Long-term effects of the Demographic Transition on cohorts' demographic experiences in Britain

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MAP2030 Modelling Ageing Populations to 2030 LSE nda PROGRAMME new dynamics of ageing a cross-council research programme

Introduction

Main demographic trends of **first demographic transition** (FDT) in now-developed societies:

- fertility declined from a level of about five children per woman in 19th century to 'below-replacement level fertility' today
- mortality has declined with e_0 around 1900 of about 40 years but double that today

So proportion populations aged 65 & over now often approaching 20%.

Introduction (contd.)

Main demographic trends of **second demographic transition** (SDT) in now-developed societies:

- substantial reductions in nuptiality
- increases in:
  - non-marital cohabitation
  - divorce
  - the proportion of births outside marriage.

A complete kinship network within a single framework, permitting analysis of the key family & kin networks of older people:

- in a cross-national European survey, 49% of family carers of cared-for elderly people were children & 22% were spouses/partners (EUROFAMCARE consortium, 2006).
- divorced fathers have less contact with their adult children than fathers who did not divorce; for mothers the effects of divorce is small (de Graaf & Fokkema, 2007)
- grandparental role is important: 75% of relationships were 'highly' or 'very highly' emotionally close in Germany (Sticker, 1991)

Demographic transition(s) as period phenomena (fertility in 1880s, SDT 1960s etc)?

- What are the **long-term impacts on people other than those directly involved and the life-time experiences of different cohorts as they pass through these epochs**
- How have family and kin constellations have changed – as measured by changes in people's availability of different types of **living** kin at different ages and over the whole lifetime, over the period just prior to the onset of the first demographic transition in Britain, 1850, and 2010
- What is the relative importance of
  - First ('fertility') demographic transition
  - Epidemiological ('mortality') demographic transition
  - Second ('partnership') demographic transition

Kinship and family the background

- Kinship distribution at a time point is determined solely by the fertility, mortality, nuptiality, divorce and cohabitation experienced by the population for many decades earlier
- The contemporary pattern of kinship is strongly influenced by recent trends, especially where step-kin are considered
- Little information available in Britain (or elsewhere) on kinship in large nationally-representative data sources.

Micro-simulation model based on individual-level rules

- We start with known or assumed population characteristics, and then simulate individual demographic events.
- This produces a set of individual records, with a statistical pattern of individual demographic events similar to what would be observed in a real population.

Method: demographic microsimulation using the Berkeley SOCSIM model

- an initial population of size 10,000 with the population distribution of England in 1751 subject to appropriate rates of fertility, mortality and nuptiality (including divorce) for the period since 1751 (cohabitation from 1950)
- the population in 1751 comprises unrelated individuals, but, over time, a full set of kinship links is constructed as the individuals marry and procreate

SOCSIM demographic microsimulation model

- initial population subject to appropriate rates of fertility, mortality and nuptiality, these individuals age month by month; some will marry (or cohabit) with each other, give birth, divorce or remarry, and finally they die
- Monte Carlo method
- model builds up kinship links for an initial population of unrelated and never-married people

Main assumptions: summary of selected values

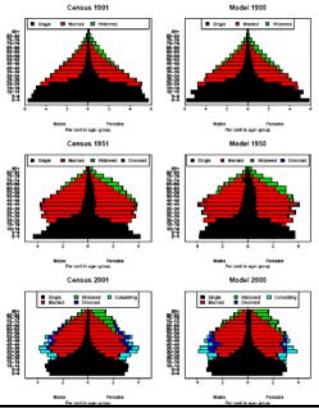
Period	Size of living population *	TFR (per 1000)	e_0		Average age at first marriage		Births outside marriage (per 1000)
			Male	Female	Male	Female	
1850-60	30,619	5583	41.5	44.2	26.9	24.2	53
1900-10	62,556	3341	48.6	52.4	26.4	24.5	40
1950-60	81,925	2395	67.3	73.2	25.1	23.1	57
2000-10	92,175	1873	77.4	81.4	30.0	27.9	403

* at start of period

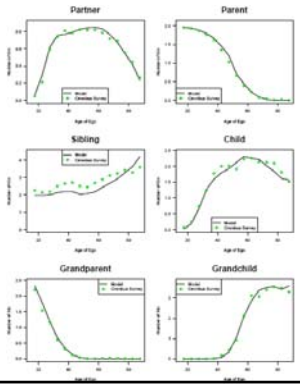
Method: demographic microsimulation using the Berkeley SOCSIM model

- The population is 'censored' at selected years between 1850 and 2010 to produce the populations that would have been alive at those dates. Thus comparisons are made of the same population at three different points of time.
- For each type of kinship relationship, the relevant egos and their kin were identified

Comparison of England & Wales Census and model data



Average number of living kin: comparison of survey and model data



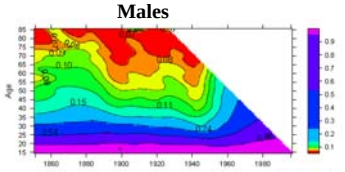
Grundy E, M Murphy, and N Shelton (1999) Looking beyond the household: inter-generational perspectives on living kin and contacts with kin in Great Britain. *Population Trends* 97:19-27

Principal trends in family and kin structures: Partners

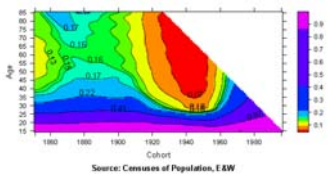
- In the North Western European marriage pattern, historically marriage was relatively late and high proportions never married (pre-transitional)
- marriage rates were particularly low in the 1920s and 1930s (causal on FDT?)
- in the period from 1945 to about 1970 many countries experienced an unprecedented marriage boom (reln to SDT?)
- recently, a substantial decline in marriage (SDT)
- cohabitation has increased, but insufficient to offset the decline in marriage (SDT).

Proportions never-married

Males



Females

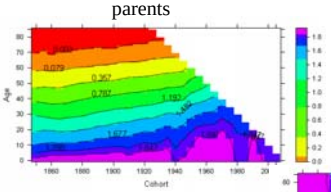


Principal trends in family and kin structures: Partners

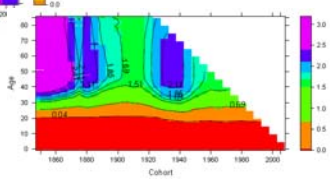
- Sex differentials important (mortality and migration also matter)

Intergeneration links (i)

parents

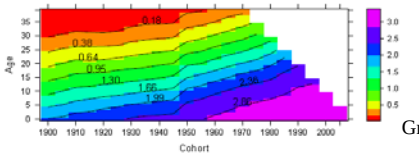


children

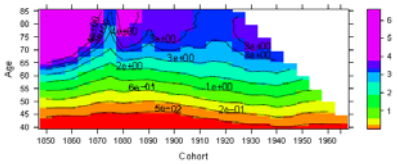


Intergeneration links (ii)

Grand parents



Grand children



Principal trends in family and kin structures: Vertical kin

- Increasing average number of parents – and grandparents - alive but only substantially from 1940s cohorts (epidemiological transition)
- Average number of children variable (nearly 60% of c. 1900 female cohort had zero or one child), grandchildren more monotonic

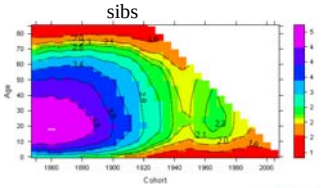
Principal results of family and kin structures: Parents & children

- trends for living children and parents are different
  - the peak number of living children, (only) 3.5, at end of reproduction for pre-FDT cohorts older people in 1950 local maximum for those aged around 55 in 2000
- FDT pushes maximum number of children towards older ages (intergenerational perceptions?)
  - the median age for having at least one living parent increased as nearly much in the last 25 years - from 49 to 55 years - as in the previous century (from about 43 to 49 years)
- there is an ageing of generational relations: age after which people more likely to have a living child than a living parent
  - 1950 below age 40
  - 2000 about age 45
  - (2050 about age 50?)

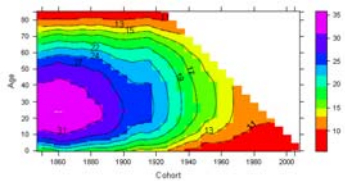
Having living parents has increased monotonically (until now)

Horizontal kin

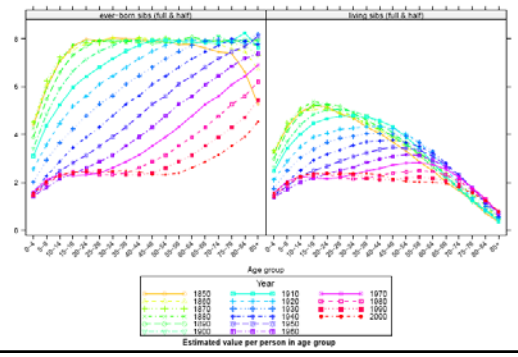
sibs



first cousins



Average number of ever-born and living sibs

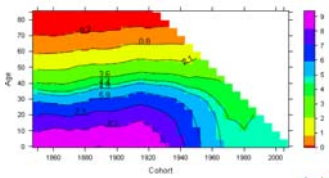


Principal results of family and kin structures: Horizontal kin

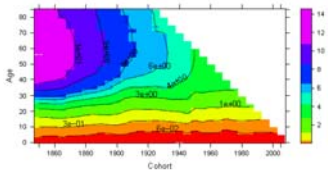
- trends for ever-born and living sibs are different
  - the number of living sibs of children is well below the number of ever-born sibs
  - reaches a maximum in adolescence/ early adulthood
- number of living sibs similar for all cohorts at older ages
- The number of first cousins has declined monotonically

Non-nuclear kin

nephews & nieces

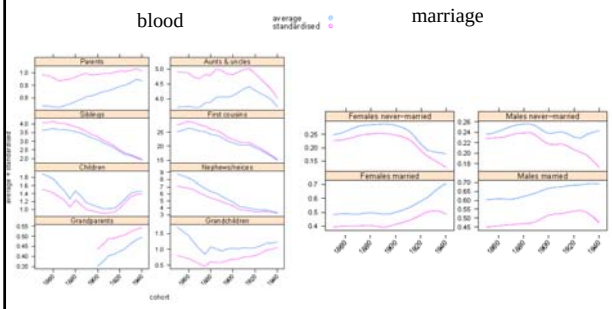


aunts & uncles



The role of mortality: lifetime (to age 85) experience of kin by:

blood marriage



Conclusions and implications

- Of all demographic analyses, those concerned with kin availability are among the most sensitive to long-term population trends
- The ageing of populations will have an independent and sometimes reinforcing impact on intergenerational relations.

Conclusions and implications (contd.)

- A full accounting of cohort patterns is determined by experience over the whole period, rather than concentrating on a period designated as transitional.
- The trend towards a ‘beanpole’ family structure is apparent, but socially as well as demographically generated

Conclusions and implications (contd.)

- emerging patterns will lead to many more 'incomplete' kin relationships than in the past, such as step families
- kin relations are in general likely to become more 'vertical' than 'horizontal‘
- the ageing of populations will have an independent and sometimes reinforcing impact on kin relations in that there will be an ageing of generation relationships

Thank you