

Changing times and changing lives:
insights from the Office for National
Statistics Longitudinal Study of England
& Wales

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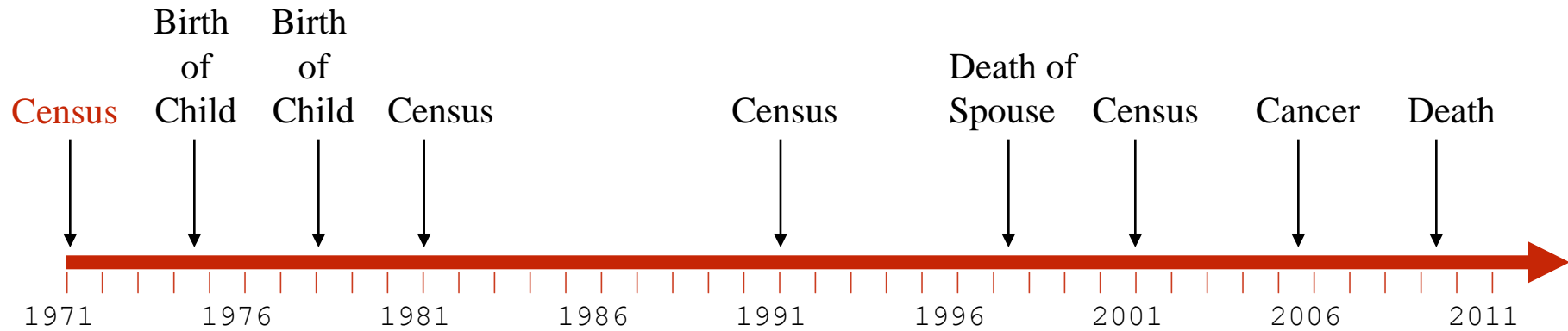
London School of Hygiene &
Tropical Medicine



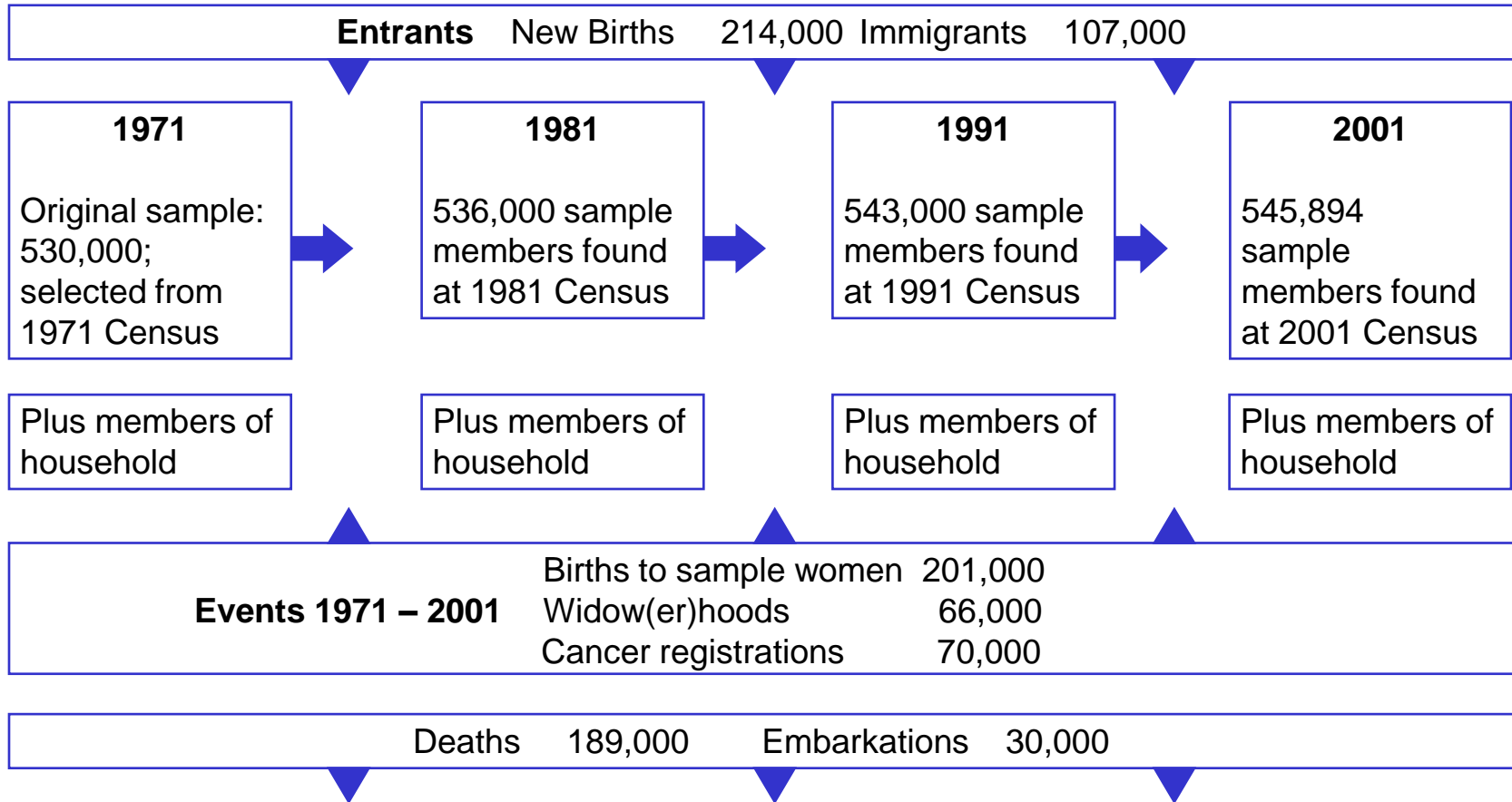
The ONS Longitudinal Study of England and Wales

- Census data for individuals with one of four birthdates enumerated at the 1971 Census (c. 1% of population).
 - Census data on other people in LS members' households
 - Maintained through addition of immigrants and new births with LS birth date.
 - Information from later censuses (1981, 91 & 2001) added.
 - Linked event data including death of the spouse of sample members, deaths of sample members, births to sample mothers and cancer registrations.
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Person Included from 1971 Census



Study Structure



Census Data in the LS (measured every ten years)

Marital status & family type	Ethnicity (1991 & 2001)
Housing and amenities	Education (all levels 2001)
Migration & travel to work	Religion (2001)
Economic activity	Caregiving (2001)
Occupation & social class	Self-rated health (2001)
Ecological (area level) data	Long-term illness (1991 & 2001)

Data for LS members and other members of their households

Event Data in the LS (added every year)

Deaths (cause specific) Widow(er)hoods

Cancer Registrations Live Births to Sample Mothers

Births of LS Members

Emigrations (recorded) Still Births to Sample Mothers

Immigrations

Infant Deaths to Sample Mothers

The ONS LS: Strengths

- ✓ Inclusion of data on other household members at each Census point.
 - ✓ Geographic and ecological data – users can specify geographies/link to look up tables.
 - ✓ Large nationally representative population – ability to look at population sub groups, e.g. regional populations; ethnic minority groups.
 - ✓ Intergenerational perspectives: e.g. examine 2001 adult characteristics of LS members who were children in 1971 by parental characteristics.
 - ✓ Inclusion of institutional population (usually omitted from surveys).
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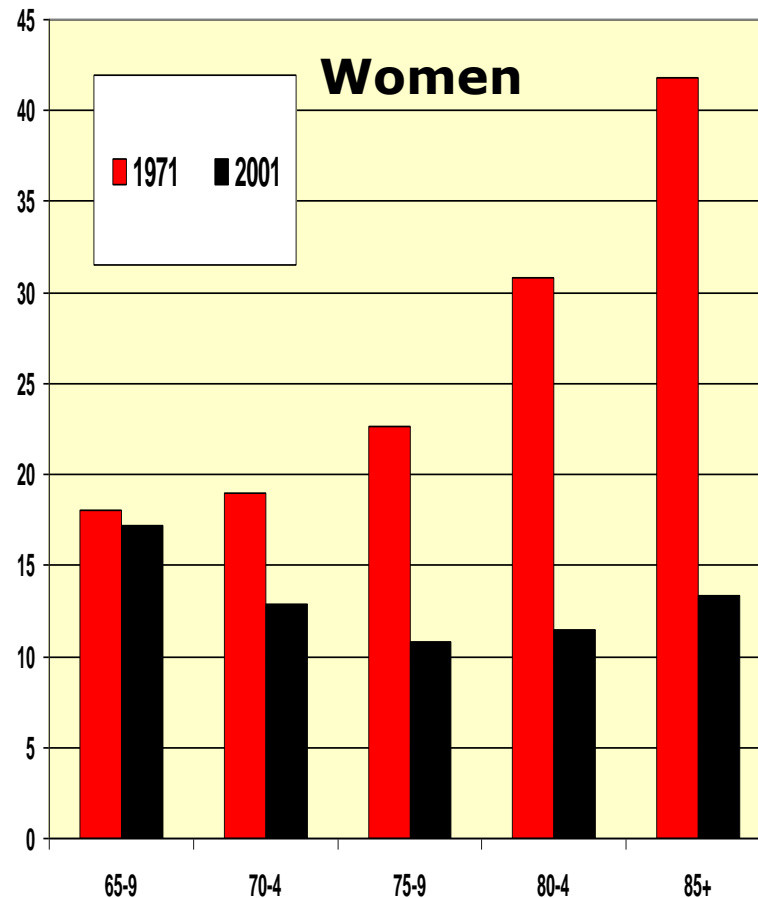
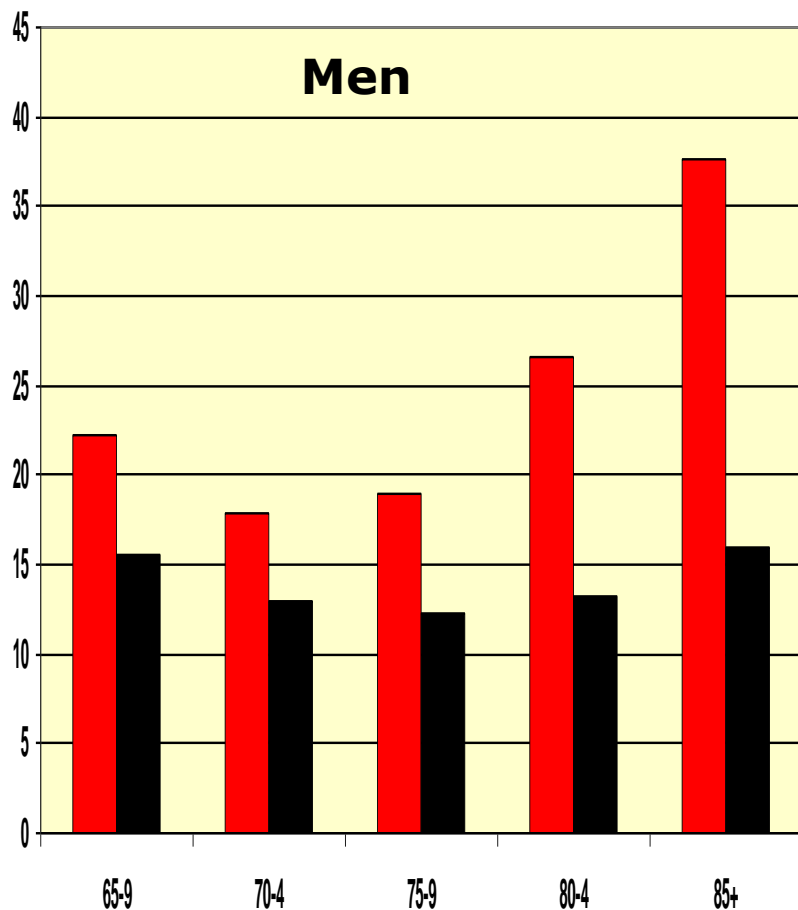
The ONS LS: Potential Designs

- Cross-sectional at census point: 1971, 1981, 1991 or 2001.
 - Change between censuses: investigating same people at two census points.
 - Cross-sequential: comparing two cohorts e.g. class mobility 1971 to 1991 with class mobility 1981 to 2001.
 - Census + events: mortality, fertility, cancer incidence and survival by census characteristics
 - Life course analysis: 35 years of follow-up of initial sample members.
 - Intergenerational: adult characteristics of members who were children in 1971 or 1981 by characteristics of their parents.
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Research example 1: Changes in living arrangements of older people

- Cross sectional comparison of 1971 and 2001
 - Cross sequential comparisons of changes 1971-81, 1981-91 and 1991-2001 (comparing three sets of longitudinal transitions)
 - Mortality rates associated with these changes
 - Longer life course perspective: transitions to live in institutions by parity (number of children born).
institutional households change over three decades
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Proportion (%) of elderly men and women living in households with two or more generations, England and Wales, 1971 and 2001 (private household population).



Source: Analysis of ONS LS data.

Methods and design (Part 1)

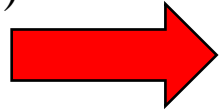
- Cross sequential analyses of data from the ONS Longitudinal Study of England & Wales comparing 1971-81, 1981-91 and 1991-2001.
 - Sub set of analysis restricted to women present in the sample from 1971 to 2001 for whom fertility history data available.
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Design of analysis

1971

65+ (birth year LE 1906)

HOUSEHOLD TYPE



1981

75+ (birth year LE 1906)

HOUSEHOLD TYPE

1981-85

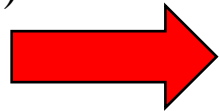
MORTALITY



1981

65+ (birth year LE 1916)

HOUSEHOLD TYPE



1991

75+ (birth year LE 1916)

HOUSEHOLD TYPE

1991-95

MORTALITY



1991

65+ (birth year LE 1926)

HOUSEHOLD TYPE



2001

75+ (birth year LE 1926)

HOUSEHOLD TYPE

2001-05

MORTALITY



Definitions of family/household type

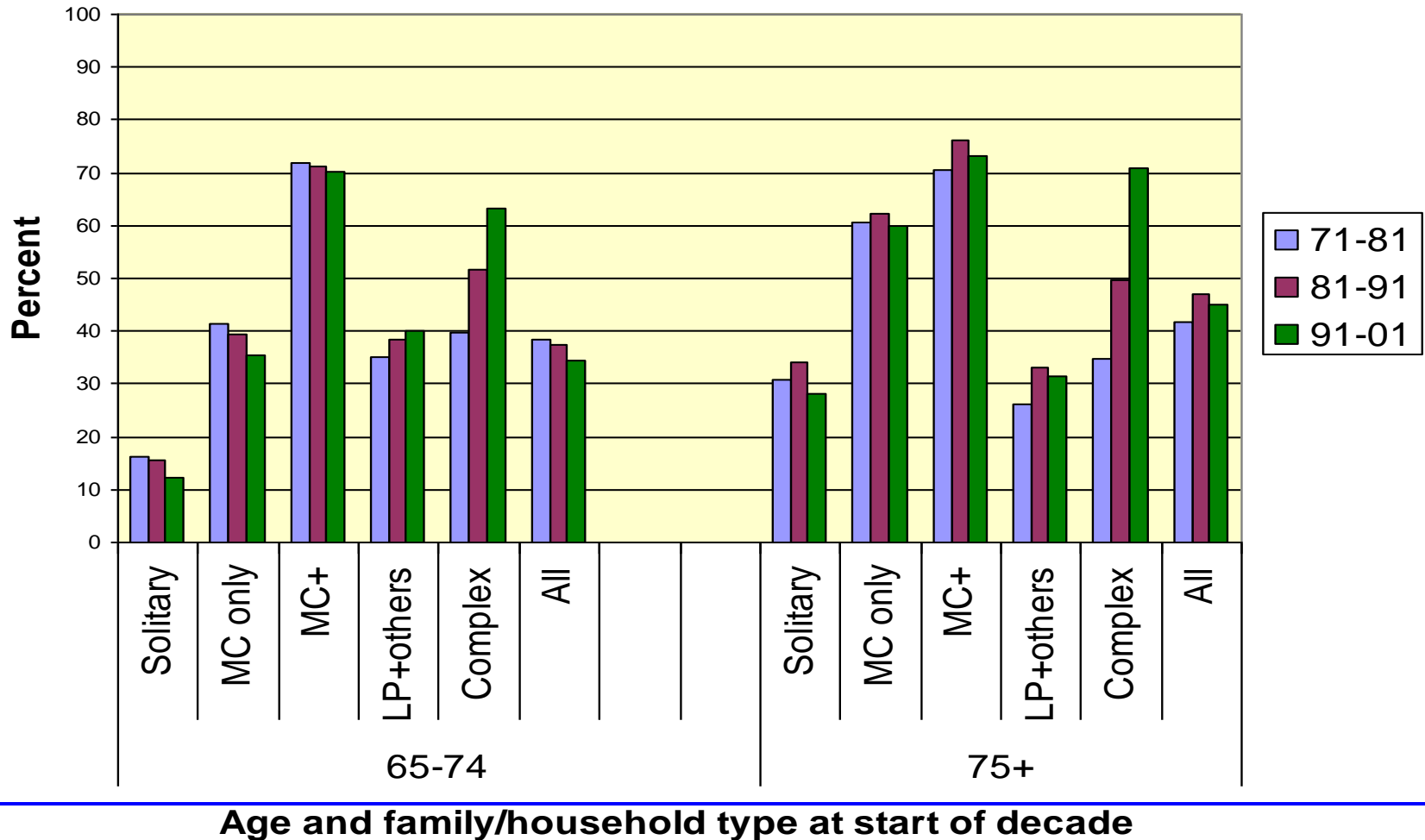
- **Solitary:** lives alone
 - **Couple only:** lives with spouse (incl. cohabitee) and no one else
 - **Couple +:** lives with spouse and anyone else (usually adult child)
 - **Lone Parent +:** no spouse, lives with never-married child of any change with or without others in household.
 - **Complex:** not part of a family (i.e. no spouse or never-married child present) but others in household (usually ever-married children) OR lives in two family household (e.g. with own spouse and married daughter and son-in-law)
 - **Communal establishment:** nursing or residential home or similar where meals are provided communally.
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Distribution of 1971-81, 1981-91 and 1991-2001 samples by socio-demographic characteristics.

	1971-81		1981-91		1991-2001	
	M	F	M	F	M	F
Mean age ¹ (SD)	69.54 (4.14)	70.56 (4.72)	69.98 (4.30)	71.16 (4.95)	70.00 (4.38)	71.17 (5.04)
Home owner ¹ (%)	58.36	52.73	61.31	56.04	72.61	65.81
Tenant ¹ (%)	41.64	47.27	38.69	43.96	27.39	34.19
Married ²	61.21	20.22	63.84	23.79	63.62	25.90
Never-married ²	6.12	13.01	5.37	10.05	5.49	6.98
Wid./div ²	32.67	66.77	30.79	66.16	30.88	67.12
N	8,482	17,259	10,971	20,978	13,587	23,107

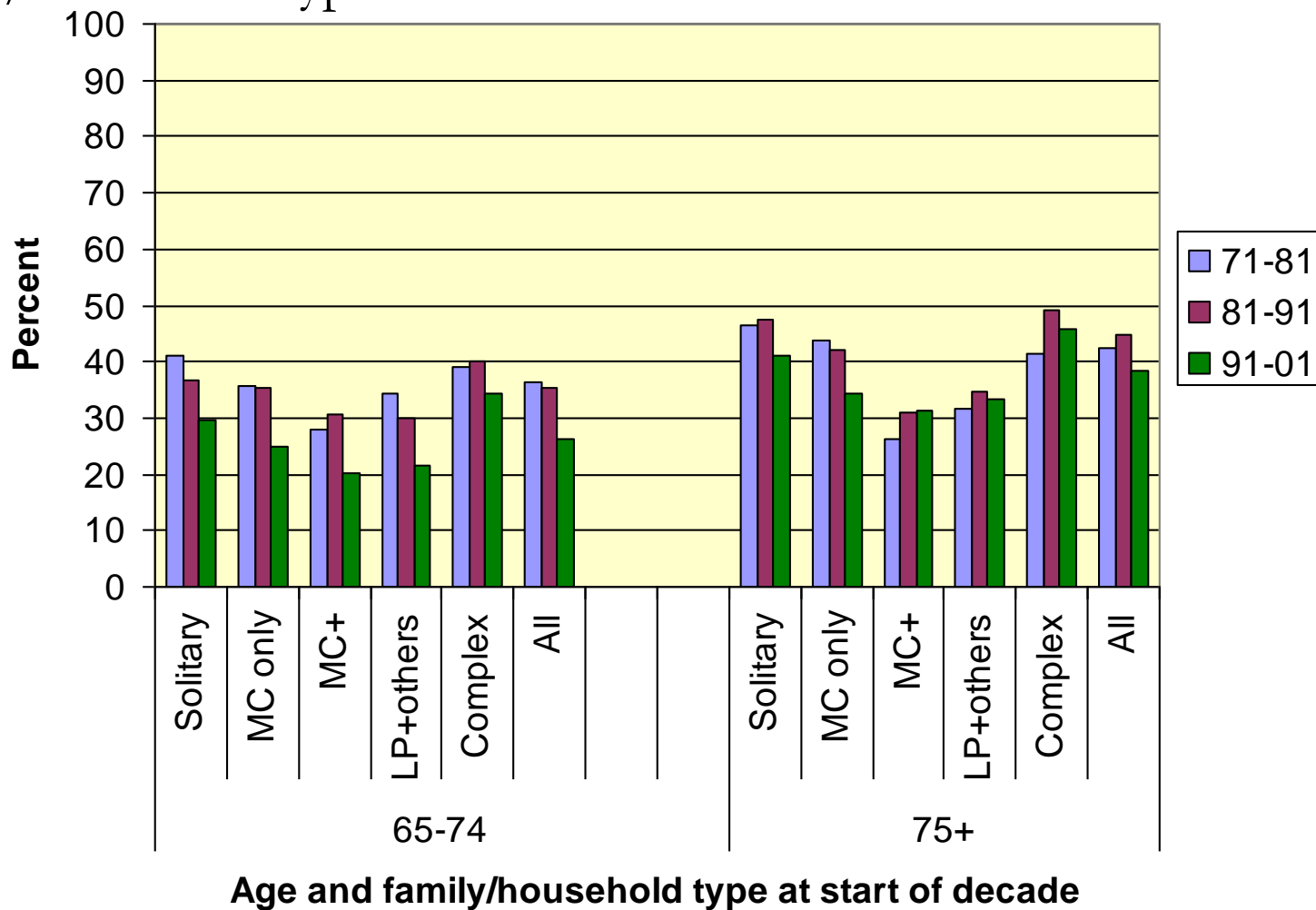
¹ Start of decade; ² end of decade.

Proportion (%) of people aged 65 and over who changed family/household type between censuses; 1971-81; 1981-91; 1991-2001 by age and family/household type at start of decade



Source: ONS LS data, author's analysis (earlier decades from Glaser & Grundy 1998)

Proportion (%) of people aged 65 and over who moved home between censuses; 1971-81; 1981-91; 1991-2001 by age and family/household type at start of decade



Source: ONS LS data, author's analysis (earlier decades from Glaser & Grundy 1998)

Changes in family/household type and residential mobility: results from LS analysis

- Around 40% of older people at each census considered were in a different family/household type than at preceding census (life-course change). Among those living alone or just with a spouse proportion of transitions tended to decrease or remain stable per decade (time period comparison); reverse the case for those in complex households or lone parent families. More change in older age groups.
 - Around 40% of older people at each census considered had moved home since the preceding census. Those initially in lone parent families or with spouse and others were the least likely to move. Lower proportions moved 1991-2001 than in preceding decades.
 - Around 15% of younger elderly people (65-74 at start) and 25% of older old (75+) had both changed family/household type and moved location.
 - Around 40-50% changed neither location nor family/household type – this proportion was highest in the most recent decade (1991-2001).
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Investigating further

- What factors increase chance of moving to live in a communal establishment (nursing home etc)?
 - What factors increase chance of moving to live with relatives?
 - Has balance between these changed?
 - How are these moves associated with later risks of death?
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Variables used in analysis:

Start of decade

Household/family type

- Solitary
- Couple alone
- Other family (couple + child/others;/lone parent)
- Complex.

Others

Age (single years); gender

- Housing tenure (owner v. non-owner)

End of decade:

Household/family type

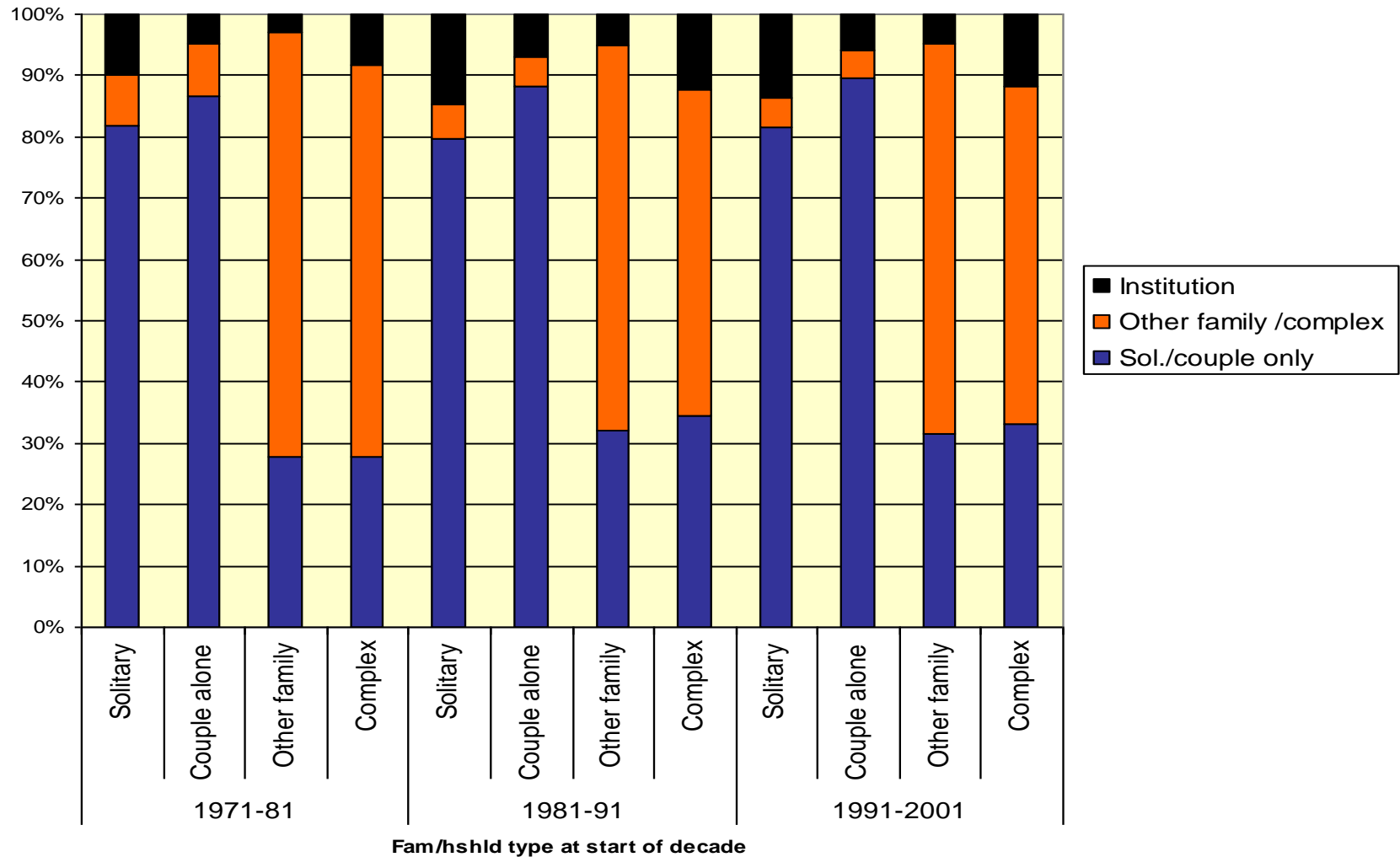
- Solitary/couple alone
- Other family/complex*
- Institution

Others

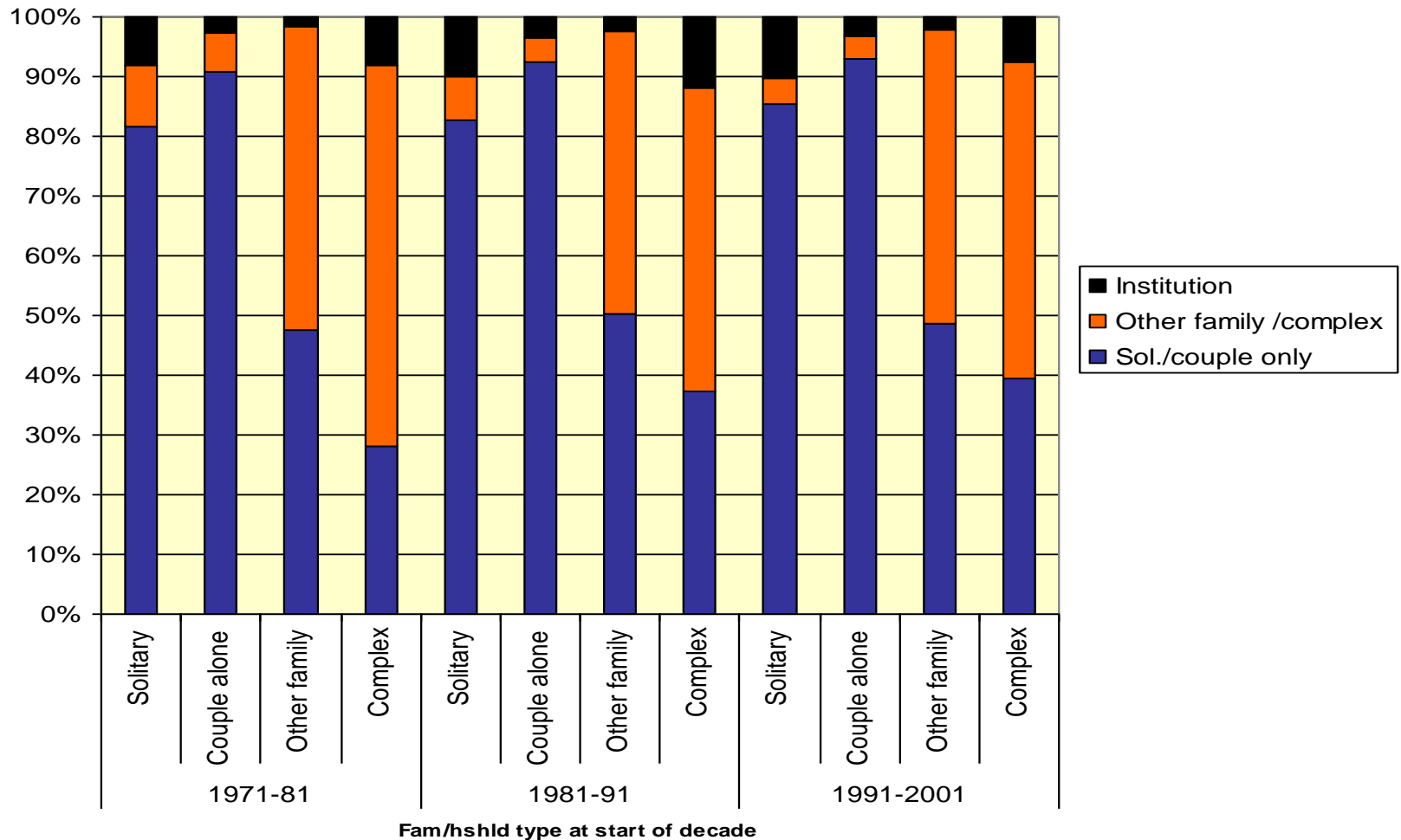
- Marital status
- Limiting long-term illness (not 1981)

*distinguished in mortality analysis.

Distribution of female samples by family/household type at start of end of decade, 1971-81, 1981-91, 1991-2001.

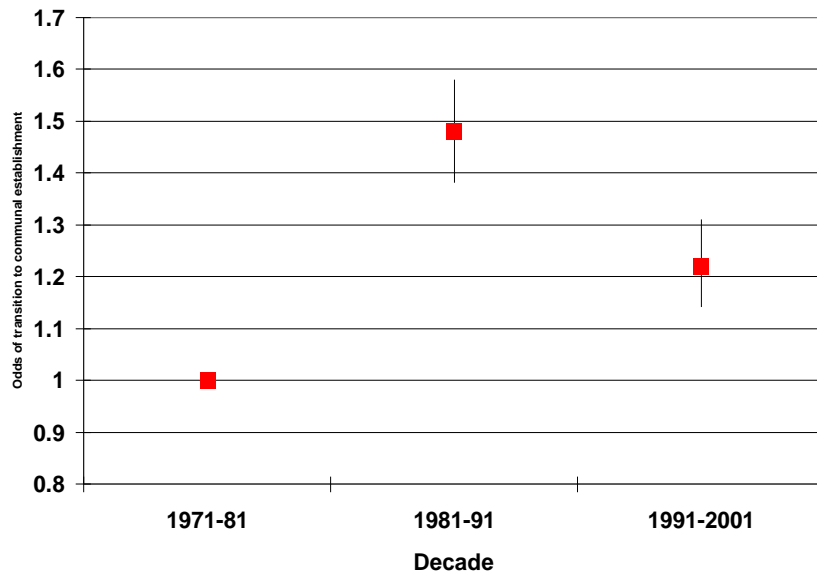


Distribution of male samples by family/household type at start of end of decade, 1971-81, 1981-91, 1991-2001.



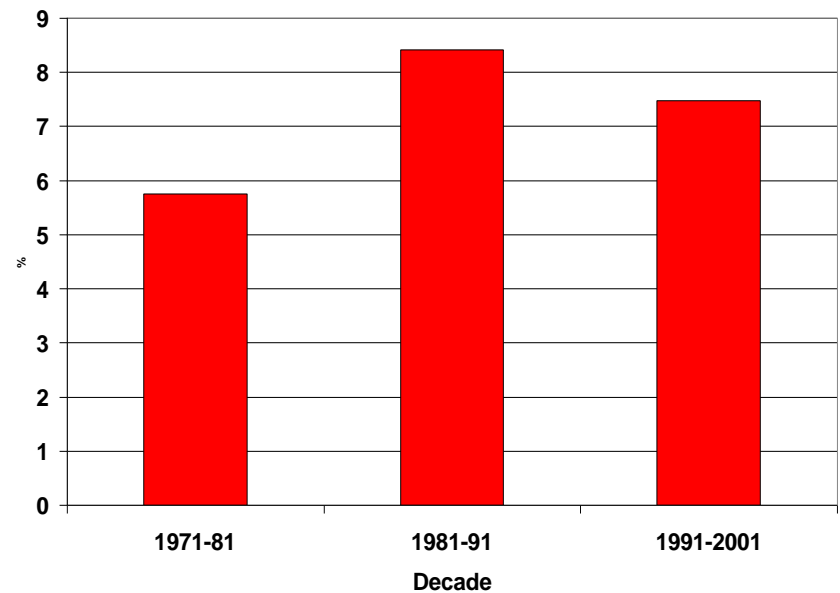
% aged 65+ who moved from private household to communal establishment between censuses, by decade.

Odds ratios



(Controlling for age, sex, marital status & housing tenure)

%



Transitions from private to non-private households (institutions)

- The risk of making a transition from a private to a non-private household was much higher in the 1981-91 decade than in 1971-81; in 1991-2001 it fell but was still higher than in the first decade – reflection in part of policy changes.
 - Higher risks of transitions to institutions were associated with long term illness; older age; being unmarried (especially never-married); not owning a home; being female and living in the North. (Results from fully adjusted model).
 - Among women, those who had never had children had the highest risk, and those who had had two children the lowest, of transition to an institution (taking account of marital status and other relevant co-variates).
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Objective 3). Results from Poisson regression analysis of mortality post decade end

	1981-85		1991-95		2001-05	
	M	F	M	F	M	F
Age	1.04***	1.04***	1.03***	1.04***	1.08***	1.09***
Tenant	1.04	1.04	1.08**	1.04	1.25***	1.20***
<i>Household type at start of decade</i>						
Couple alone	1.04	0.99	1.02	0.97	0.98	1.03
Other family	1.04	0.93	0.97	0.96	1.00	0.99
Complex	1.02	0.98	0.98	1.01	0.94	1.03
<i>Household type at end of decade</i>						
Family/complex	1.08	1.15***	1.07	1.10**	1.10	1.25***
Institution	1.91***	1.85***	2.19***	1.97***	2.80***	2.85***
Marital status						
Single	1.04	0.98	1.00		1.00	1.04
Widowed/divorced	1.10**	0.99	1.02		1.34**	1.08*
Number of deaths	1162	1596	1230	1705	1204	1641

***P<.0001, ** P<.001, * P<.05

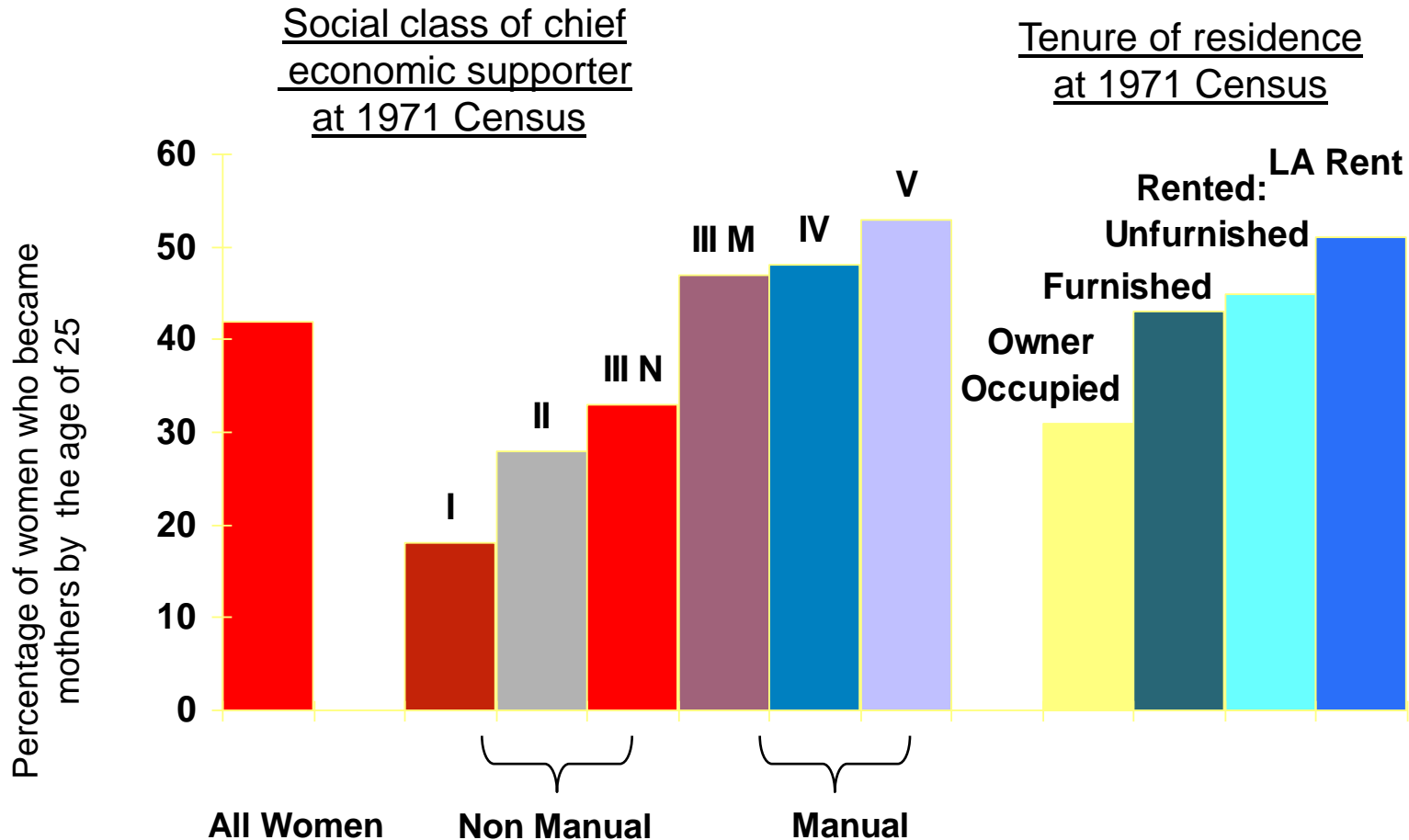
Results:

- **Transitions from private to non-private households (institutions)** The risk of making a transition from a private to a non-private household was much higher in the 1981-91 decade than in 1971-81; in 1991-2001 it fell but was still higher than in the first decade – reflection of policy changes?
- Higher risks of transitions to institutions were associated with long term illness; older age; being unmarried (especially never-married); not owning a home; being female.
- **Mortality:** Those in institutions higher mortality than those living with family – not equivalent groups in terms of health status. Excess mortality of institutional population higher 2001-05 than previous decades – suggests effect of stricter prior assessment.
- **Multinomial results: Relative to 1981-91:**
- In **1971-81** lower risks of transition to an institution, especially versus family/complex; higher risk of family v. solitary/couple alone.
- In **1991-2001** lower risks transition to institution or to family/complex – i.e. greater chance living alone or in couple only.
- Tenants: higher risk institution v family/complex; being in family/complex start of decade higher chance of same arrangement end of decade.

Further research examples: Earlier life and later circumstances

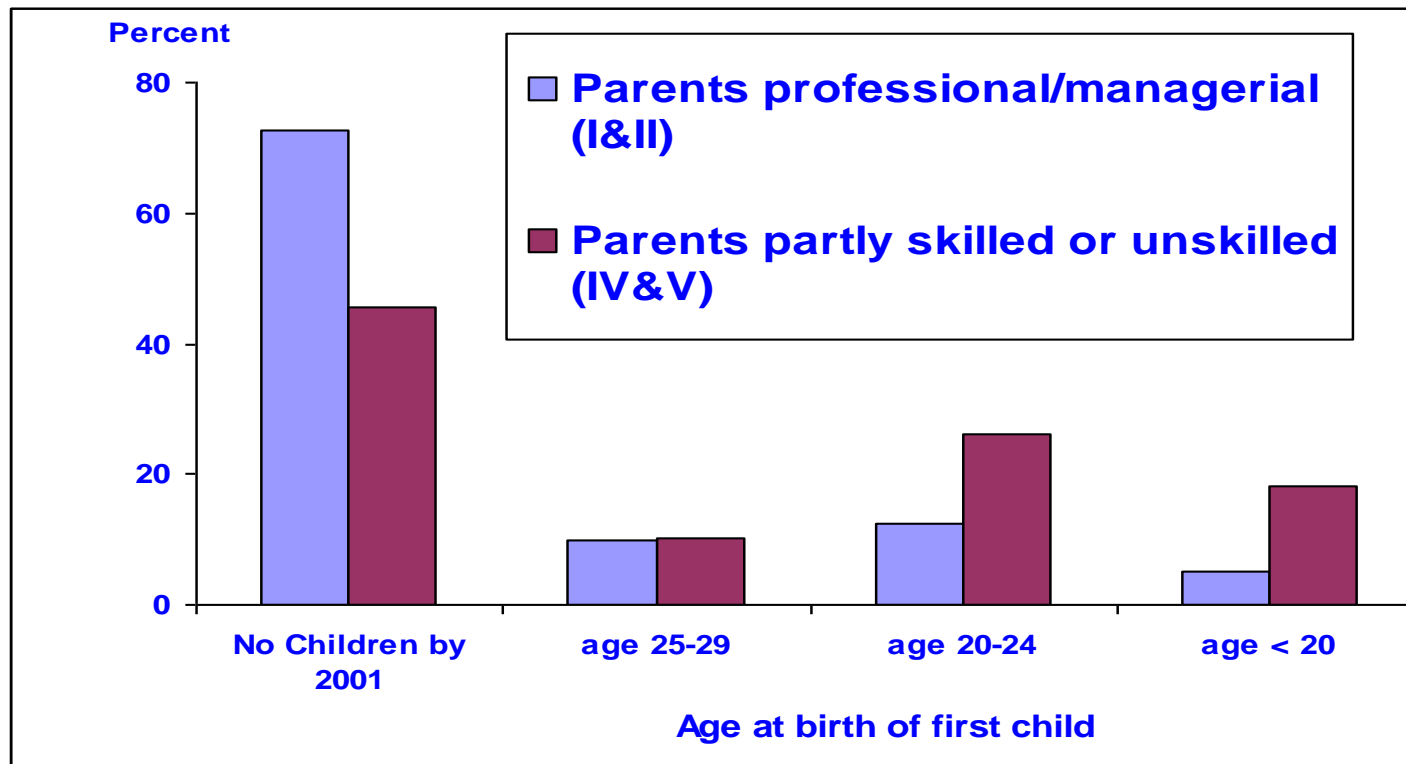
- Differences in fertility by early adult and parental characteristics
 - Intergenerational differences in employment and deprivation by parents' education, social position, and country of birth
 - Earlier employment and social class and later health and mortality.
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Percentage of women born in 1955-59 who were mothers before their 25th birthday



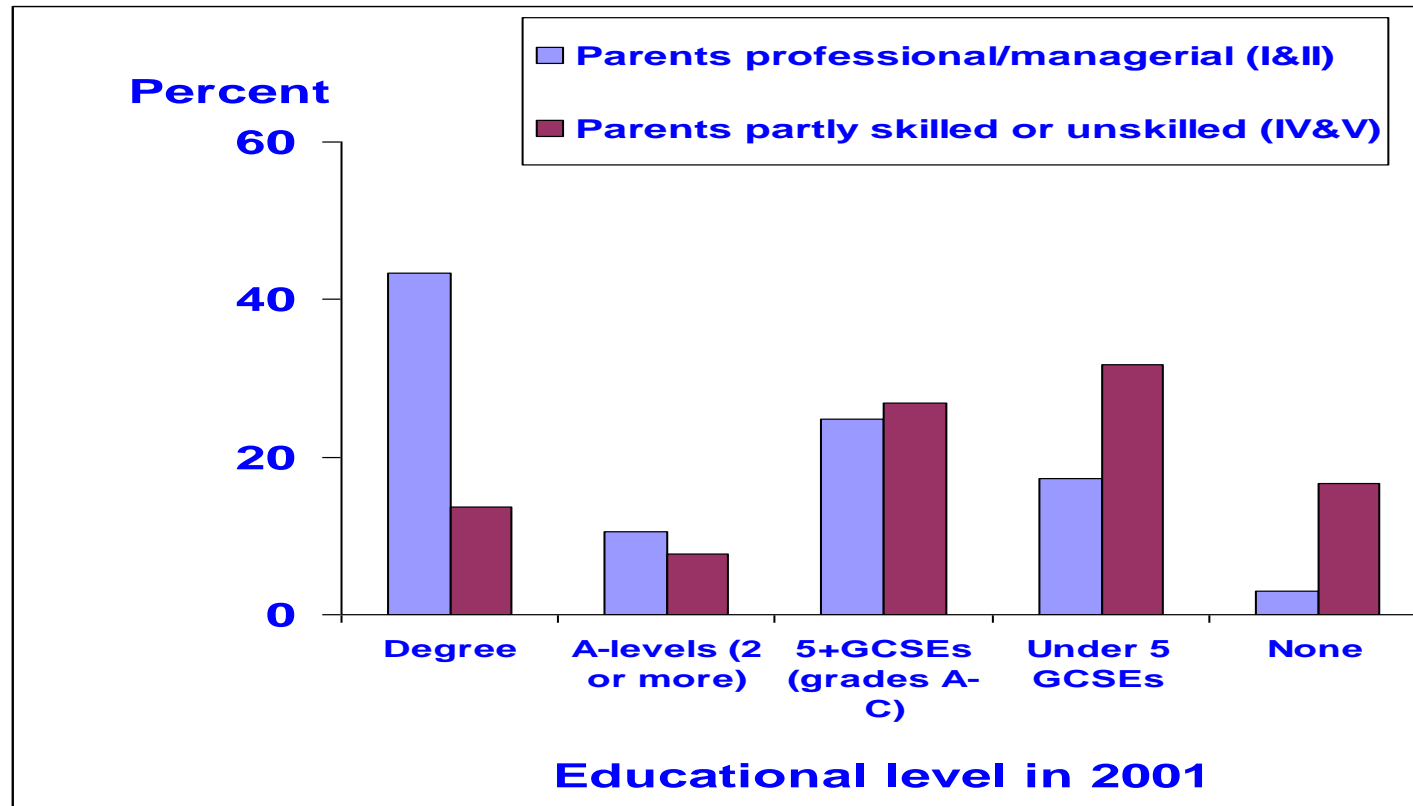
Source: Werner B. (1984) "Fertility and family background: some illustrations from the Longitudinal Study", Population Trends, 35, pp 5-10

Age at birth of first child: women aged 25-29 in 2001, by parents' social class in 1981



Sample members also present in 1971 and then living with a parent. Source: Buxton et al CeLSIUS (Pop Trends 2005)

Educational level of female LS members aged 23 to 36 years in 2001, by parents' social class in 1971



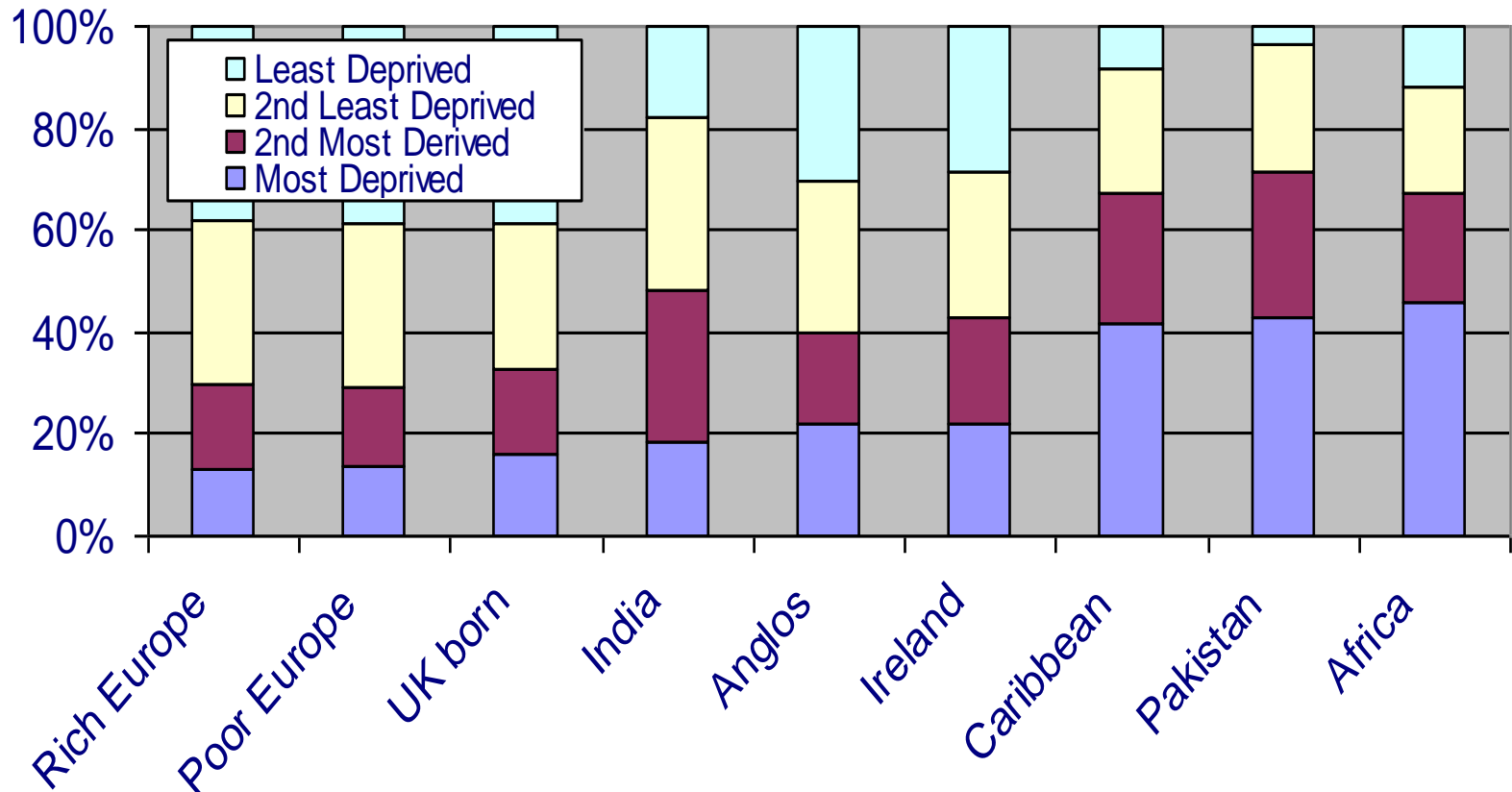
Inter-generational Transmission of Social Class

- **Men and women were most likely to become professionals or managers if their parents were in this social class:**
 - **59% of men and 42% of women aged 36-45 in 2001 who had lived with two parents in 1971 at least one of whom was a professional/manager, were themselves professionals or managers.**
 - **These proportions were slightly lower for those who had lived with a lone parent in 1971 (43% of men, 36% of women).**
 - **These proportions were substantially lower for those who had lived with two parents who had partly skilled or unskilled jobs in 1971; among these 27% of men and 22% of women were in professional or managerial jobs in 2001.**

Differences by parents' country of birth: The Study Population

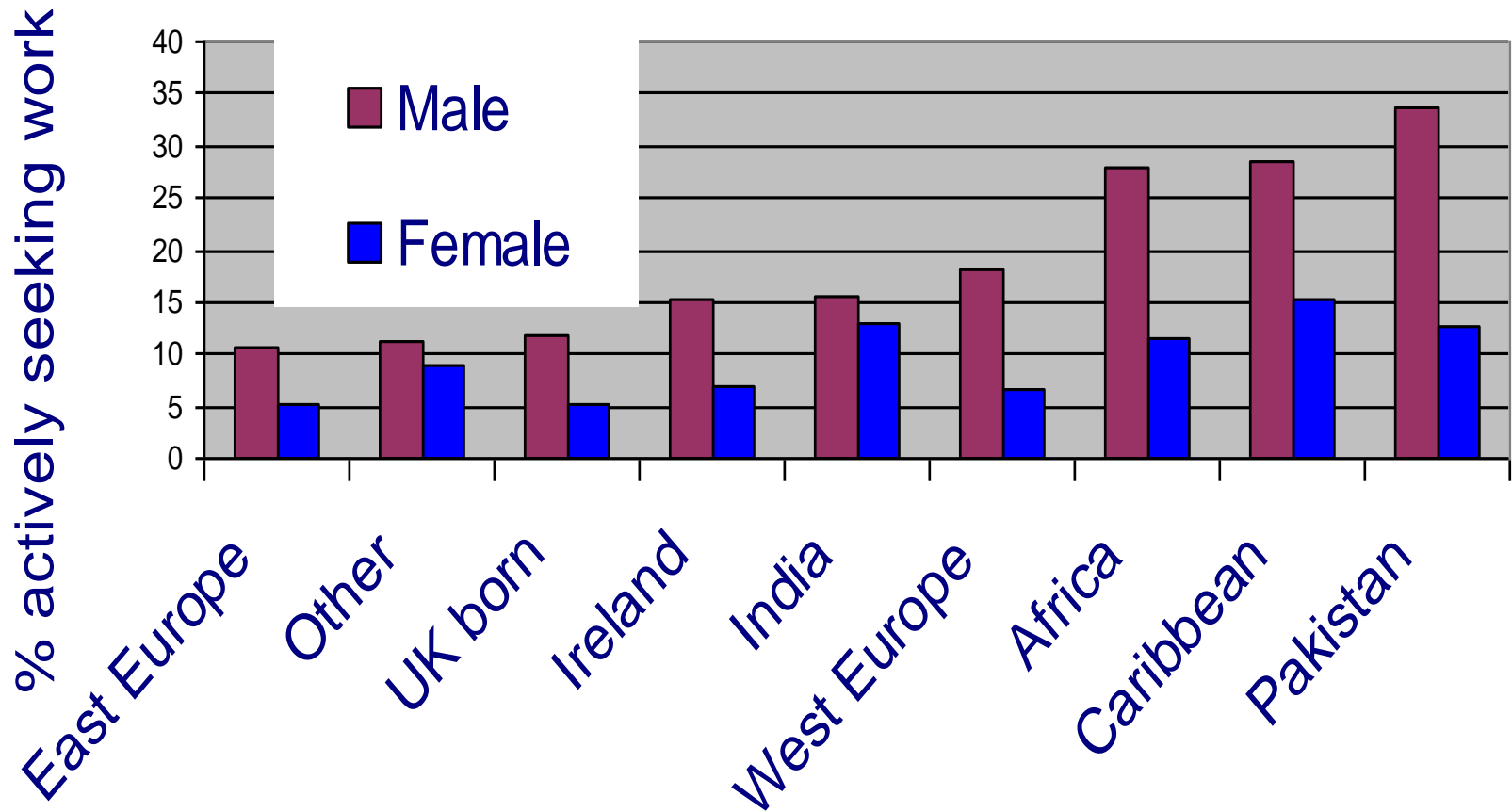
- **Children of 2 immigrant parents**
- **Aged 0-16 in 1971**
- **Born in UK or entered aged 0-4**
- **Lived with at least 1 parent in 1971**
- **Traced to 1991 when aged 20-36**
- **Sample: 4700 children of immigrants analysed by parents' country of birth**

Socio-economic deprivation in 1991 among adults aged 20-36 by parents' country of birth



Parents' country of birth (Anglos=USA, Canada, Australia, NZ).

Unemployment in 1991 among adults aged 20-36 by parents' country of birth



Conclusions

- The value of longitudinal record linkage studies increases over time
 - Allows comparisons of periods, investigation of links between earlier and later life circumstances and some analysis of intergenerational effects
 - Large sample size means relatively small groups can be investigated
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Research Use of LS

- 600+ publications.
 - Important policy impact.
 - Recently/currently used in academic studies of:
 - Ageing-Caregiving- Cancer incidence and survival- Cohabitation –Employment – Ethnicity- Fertility- Health - Households & household change- Marriage-Migration- Mortality- Social mobility.....
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On-line Resources

- Searchable database of publications.
- Information about current and past projects.
- Interactive training modules.
- Online Data Dictionary.
- Guide to using LS and applying for data.
- Links to other documentation & information.
- Downloadable mini data sets and tables

www.celsius.lshtm.ac.uk
