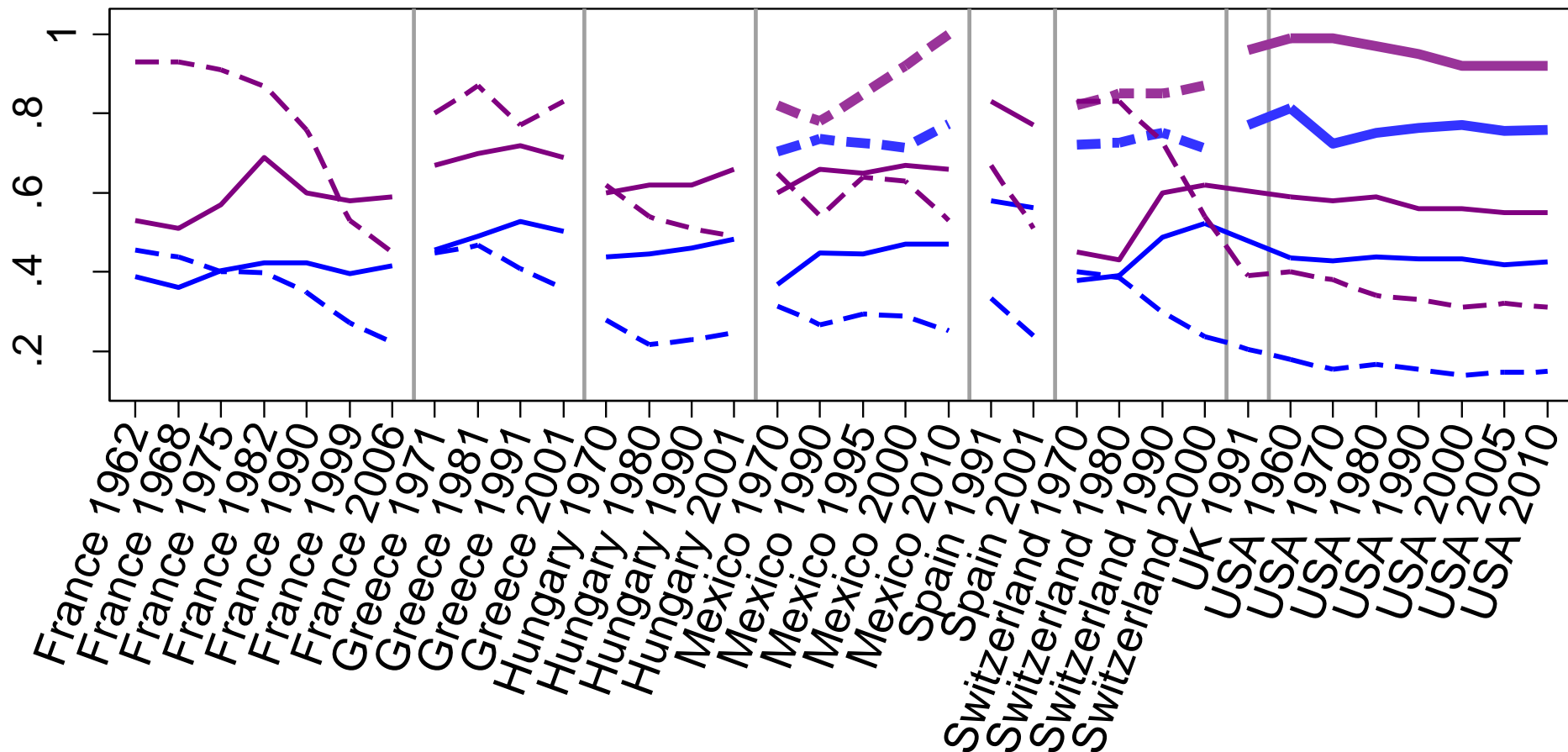
Analysis based on husband-wife associations from IPUMS-I data.
Blue lines = Ego-alter Cramer's V. Purple lines = Ego-Alt dim1 association

Legend:
- **Ethnicity** (thick blue solid)
- **Religion** (thick blue dashed)
- Education (thin blue solid)
- Occupation (thin blue dashed)

3) Social distance patterns for other social relationships

Example: newspaper readership:

•Britain has a small number of wide circulation newspapers with distinctive characteristics

•Strong links between readership patterns and stratification outcomes (e.g. Chan & Goldthorpe 2007)

➢*Elective behaviour – easier, in principle, to change*
➢*Influence on values, voting*
➢*Influence on economic aspirations/behaviour*

Ego-alter newpapers, BHPS 1991,2,6,7,2004 (5k non-diagonals, excluding 36k diag)
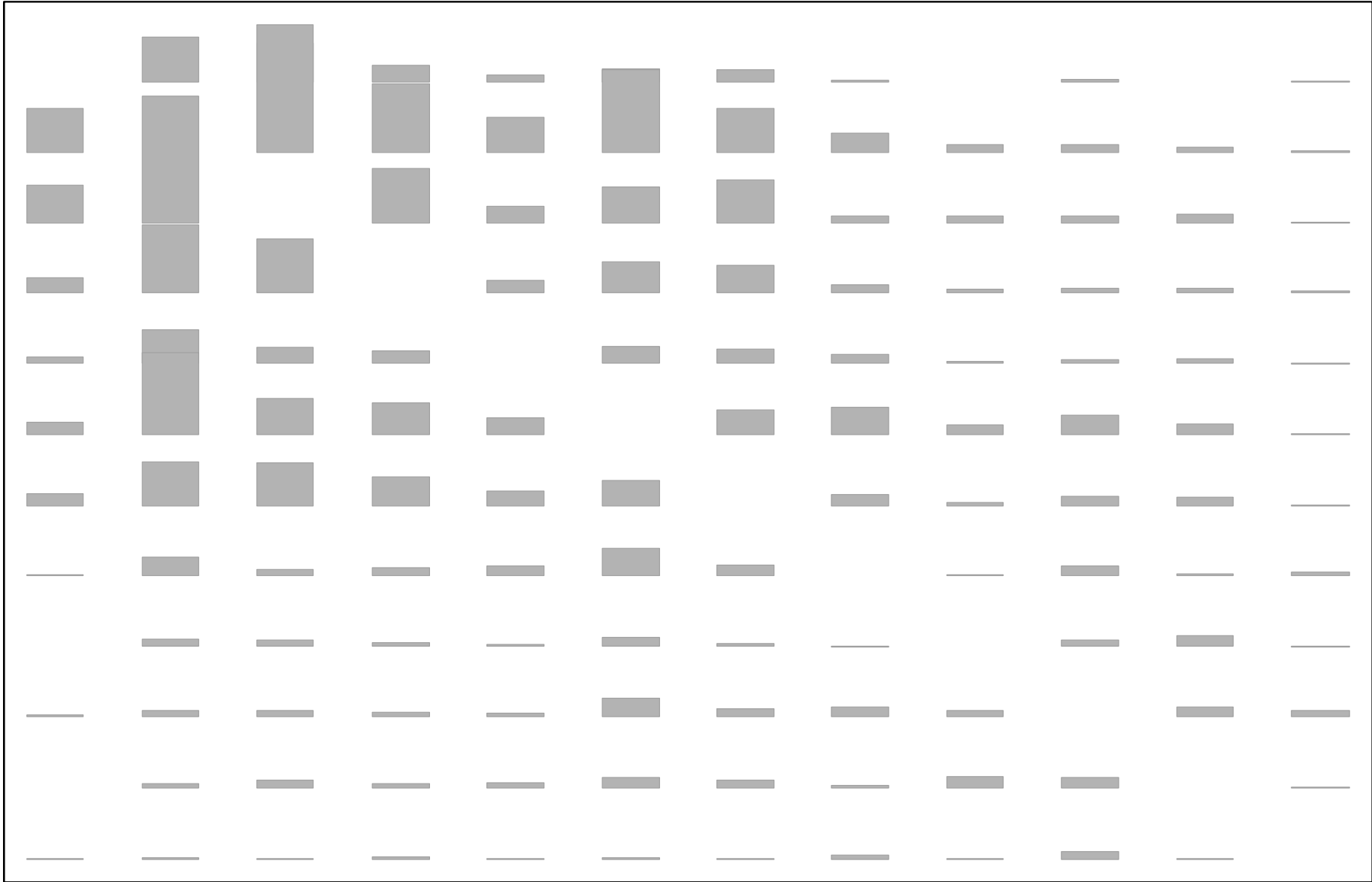
Papers are in rank order of average CAMSIS score of readers

1st 2 dimensions of social distance between newspaper readers
(model including diagonals)

Daily Express

Daily Telegraph

Sun

Other

Daily Mail

Daily Star

Daily Mirror/Record

Regional

Financial Times

Times

Independent

Guardian
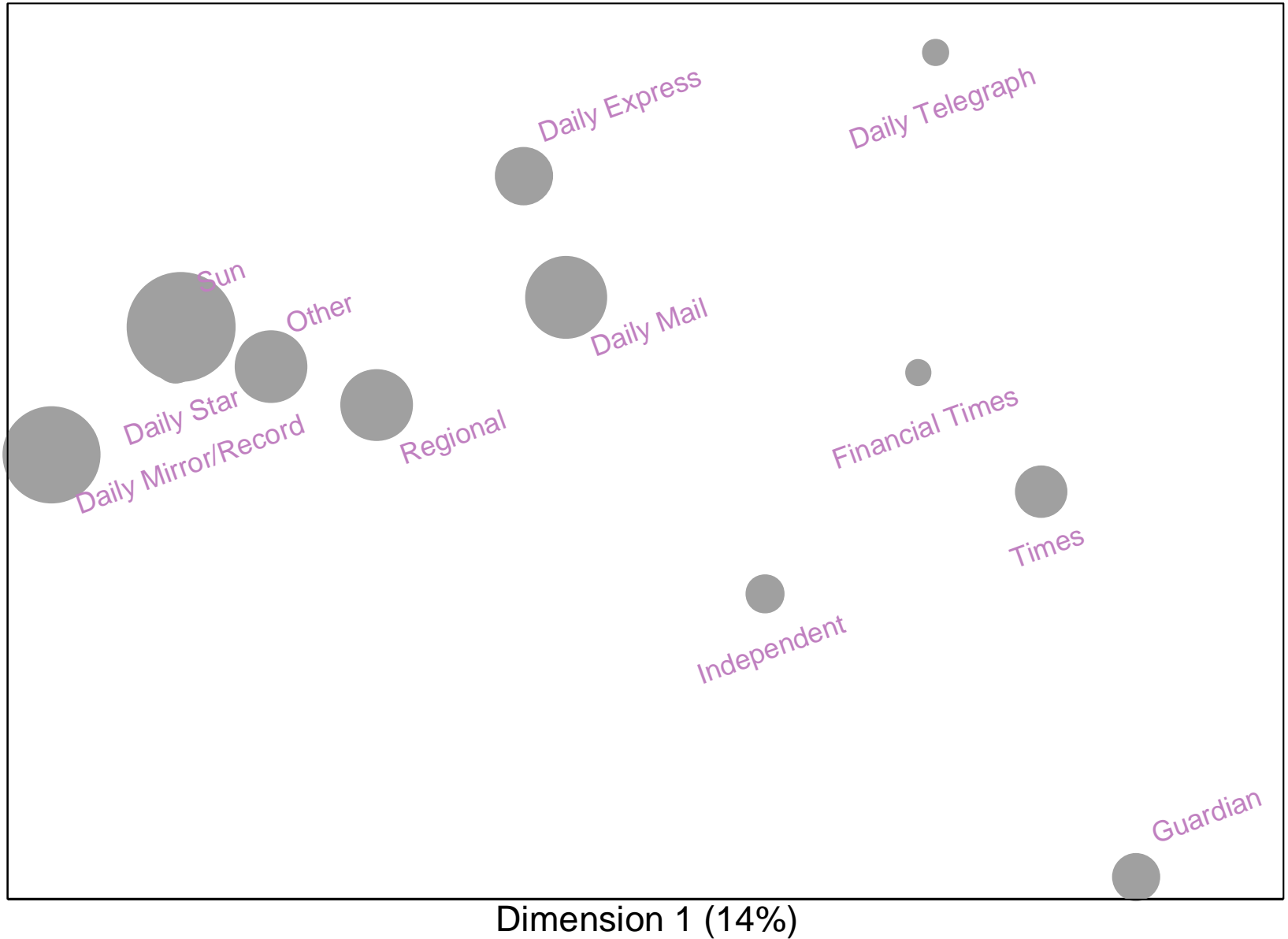
Dimension 1 (14%)

2 dimensions of social distance between newspaper readers
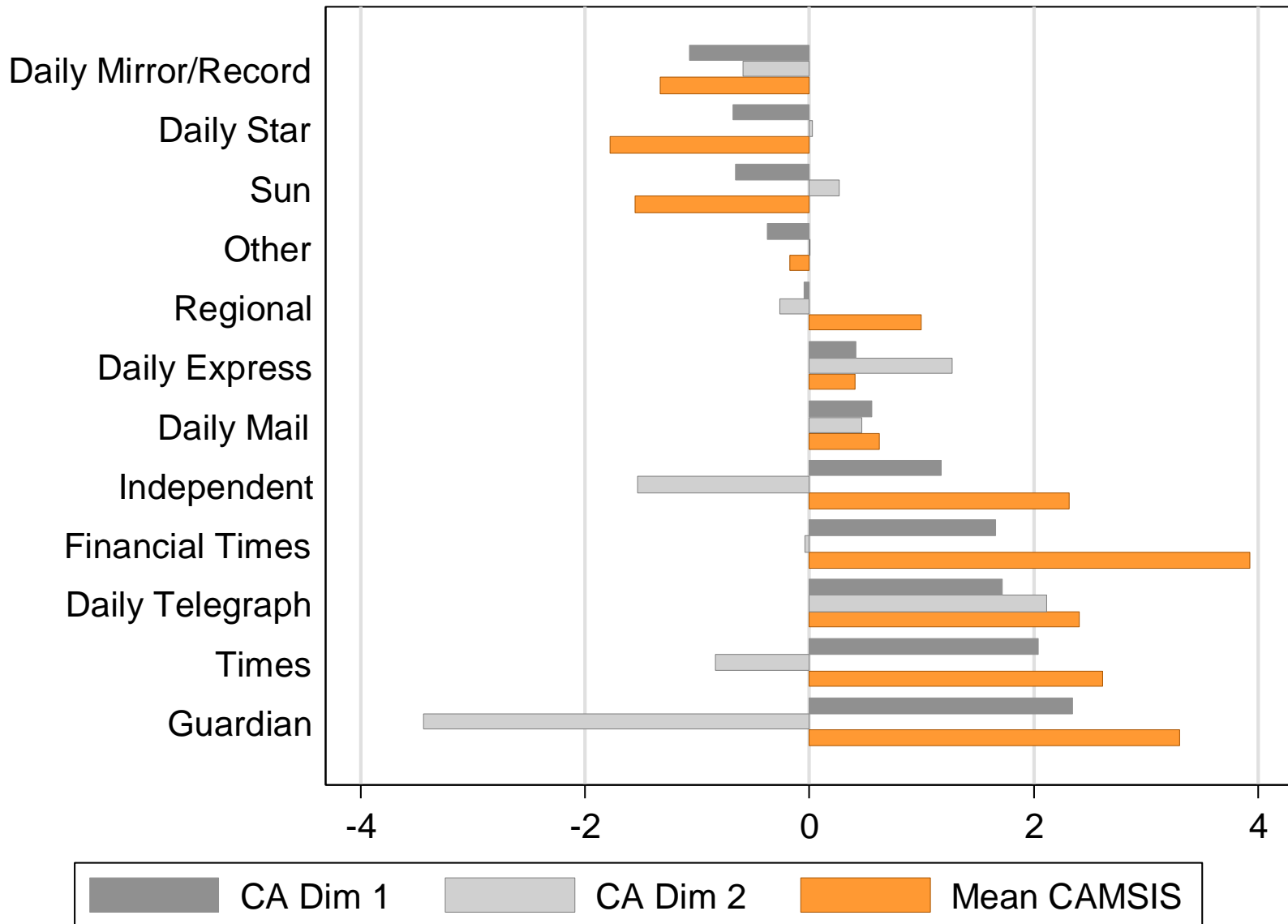
Correlations between newspaper readership dimension scores and other selected measures (BHPS individuals)

	Dim 1 (newsp)	Mean CAMSIS (by newsp)	Indv CAMSIS	Indv Degree
	Sqrt of r2 or pseudo-r2 linear or logit regression			
Smoking	0.161	0.124	0.188	0.119
Self-confidence	0.015	0.001	0.016	0.000
Pers. Income	0.151	0.097	0.261	0.233
Home own/buy	0.136	0.099	0.215	0.044
Volunteer	0.206	0.177	0.164	0.119
Any investmt. Inc.	0.238	0.163	0.216	0.128
Age (linear)	0.055	0.062	0.005	0.135
Gender	0.030	0.011	0.047	0.033

Change over time? BHPS Correlations between newspaper readership dimension scores and other measures by age groups ('Britain pulling together'?)

	Dim 1 (newsp)			Indv CAMSIS (most recent job)		
	All (n=9409)	*Pre-1960 (n=3156)*	*Post-1960 (n=3046)*	All	Pre-1960	Post-1960
Ego-alt corel.	0.79	0.86	0.73	0.39	0.43	0.39
``newsp. asc.	0.62	0.72	0.58			
	Sqrt of r2 or pseudo-r2 linear or logit regression					
Smoking	0.16	0.19	0.08	0.19	0.16	0.17
Self-confid.	0.02	0.01	0.01	0.02	0.02	0.03
Pers. Income	0.15	0.16	0.05	0.26	0.24	0.22
Home own/b.	0.14	0.25	0.04	0.22	0.23	0.16
Volunteer	0.21	0.16	0.20	0.16	0.22	0.12
Any invest Inc.	0.24	0.25	0.26	0.22	0.25	0.21
Age (linear)	0.06	0.04	0.14	0.01	0.10	0.08
Gender	0.03	0.03	0.01	0.05	0.05	0.14

All adults (1991-2011)
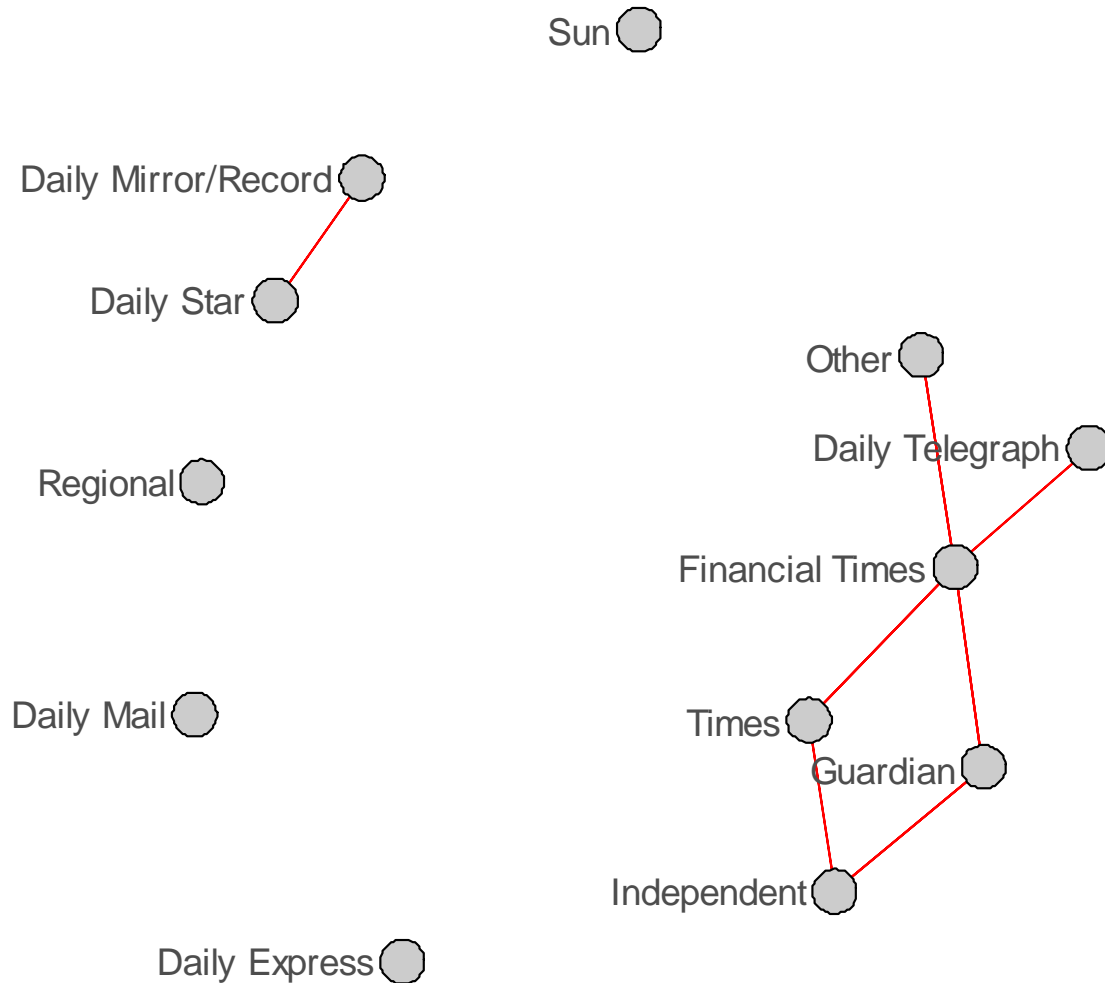
Nodes represent newspapers; ties between nodes indicate relatively more common for two individuals who read the two papers to have a social connection (here= coresidence)

Births after 1960 (1991-2011)

Other
Guardian
Independent
Daily Express
Financial Times
Times
Sun
Telegraph
Daily Mirror/Record
Daily Star
Daily Mail
Regional
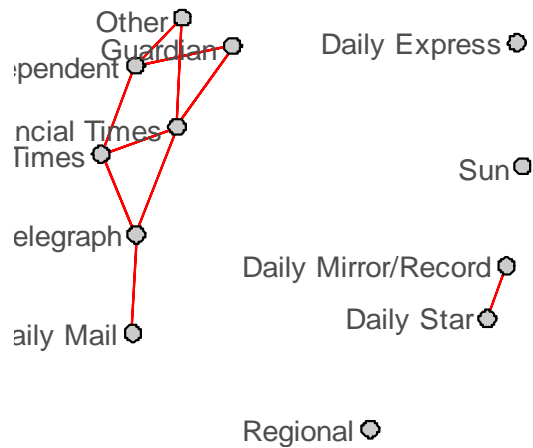
Births before 1960 (1991-2011)

Daily Express
Daily Telegraph
Daily Mirror/Record
Regional
Sun
Guardian
Daily Star
Independent
Daily Mail
Other
Times
Financial Times
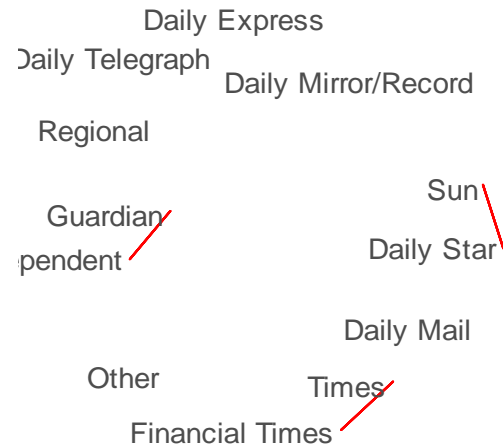
(Comparisons suggest ageing and/or cohort change in social distance?)

Recent adults (2004, 2011)

Independent
Daily Mail
Guardian
Times
Financial Times
Sun
Other
Daily Star
Telegraph
Daily Mirror/Record
Daily Express
Regional
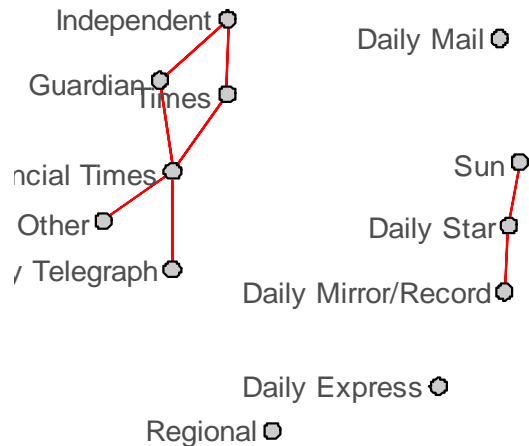
Earlier adults (1991-8)

Express
Guardian
Times
Independent
Daily Telegraph
Financial Times
Mail
Other
Regional
Daily Star
Mirror/Record
Sun

36

England
(1,396 pairs, min. 4 ties)
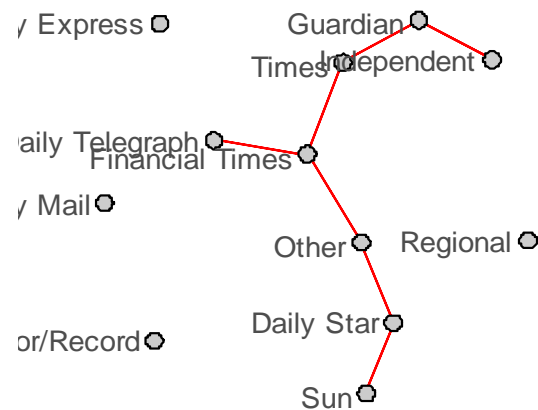
UKHLS 2011 - Partners reading diff. papers

Ignores cases which read same paper (67% of couples in England and 69% in Scotland)
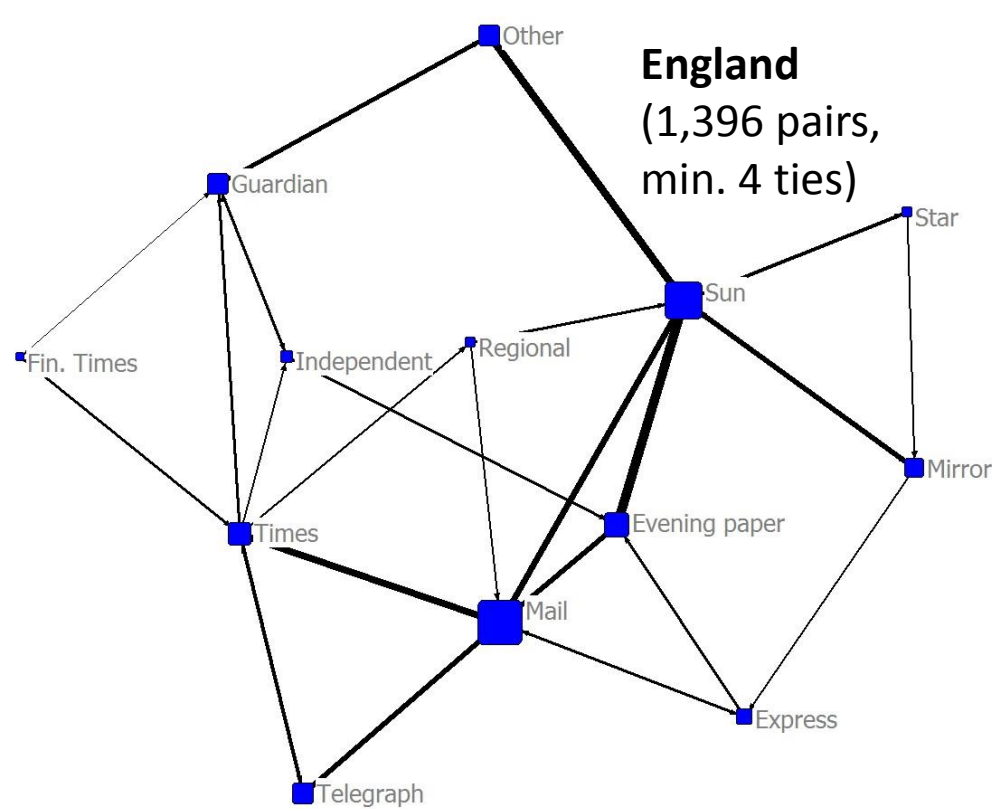
Scotland
(197 couples, min. 2 ties)
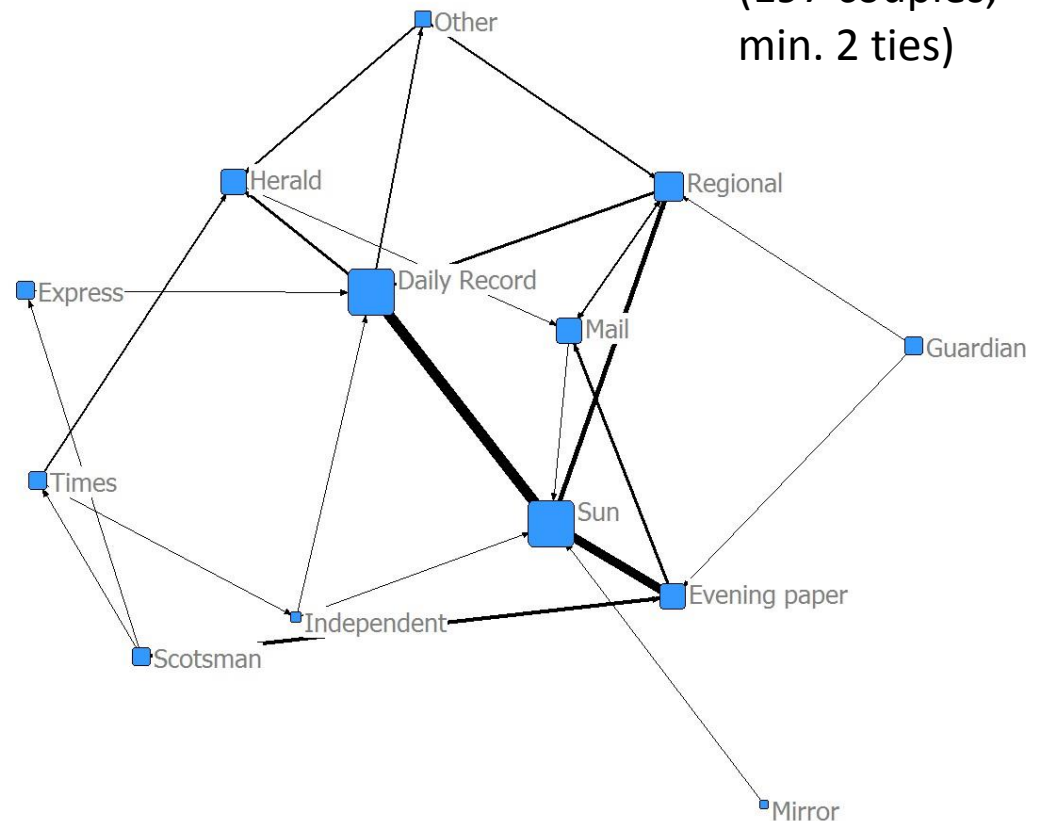
Daily Record most popular in Scotland, Daily Mail in England – different papers

Broadsheet readers all linked in England, but divided in Scotland.

Regional and evening papers closer to right-wing/Murdoch papers in England

Both < 50 yrs (Scotland)
(99 couples)
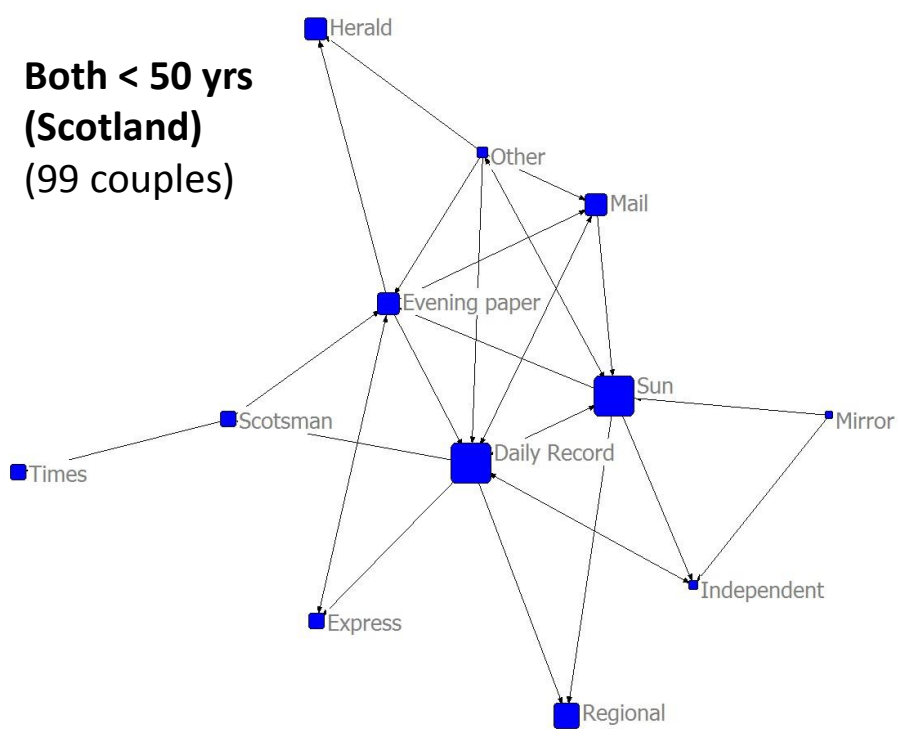
UKHLS 2011 - Partners reading diff. papers

Ignores couples which read same paper (39% of younger couples and 73% of older couples). UKHLS, 2011 (min. 2 ties).

Males > 50 yrs, females > 45 (Scotland)
(98 couples)

Older couples links mostly involve Daily Record.

Younger couples show many more links in the papers they read, and more often read different papers.

Evidence that younger couples are more cosmopolitan / Britain isn't pulling apart?
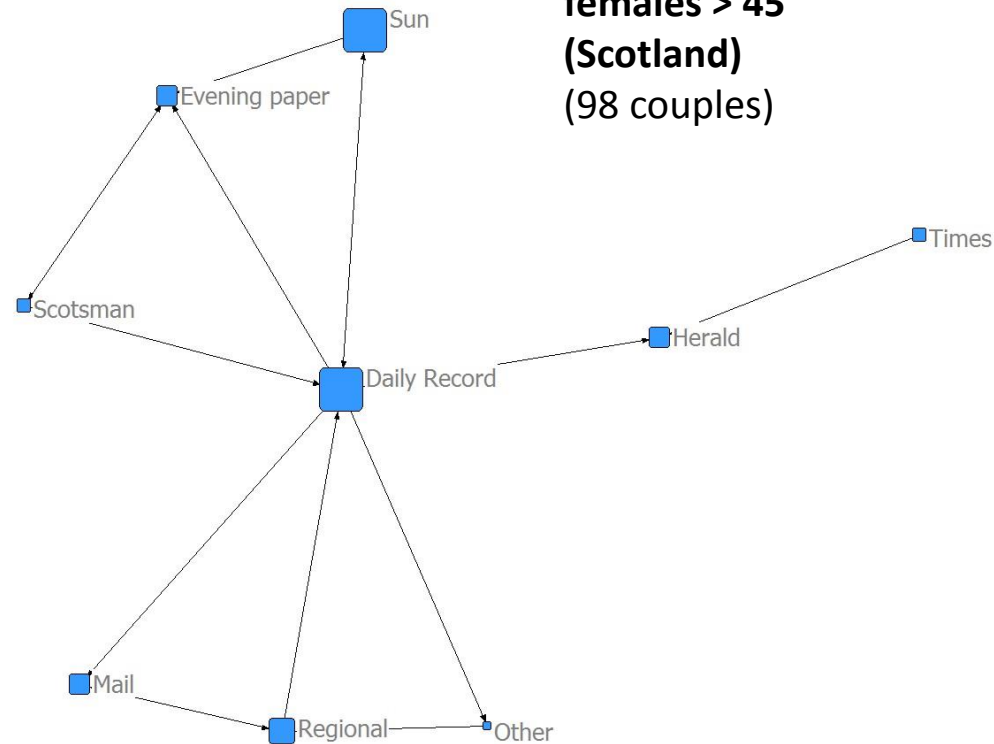
Summary on newspaper readership in the UK

- Dimensions to newspaper readership social interaction patterns
  - First dimension is probably stratification and/or education
  - Second dimension may be politics
  - {Other dimension may be gender, region, lifestyle}
- Dimensions are sensitive to category definitions

- Social distance between newspaper readership categories might have declined through time…
- …but this analysis doesn't disaggregate ageing and cohort effects

'Catnets' in leisure and consumption?

- **Cat**egories of social **net**works (White, 1992)
  - E.g. a student might have networks amongst others from the same course, same halls, same sports teams (and combinations of more than one)

- 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? Both vote like me and read the same paper?
  - Which categories matter more (& does this change?)

- Homophily itself likely to result from several different processes - propinquity, attraction, assimilation

Example: UKHLS, Wave 3 (2011-2), categories in 4 domains

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

- 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 should be able to take these issues into account

Empirical combinations of categories between an ego (left) and alter (right) were studied here in terms of values over 2 measures

Ego: University, Catholic, left, broadsheet

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

Alter: Univ., Islam, centre, tabloid

- University+Islam
- University+centre
- University+tabloid
- Islam+centre
- Islam+tabloid
- Centre+tabloid
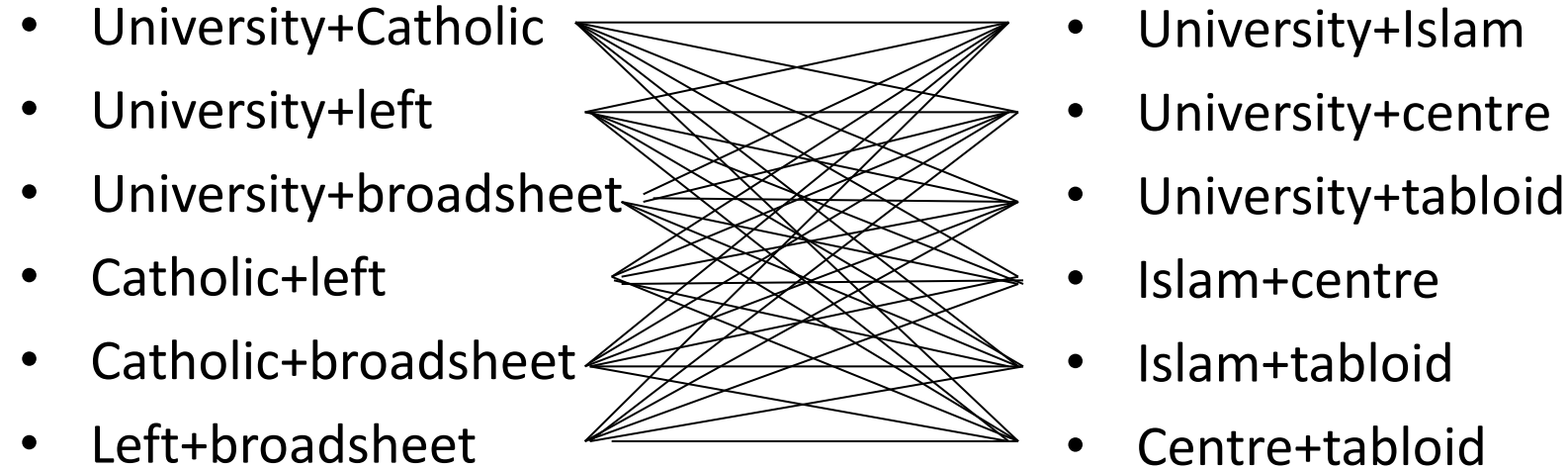
- Up to 6 'identities' can be created per person
  (36 possible identity combinations per couple)

- Exemplar combination above shows homogamy in terms of education, but not in terms of religion, politics or news consumption

Combinations that occur >10 times expected ratio, & at least 7 times in total (UKHLS, Wave 3) Colours reflect the two categories comprising the characteristic.
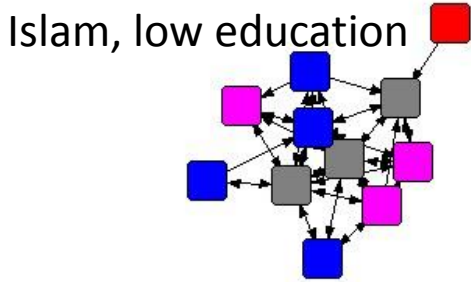
Hindu
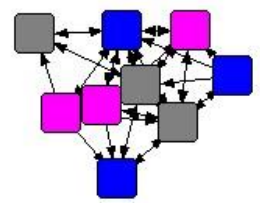
Religion dominates the most over-represented social interaction patterns

Islam, low education

Sikh, low education
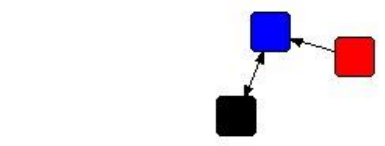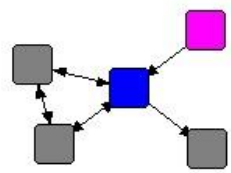
Centre/Right, higher educ.

Protestant, Centre, higher educ.
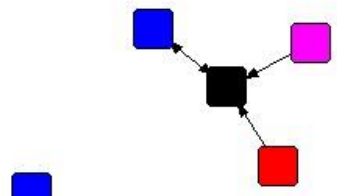
Jewish, higher educ.
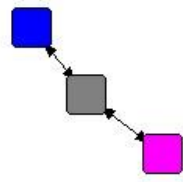
Regional, Centre

Left and Centre

43

http://www.camsis.stir.ac.uk/pullingapart
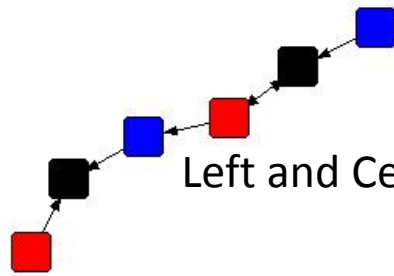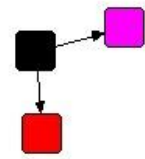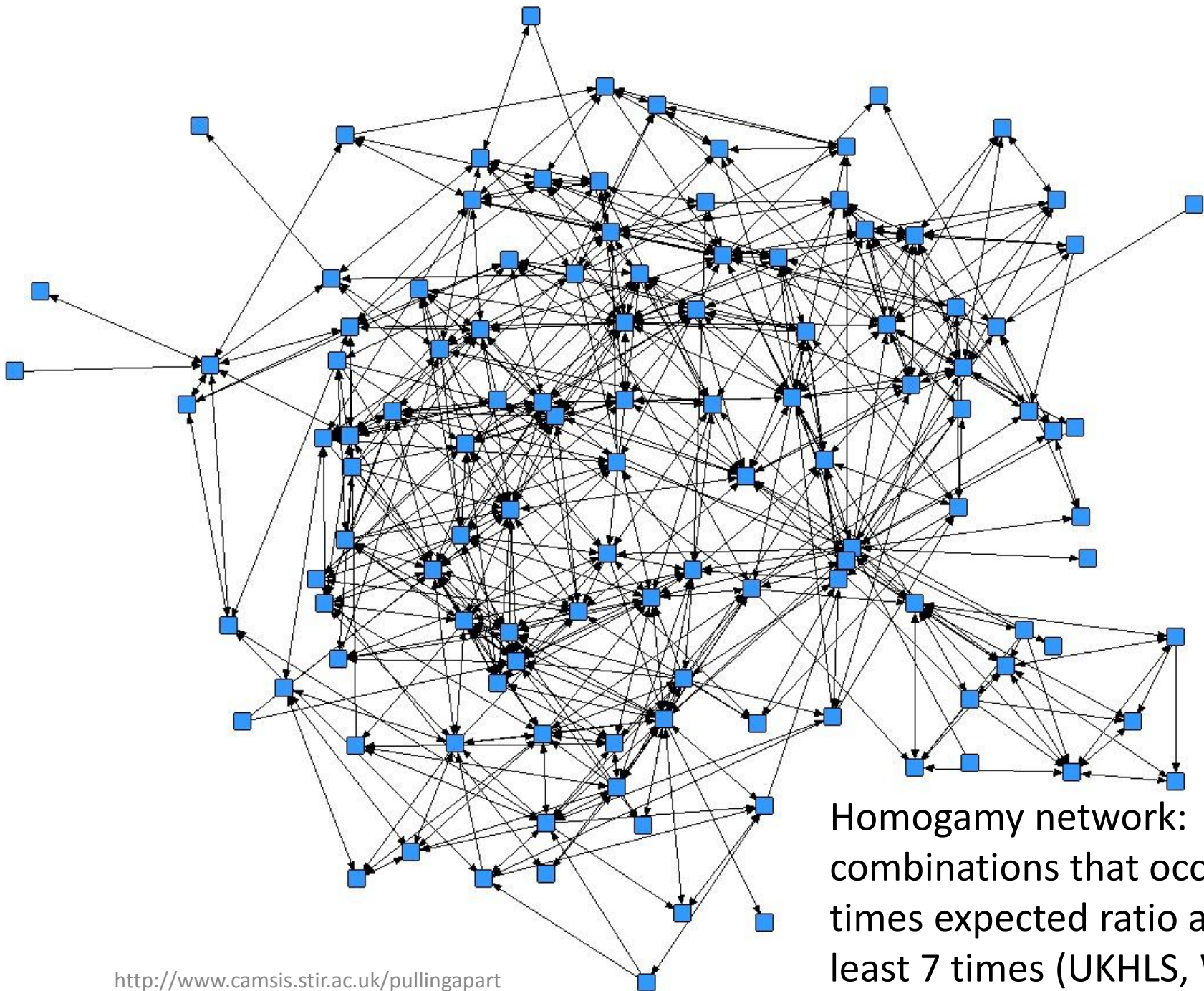
Homogamy network: combinations that occur >2 times expected ratio and at least 7 times (UKHLS, Wave 3)

QAP Regression of over-represented ties (UKHLS – Wave 3)

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**	.04***	.09***
Two-categ.	.27	.43***	.55***
Edu	.12**	.09***	.07**
Views	.05*	.18***	.12***
Paper type	.01	.13***	-.00
Adj. R2	.18**	.54***	.52***

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

Homogamy shows little difference between younger and older cohorts, aside from news consumption

Combining cohorts produces different model to the within-cohorts results, signifying different patterns.

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.

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

Schematic example of using loglinear model to assess forms of homogamy, using 'diagonal' terms

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 3: 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)

Homogamy effects broken down by age

	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 & 2-c)	.2951	1,300,583	.2264	1,363,381

UKHLS Wave 3: 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%	Two-categ.	.3270	24.7%
Paper type	.2996	15.8%	Religion	.3398	26.5%
Two-categ.	.2951	18.4%	Paper type	.3206	30.9%
Religion	.2851	54.7%	Views	.3177	35.9%

47

Born Cohort *Sample*	Pre-1940 older *1991*	1940-1973 younger *1991*	Pre 1960 older *2011/12*	Post 1960 younger *2011/12*	Older cohort generally more homogamous; no trend effects between surveys
Independence	.371	.335	.367	.332	
Full	.229	.202	.215	.201	
Full (except 2 level)	.229	.202	.215	.201	
Full (except 2 level & 2-c)	.242	.201	.226	.295	

Religion, for older UKHLS, seems an outlier; Trend for views and paper type to become same (assimilation?); Educational similarity for 'generation X'?

Born Sampled	Pre-1940 1991 (older)		1940-1973 1991 (younger)		Pre 1960 2011/12 (older)		Post 1960 2011/12 (younger)	
	Delta	% of BIC decrease	Delta	% of BIC decrease	Delta	% of BIC decrease	Delta	% of BIC decrease
Paper	.350	23.8%	.326	10.6%	.321	30.9%	.300	15.8%
Two-cat.	.314	20.1%	.283	20.3%	.327	24.7%	.295	18.4%
Education	.363	6.6%	.308	23.8%	.346	12.1%	.313	3.8%
Views	.326	42.9%	.297	28.2%	.318	35.9%	.305	14.8%
Religion	.319	57.1%	.295	42.5%	.340	26.5%	.285	54.7%

BHPS wave 1 (1991)
Average degree of 6, at least 3 cases, for
homogamy (red) and homophily (blue)
(both in black)
26.2% of top ties in both
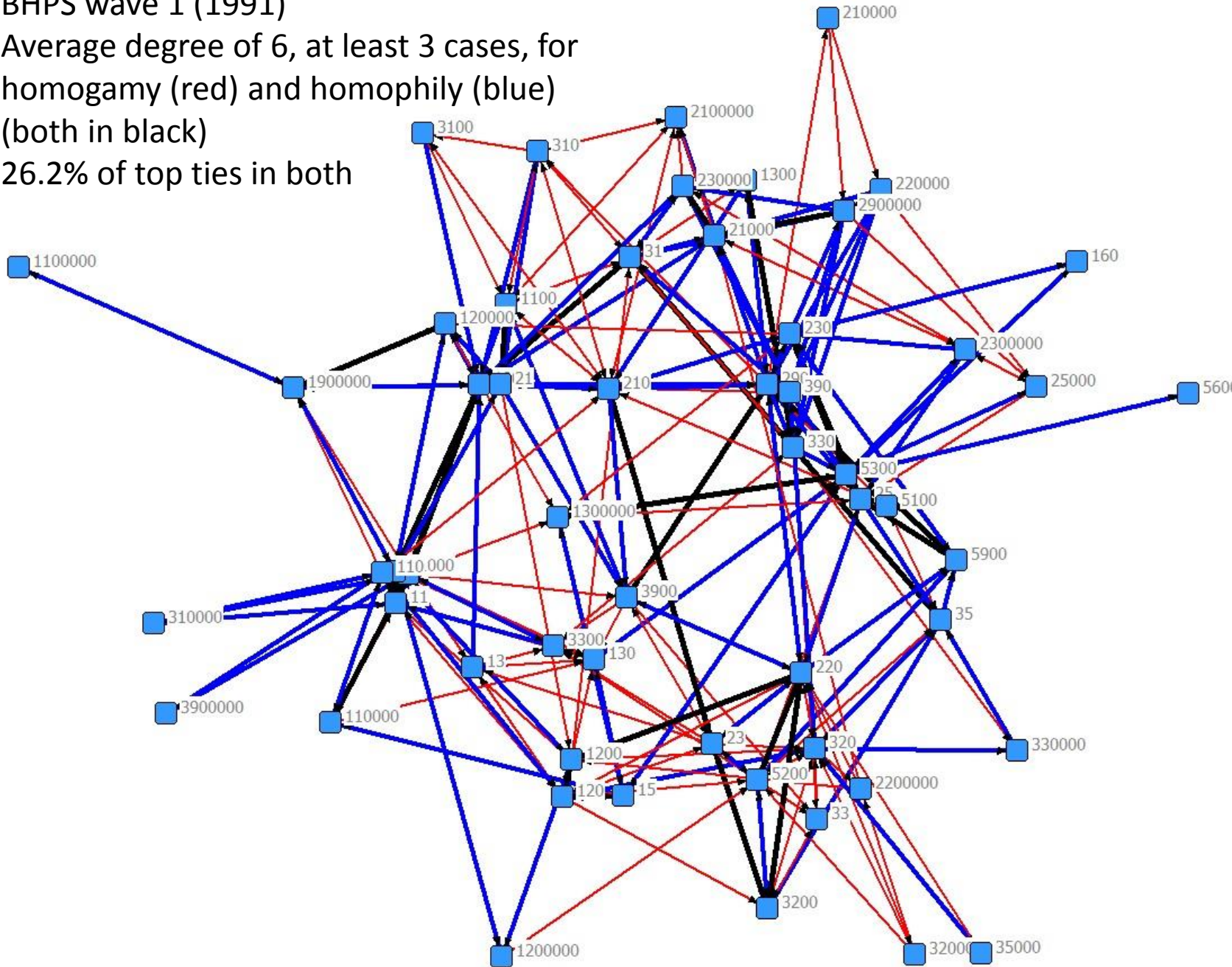
UKHLS wave 3 (2010)
Average degree of 6, at least 7 cases, for homogamy (red) and homophily (blue) (both in black)
4.2% of top ties in both
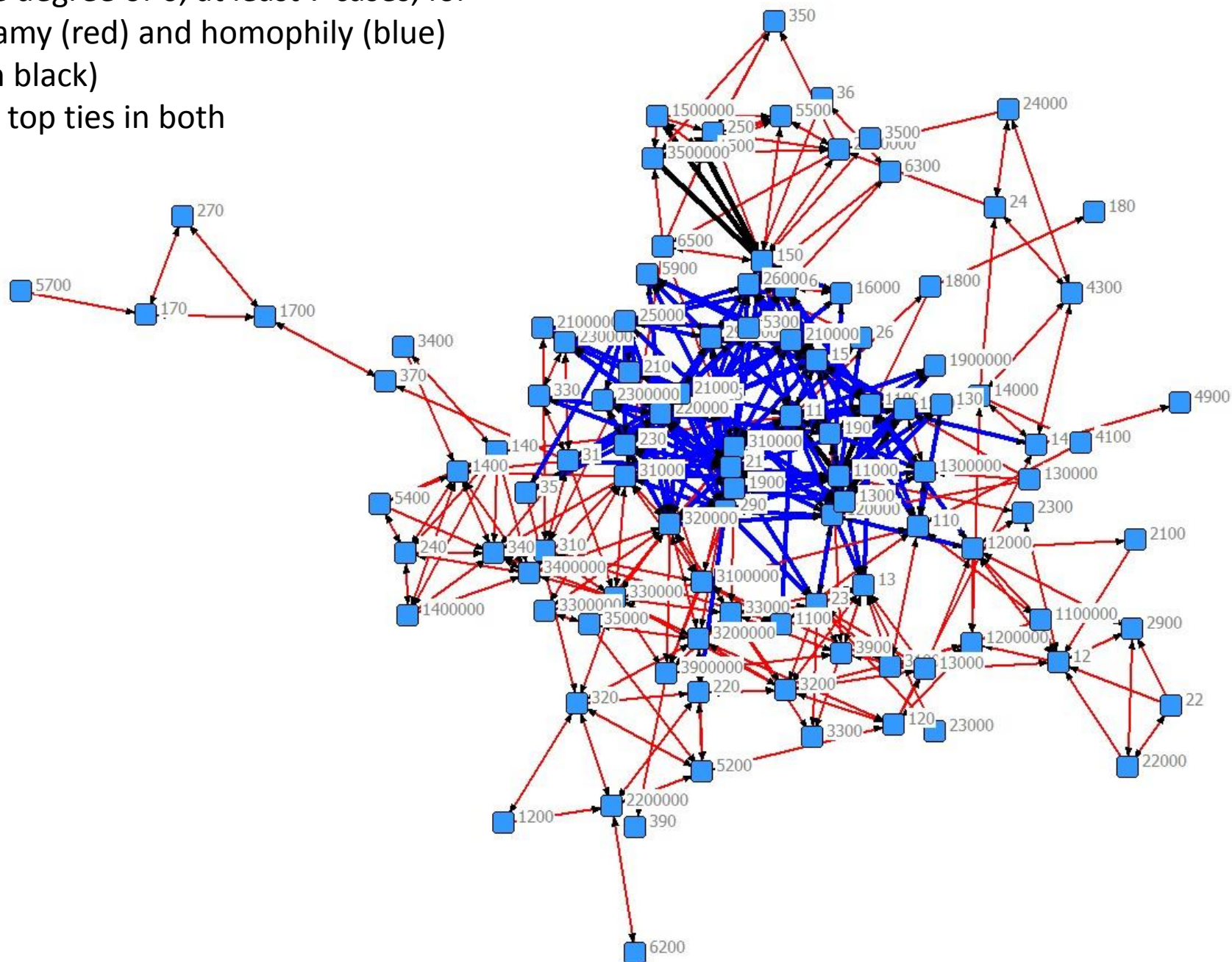
Summary on lifestyle patterns

- Strong influence of social structure of inequality in other domains of behaviour (dimensions of interaction are shaped by social stratification)

- Mixed / inconclusive evidence of trend through time
  - Also true for other items that we've measured (e.g. sports participation)
  - Difficulty of distinguishing cohort from ageing effects

- Combinations of identities or 'Catnets' are not especially critical (it's positions themselves that matter most)

Summary – was Britain pulling apart?

- No, of course not!

- It might be pulling together

- Interesting parallels with debates on social mobility

Social mobility in Britain by year of birth (splines)
Ages 25 to 80. Men only.

Data from the 'Slow degrees' pooled survey dataset - see Lambert et al. (2007). N = 72509.
Points are correlation statistics for father-child association, 5 year surveys / 10 year birth cohorts.

52
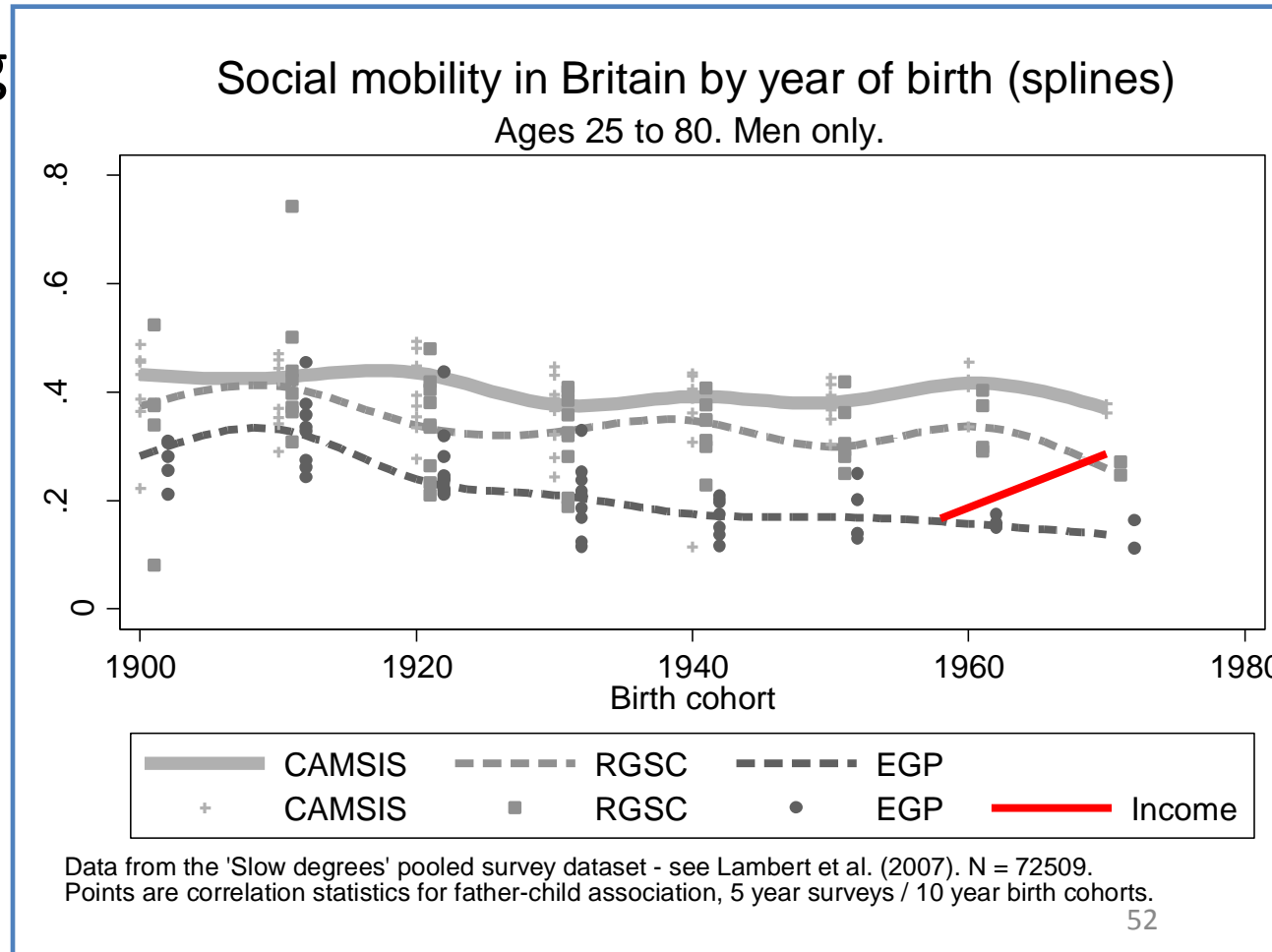
More summary

- Models of change suggest a society closer to the social stability and/or modernisation characterisation, not that of unfettered inequality/individualisation/neo-liberalism

- There are interesting low-dimensional structures in all social interaction patterns

- The leading dimensions are often but not always influenced by stratification

- Age matters <-> is 'Britain pulling apart' just 'Britain getting older'?

- *Social connections are increasingly studied (e.g. Christakis and Fowler 2010). They are sometimes used to exclude others, but are often used with beneficence (cf. Swift 2004), and they probably balance. They can work as a barometer of social change and social inequality - but they will tend to be stuck at 'wet and mild'…*

53

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  - ..

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Appendices

Data: ego-alter pairs

- BHPS analysis
  - Dataset (a) is of main respondent interviewee with associated proxy information on their nominated best friend (average of 15k ego-alter pairs per year).
  - Dataset (b) is of main respondent male interviewee with associated information on a co-resident female spouse (average 5k both-working spouses each year).
  - Dataset (c) is of main respondent interviewees with associated information on a co-resident same-sex adult (average 2k both-working same-sex sharers each year)
  - Also make comparisons with c30000 friends from Oxford Mobility Survey 1972, and c25000 friends from Social Status in Great Britain 1974
- Comparative analysis with IPUMS-I data
  - Datasets of adult males with associated information on a co-resident female spouse (average N ~= 250000 per society)
  - Could also construct datasets of adults with information on other co-residents, e.g. a same-sex adult – work to follow

…important challenges to studying social distance patterns…

- Data
  - Coverage of social connections on high quality datasets
  - Choosing input categories: A, B and C; or A and (B+C)?
  - Comparing social categories in comparative research?
  - Comparing types of social relations
- Analysis
  - Dealing with 'diagonals' (and 'pseudo-diagonals')
  - Lack of agreed standard diagnostics (interpretive element)
- Interpretation
  - Other things than stratification influence social connections
  - Interpreting and distinguishing social distance 'dimensions'
  - Focus upon overall patterns, of specific connections?

Data from IPUMS-I: Males from selected samples with valid data on at least one harmonised measure for spouses

Year	USA	Mexico	France	Greece	Hungary	Spain	Switzerla	UK	Total
1960	405,768	0	0	0	0	0	0	0	405,768
1962	0	0	528,821	0	0	0	0	0	528,821
1968	0	0	569,997	0	0	0	0	0	569,997
1970	443,605	73,376	0	0	129,767	0	71,445	0	718,193
1971	0	0	0	193,085	0	0	0	0	193,085
1975	0	0	620,916	0	0	0	0	0	620,916
1980	480,336	0	0	0	134,216	0	75,035	0	689,587
1981	0	0	0	235,966	0	0	0	0	235,966
1982	0	0	642,975	0	0	0	0	0	642,975
1990	478,472	373,774	574,790	0	121,971	0	83,864	0	1,632,871
1991	0	0	0	245,099	0	457,935	0	133,311	836,345
1995	0	60,819	0	0	0	0	0	0	60,819
1999	0	0	551,878	0	0	0	0	0	551,878
2000	493,511	335,456	0	0	0	0	85,970	0	914,937
2001	0	0	0	256,139	120,172	474,794	0	0	851,105
2005	677,610	0	0	0	0	0	0	0	677,610
2006	0	0	499,577	0	0	0	0	0	499,577
2010	692,017	326,879	0	0	0	0	0	0	1,018,896
Total	3,671,319	1,170,304	3,988,954	930,289	506,126	932,729	316,314	133,311	11,649,346

Patterns and trends: husband-wife ethnicity

	CV	HDim1-HICAM; WDim1-WICAM; HICAM-WICAM; HDim1-WDim1		CV	HDim1-HICAM; WDim1-WICAM; HICAM-WICAM; HDim1-WDim1
USA 1960	0.813	14; 23; 37; 99	France 1962		
USA 1970	0.723	13; 15; 36; 99	France 1968		
USA 1980	0.751	10; 8; 33; 97	France 1975		
USA 1990	0.765	7; 6; 31; 95	France 1982		
USA 2000	0.771	7; 6; 30; 92	France 1990		
USA 2005	0.756	2; 1; 29; 92	France 1999		
USA 2010	0.758	7; 3; 30; 92	France 2006		
Mexico 1970			Greece 1971		
Mexico 1990			Greece 1981		
Mexico 1995			Greece 1991		
Mexico 2000			Greece 2001		
Mexico 2010			Hungary 1970		
Switzerland 1970			Hungary 1980		
Switzerland 1980			Hungary 1990		
Switzerland 1990			Hungary 2001		
Switzerland 2000			Spain 1991		
UK 1991	0.772	1; 1; 38; 96	Spain 2001		

Patterns and trends: husband-wife religion

	CV	HDim1-HICAM; WDim1-WICAM; HICAM-WICAM; HDim1-WDim1		CV	HDim1-HICAM; WDim1-WICAM; HICAM-WICAM; HDim1-WDim1
USA 1960			France 1962		
USA 1970			France 1968		
USA 1980			France 1975		
USA 1990			France 1982		
USA 2000			France 1990		
USA 2005			France 1999		
USA 2010			France 2006		
Mexico 1970	0.704	5; 5; 52; 82	Greece 1971		
Mexico 1990	0.736	3; 1; 49; 78	Greece 1981		
Mexico 1995			Greece 1991		
Mexico 2000	0.715	3; 3; 51; 92	Greece 2001		
Mexico 2010	0.774	1; 0; 43; 100	Hungary 1970		
Switzerland 1970	0.722	6; 5; 51; 82	Hungary 1980		
Switzerland 1980	0.727	5; 9; 49; 85	Hungary 1990		
Switzerland 1990	0.752	11; 12; 40; 85	Hungary 2001		
Switzerland 2000	0.712	11; 10; 37; 87	Spain 1991		
UK 1991			Spain 2001		

Patterns and trends: husband-wife education

	CV	HDim1-HICAM; WDim1-WICAM; HICAM-WICAM; HDim1-WDim1		CV	HDim1-HICAM; WDim1-WICAM; HICAM-WICAM; HDim1-WDim1
USA 1960	0.434	48; 54; 37; 59	France 1962	0.389	50; 55; 50; 53
USA 1970	0.428	51; 54; 36; 58	France 1968	0.360	54; 57; 49; 51
USA 1980	0.438	50; 50; 33; 59	France 1975	0.402	57; 59; 48; 57
USA 1990	0.433	49; 47; 31; 56	France 1982	0.423	59; 60; 51; 69
USA 2000	0.432	51; 49; 30; 56	France 1990	0.423	62; 60; 49; 60
USA 2005	0.419	51; 48; 29; 55	France 1999	0.396	61; 58; 46; 58
USA 2010	0.425	51; 49; 30; 55	France 2006	0.415	57; 56; 40; 59
Mexico 1970	0.367	49; 64; 52; 60	Greece 1971	0.455	58; 74; 70; 67
Mexico 1990	0.448	51; 62; 49; 66	Greece 1981	0.490	62; 79; 69; 70
Mexico 1995	0.446	54; 56; 50; 65	Greece 1991	0.528	58; 70; 60; 72
Mexico 2000	0.469	57; 70; 51; 67	Greece 2001	0.502	53; 64; 58; 69
Mexico 2010	0.469	50; 60; 44; 66	Hungary 1970	0.437	70; 64; 53; 60
Switzerland 1970	0.378	5; 7; 51; 45	Hungary 1980	0.445	55; 66; 50; 62
Switzerland 1980	0.391	9; 11; 49; 43	Hungary 1990	0.459	50; 64; 48; 62
Switzerland 1990	0.487	11; 14; 40; 60	Hungary 2001	0.482	54; 63; 45; 66
Switzerland 2000	0.523	15; 18; 37; 62	Spain 1991	0.580	38; 46; 58; 83
UK 1991			Spain 2001	0.562	33; 39; 38; 77

Patterns and trends: spouse's occupation (1-dig ISCO)

	CV	HDim1-HICAM; WDim1-WICAM; HICAM-WICAM; HDim1-WDim1		CV	HDim1-HICAM; WDim1-WICAM; HICAM-WICAM; HDim1-WDim1
USA 1960	0.179	89; 96; 37; 40	France 1962	0.456	23; 34; 50; 93
USA 1970	0.153	96; 98; 36; 38	France 1968	0.437	21; 33; 49; 93
USA 1980	0.167	96; 97; 33; 34	France 1975	0.400	18; 28; 48; 91
USA 1990	0.153	96; 97; 31; 33	France 1982	0.399	16; 28; 51; 87
USA 2000	0.139	96; 97; 30; 31	France 1990	0.349	16; 24; 49; 76
USA 2005	0.146	95; 96; 29; 32	France 1999	0.270	66; 64; 46; 53
USA 2010	0.148	95; 96; 30; 31	France 2006	0.223	89; 85; 40; 45
Mexico 1970	0.313	58; 70; 52; 65	Greece 1971	0.447	81; 87; 70; 80
Mexico 1990	0.267	58; 81; 49; 54	Greece 1981	0.467	44; 58; 64; 87
Mexico 1995	0.294	60; 70; 50; 64	Greece 1991	0.409	51; 65; 60; 77
Mexico 2000	0.287	53; 71; 51; 63	Greece 2001	0.358	38; 55; 58; 83
Mexico 2010	0.252	57; 78; 44; 53	Hungary 1970	0.279	77; 80; 53; 62
Switzerland 1970	0.401	23; 19; 51; 83	Hungary 1980	0.216	91; 96; 50; 54
Switzerland 1980	0.385	25; 27; 49; 83	Hungary 1990	0.228	94; 96; 48; 51
Switzerland 1990	0.297	23; 24; 40; 73	Hungary 2001	0.246	91; 91; 45; 49
Switzerland 2000	0.237	35; 36; 37; 54	Spain 1991	0.332	67; 76; 58; 67
UK 1991	0.205	91; 92; 38; 39	Spain 2001	0.239	94; 95; 48; 51

So, is Britain pulling apart...?

Detailed occs	(1)	(2)	(3)		(1)	(2)	(3)
M-M friends (BHPS cols 1 3-dig, 2-3=1dig)				*Other measures, using H-W data, BHPS*			
BHPS 2004	0.38	0.43	7.5	Educ, > 1960	0.17	0.48	9.4
`` 2000	0.35	0.44	7.0	Educ, < 1960	0.19	0.52	8.9
`` 1998	0.39	0.43	9.3				
`` 1994	0.42	0.47	7.6	Ethnic, > 1960	0.52	0.87	0.0
`` 1992	0.44	0.46	6.1	Ethnic, < 1960	0.62	0.85	0.1
SSGB 1974	0.26	0.64	2.9				
Oxford 1972	0.24	0.52	5.6	Relig, > 1960	0.55	0.96	0.0
BHPS only				Relig, < 1960	0.59	0.83	0.1
H-W, > 1960	0.24	0.33	7.3				
H-W, < 1960	0.22	0.35	9.6	Occ10, > 1970	0.34	0.32	8.2
HS, > 1960	0.34	0.33	9.1	Occ10, < 1940	0.37	0.39	7.1
HS, < 1960	0.25	0.21	11.5				

(1) Cramer's V for ego-alter; (2) Ego-Alt dim1 correlation; (3) % ego-alt > 2SD different in dim 1.
< 1960 refers to egos born up to 1960; > 1960 refers to egos born after 1960

	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%
+ Two-categ.	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 & two-categ)	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 3: 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.

	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	.374	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%
+ Two-categ.	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 & two-categ.)	8,200	14,140	.311	154,060	

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

**UKHLS Wave 3:
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.

	LL	Degrees Freedom	Delta	BIC	% of BIC decrease
Independence	5,005	4,225	.397	61,899	
+ religion*views	4,945	4,209	.392	61,972	(+7.3%)
+ paper*religion	4,971	4,213	.395	61,965	(+6.6%)
+ paper*views	4,965	4,218	.394	61,917	(+1.8%)
+ education*views	4,941	4,214	.391	61,927	(+2.8%)
+ education*paper	4,964	4,218	.394	61,917	(+1.8%)
+ education*religion	4,839	4,212	.382	61,841	5.8%
+ Two-categ.	4,610	4,159	.364	62,054	(+15.4%)
+ Views	4,807	4,220	.383	61,743	15.5%
+ Paper type	4,833	4,222	.388	61,752	14.6%
+ Education	4,489	4,222	.364	61,408	48.9%
+ Religion	4,679	4,220	.380	61,615	28.3%
Full	3,767	4,077	.311	61,894	
Full (except 2 level)	3,767	4,143	.311	61,345	
Full (except 2 level & two-categ.)	3,867	4,209	.327	60,895	

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

BHPS Wave 1 (1991): 4,166 cases from 654 pairs of 356 individuals.

Similarity on two characteristics weakens models.

Education was important in 1991 data, views and paper type similarly to today.

Suggests we share 1 characteristic only with friends.