



# Inequalities in rates of amenable mortality by individual socioeconomic position

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23 March 2018

# Background: amenable mortality

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*Premature deaths which should not occur in the presence of timely and effective health care*

- 51 causes: e.g. measles, TB, breast cancers, hypertension, maternal deaths and surgical misadventures
- Age limit < 75 years

# Inequalities – Europe

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- Majority of overall amenable mortality studies
- First studies of inequalities in rates of amenable mortality
- Socioeconomic Position (SEP)/demographic measures:
  - Income
  - Educational attainment
  - Occupational social class
  - Household composition
  - Ethnicity and race

# Inequalities – Europe

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# Inequalities – Europe

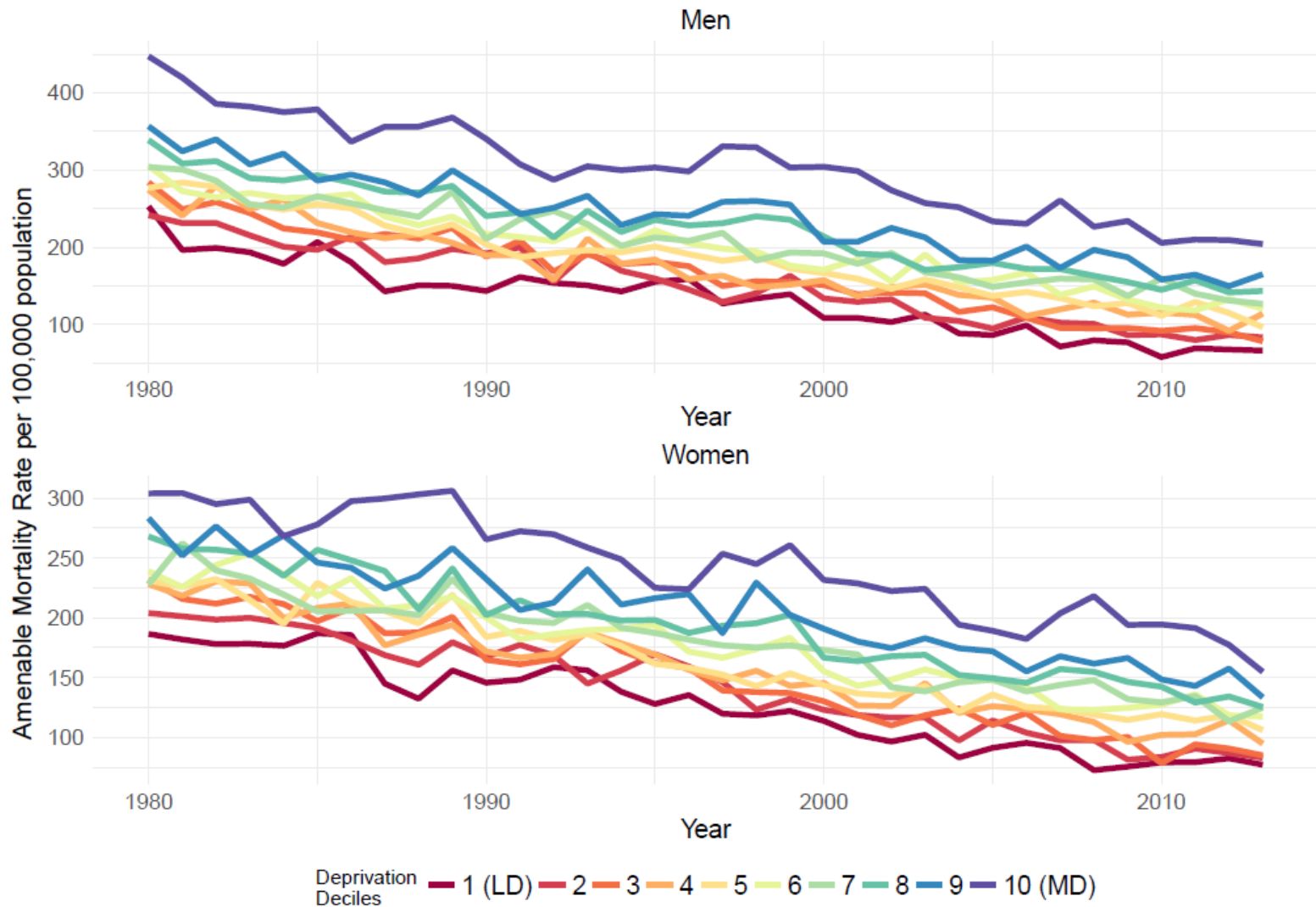


# Inequalities – Scotland

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- No accurate population wide individual measure of socioeconomic position
- Area level deprivation:
  - Carstairs index
  - SIMD

# Inequalities – Scotland



# Methods: Data

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- Scottish Longitudinal Study
  - 5.3% sample of Scottish residents collected from the Census
  - Linked to Death Records
- 1991 and 2001 Censuses, with follow-up until 2010.
- Individual SEP:
  - Educational attainment
  - Occupational social class – RGSC and NS-SEC
  - Household relationships
- Age limits adjusted: 35 to 74 years
  - Stabilise SEP measures



# Methods

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- Two overall study periods → 1991 – 2000 and 2001 – 2010
  - 1991: '91-'94, '95-'97, '98-'00
  - 2001: '01-'04, '05-'07, '08-'10
- Person years at risk: Census day until 31 December 2000/2010
- Outcomes: rates of amenable, non-amenable and all cause mortality, and inequalities within
- Inequality indices – absolute (SII) and relative (RII)
  - Poisson regression, sex & SEP specific models adjusting for age group
  - Assumes gradients within mortality rates

# Results

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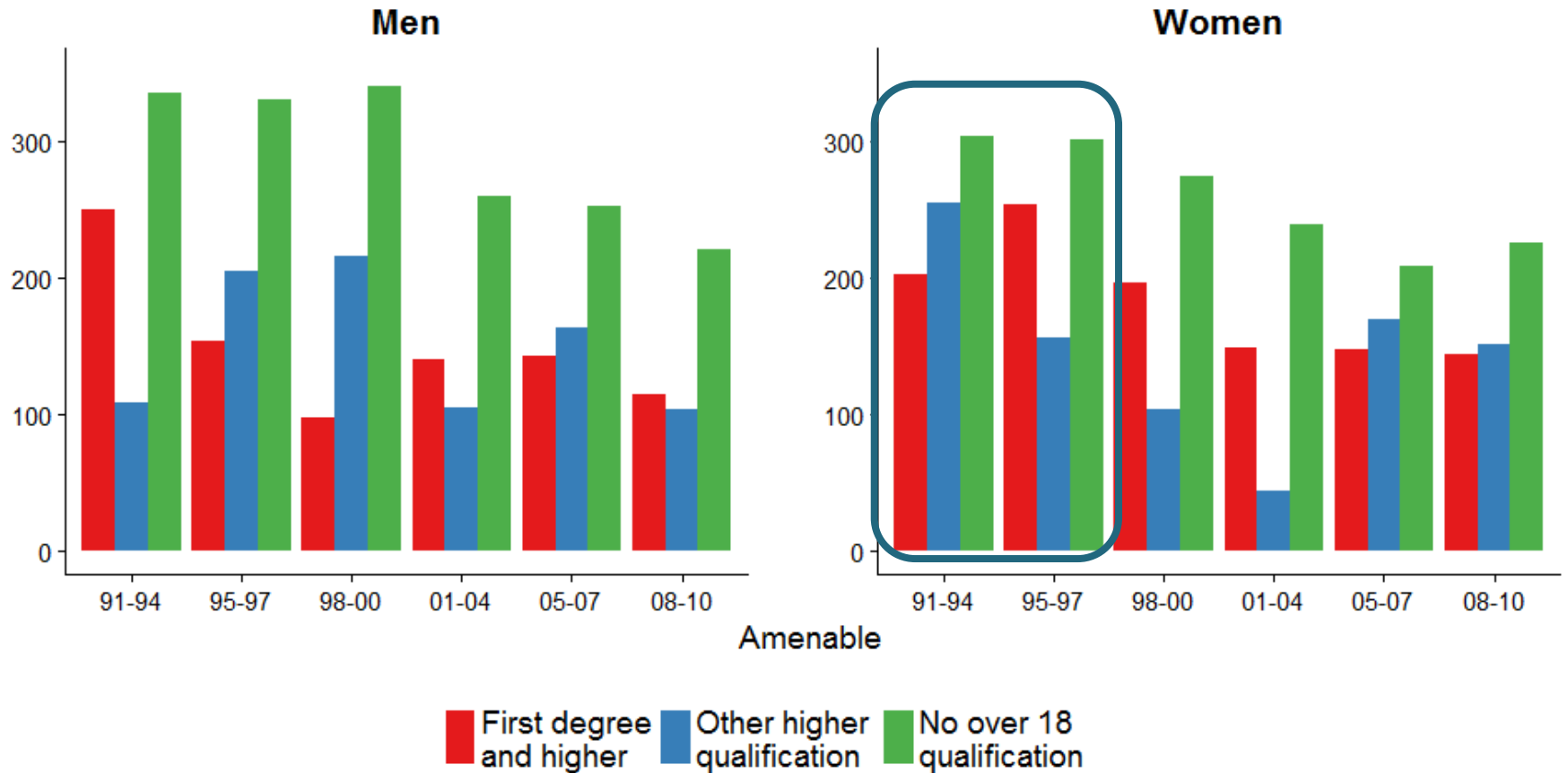
- 306,771 SLS members enumerated at 1991 and 2001 Censuses and through NHS Central Register
- 85 persons removed due to inconsistent/missing sex, dates of birth and/or ages.
- 40,307 all cause deaths – all ages
- 6,462 amenable deaths – under 75 years (16% of all deaths)
  - Number of deaths/PYAR analysed differs by SEP

# Educational Attainment

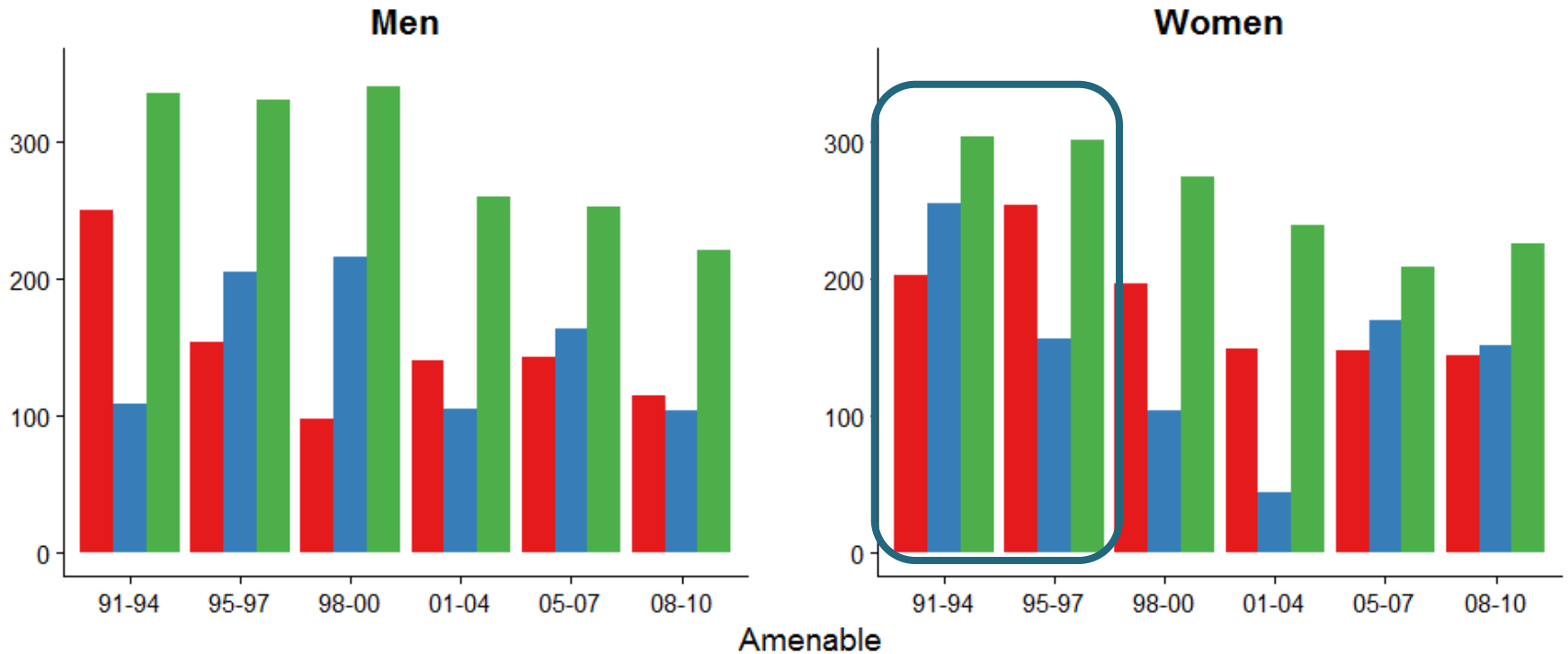
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- 3 Categories:
  - » *First degree and higher*
  - » *Other higher qualification (HND, HNC etc)*
  - » *No over 18 yr qualification (Highers, etc)*

# Educational Attainment

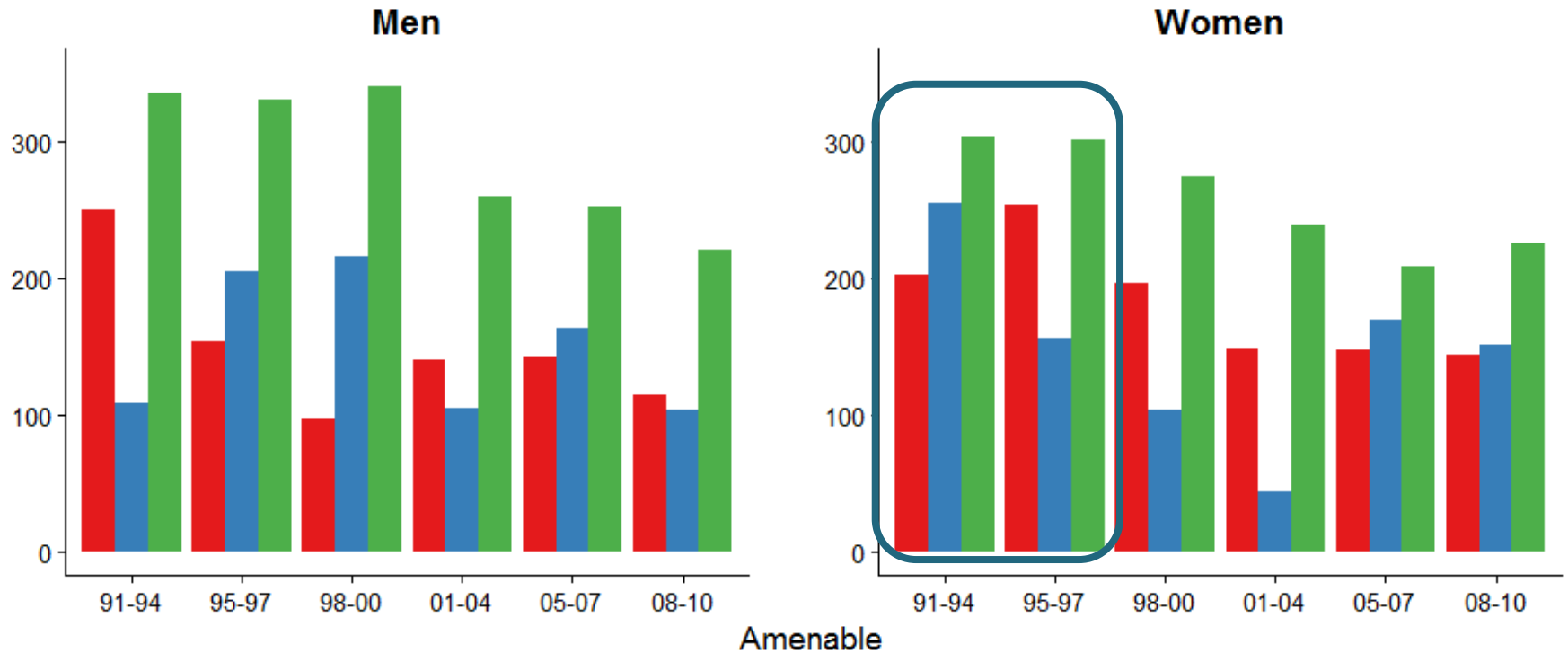


# Educational Attainment



Men	RII	SII
1991-94	3.43	348.5
2001-04	3.80	270.1

# Educational Attainment



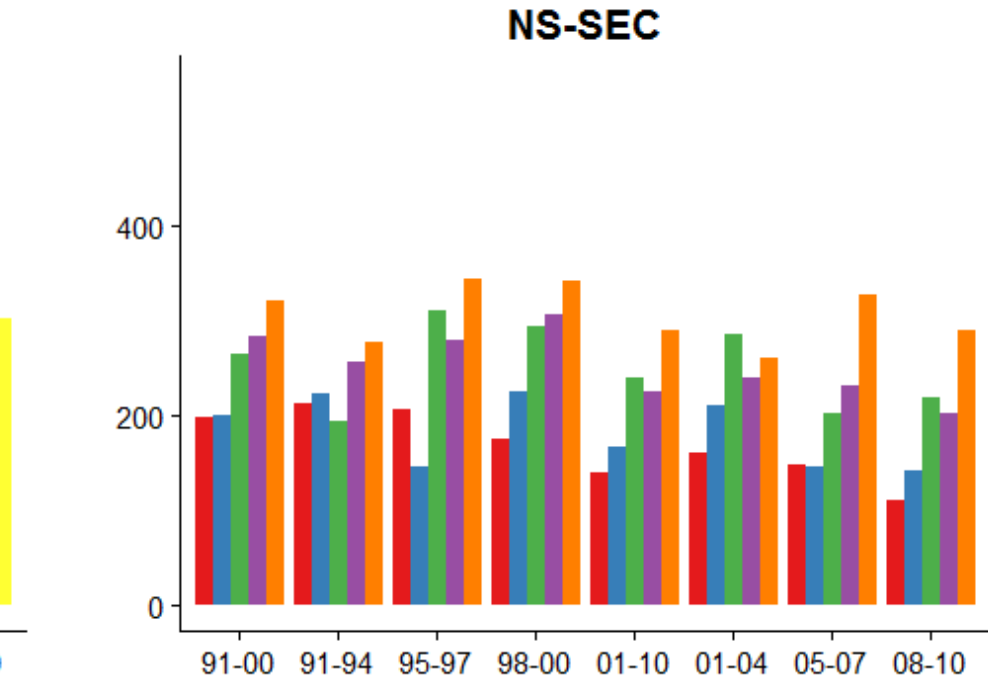
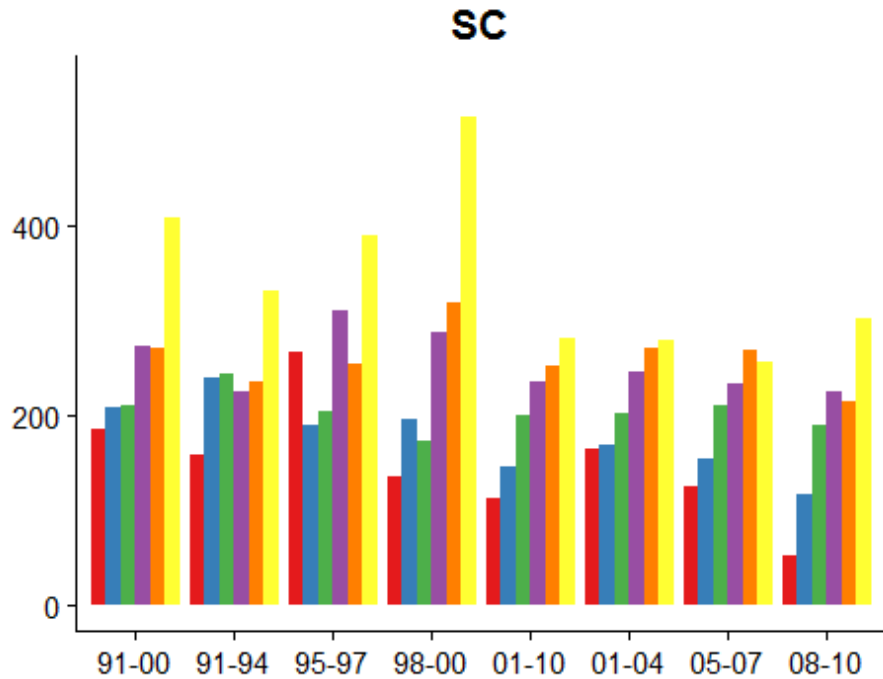
Women	RII	SII
1991-94	1.69	152.4
2001-04	2.58	195.8

# Occupational Social Class

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- 2 UK based measures: (RG)SC and NS-SEC
- Back & forward coded
- SC – 6 categories – skilled manual and non-manual split
- NS-SEC – 17 levels collapsed into 5 for analysis

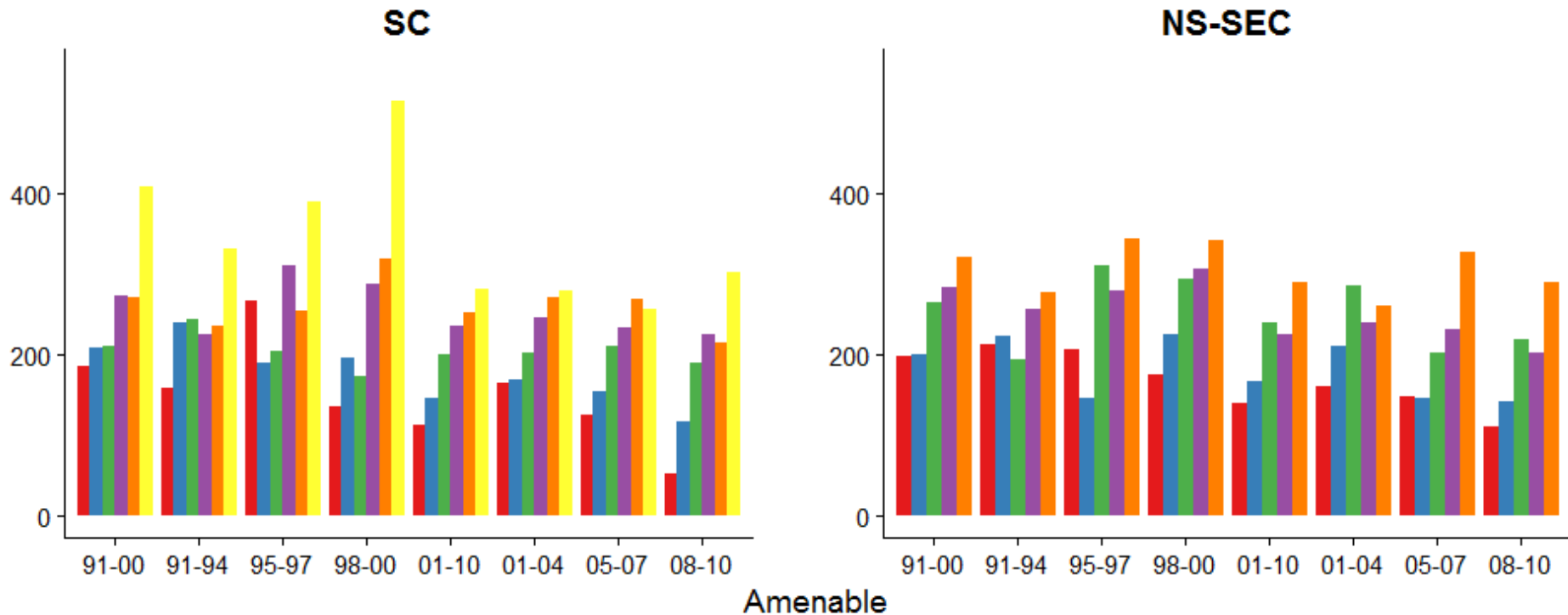
# Occupational Social Class



Amenable



# Occupational Social Class



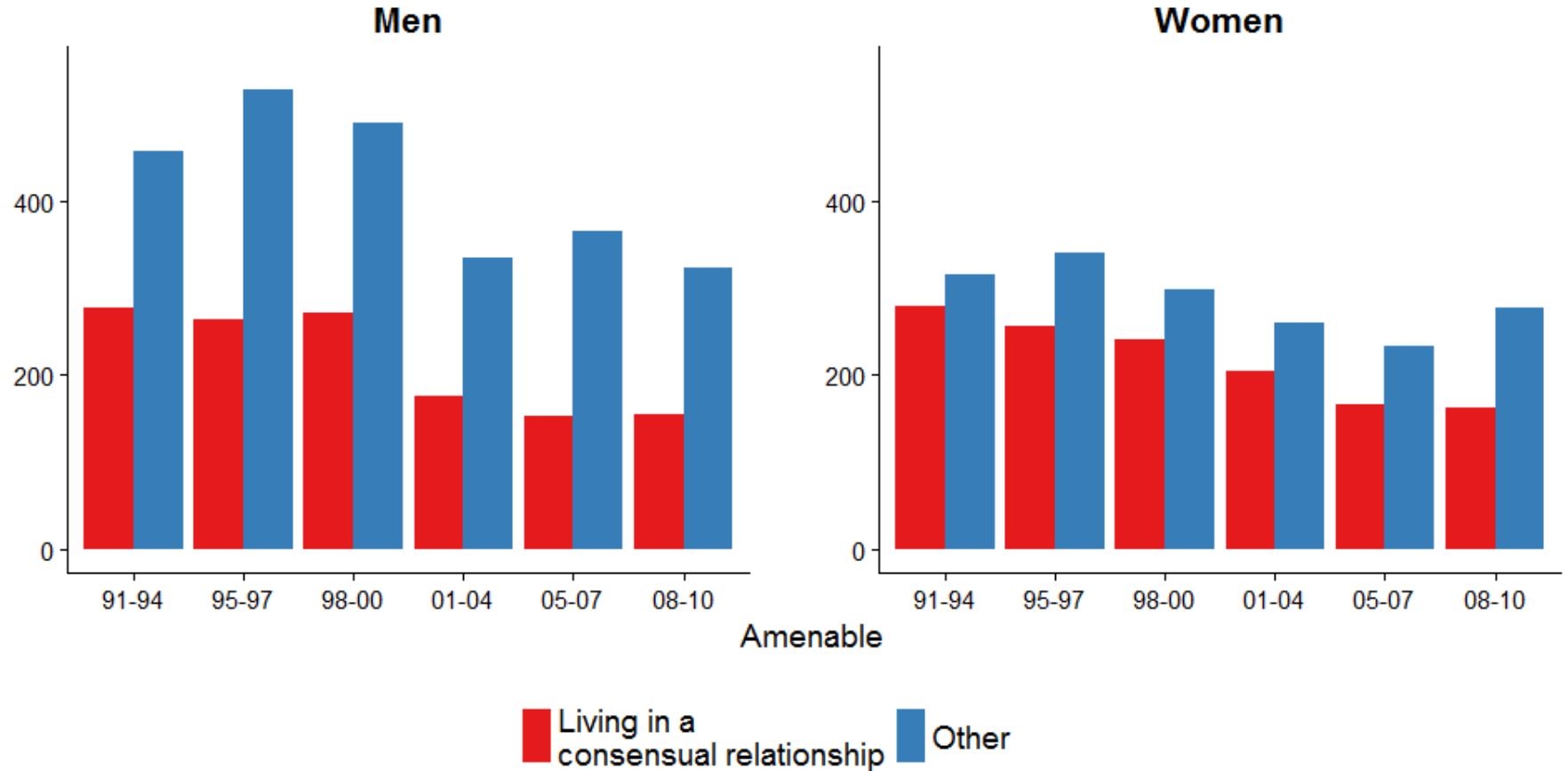
Men	SC		NS-SEC	
	RII	SII	RII	SII
1991-94	1.20	31.1	1.49	92.0
2001-04	2.12	142.8	1.93	140.3

# Household Relationships

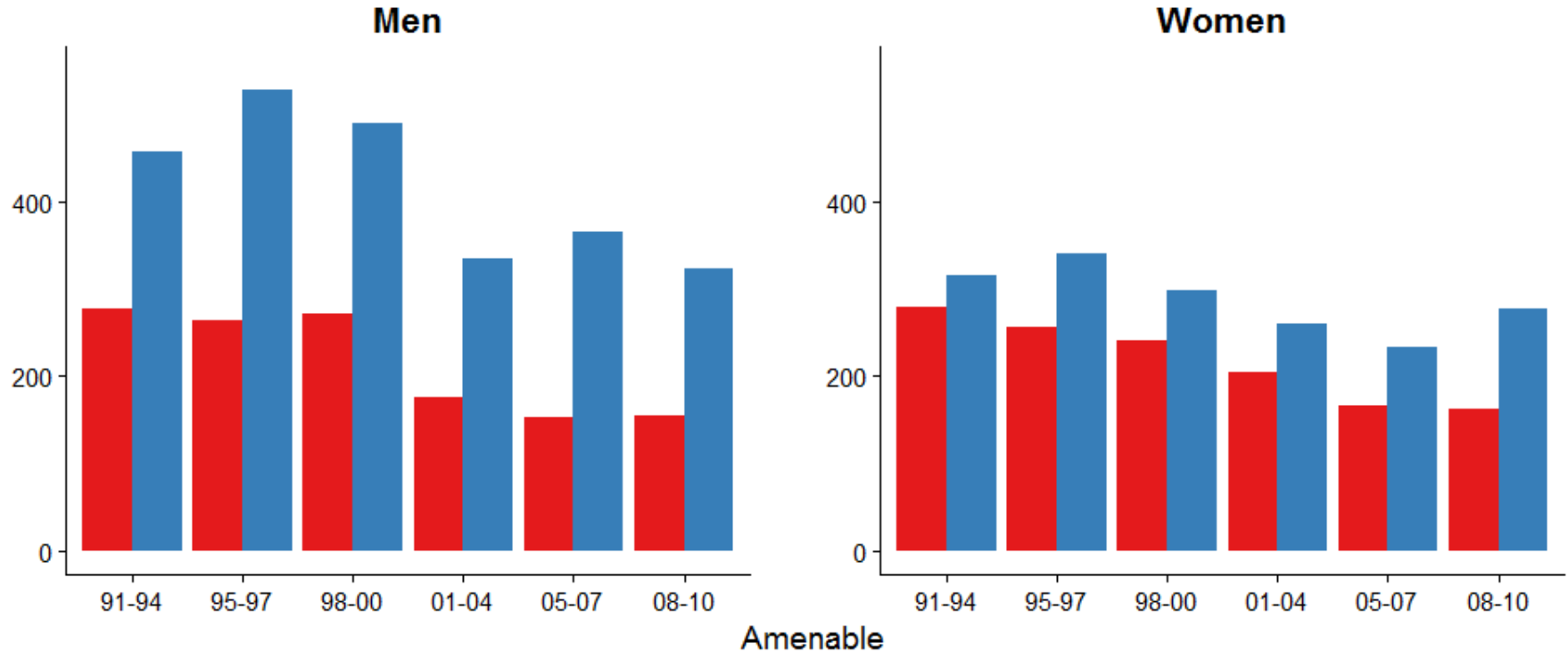
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- Extension to the marital status categories
- Self-defined relationship
- Consensual relationship vs other
- Includes 83.5% of all male and 87.5% of all female deaths under 75 years

# Household Relationships

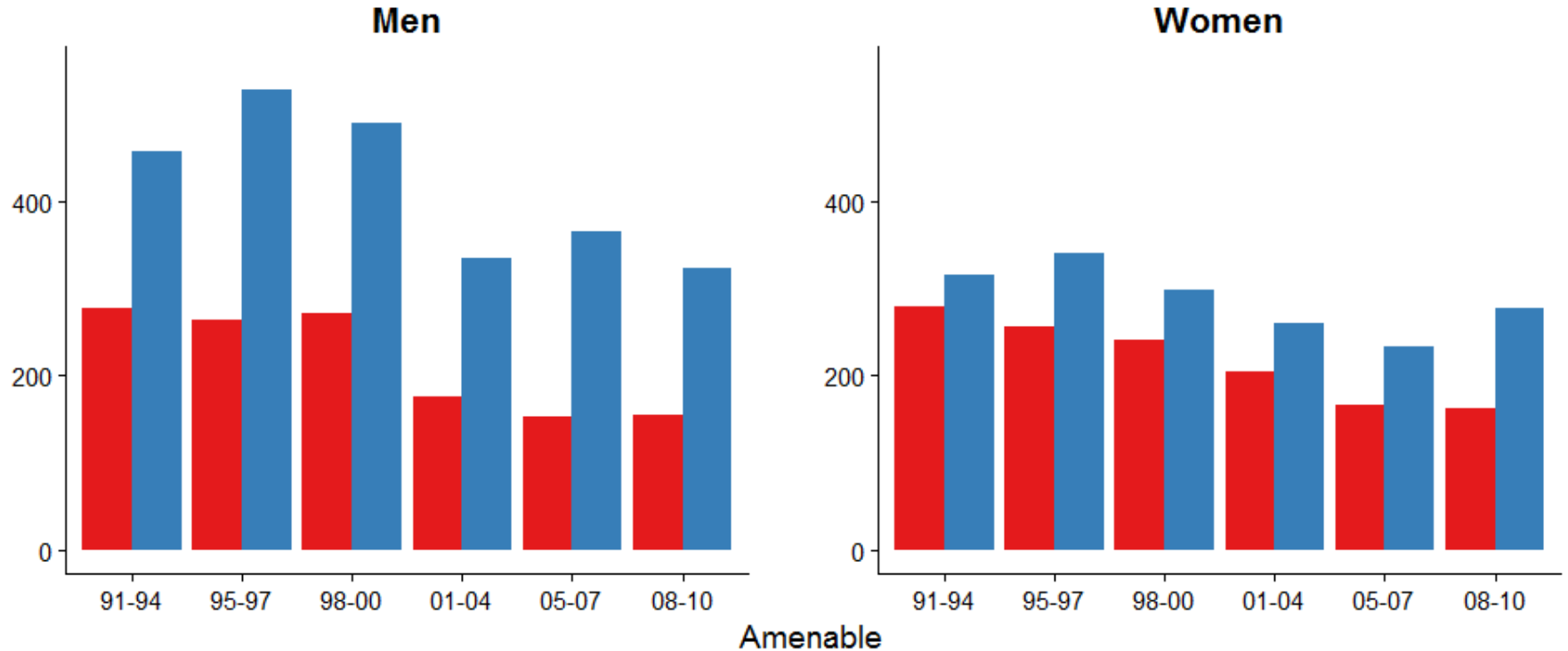


# Household Relationships



Men	RII	SII
1991-94	2.75	291.7
2001-04	4.84	314.7

# Household Relationships



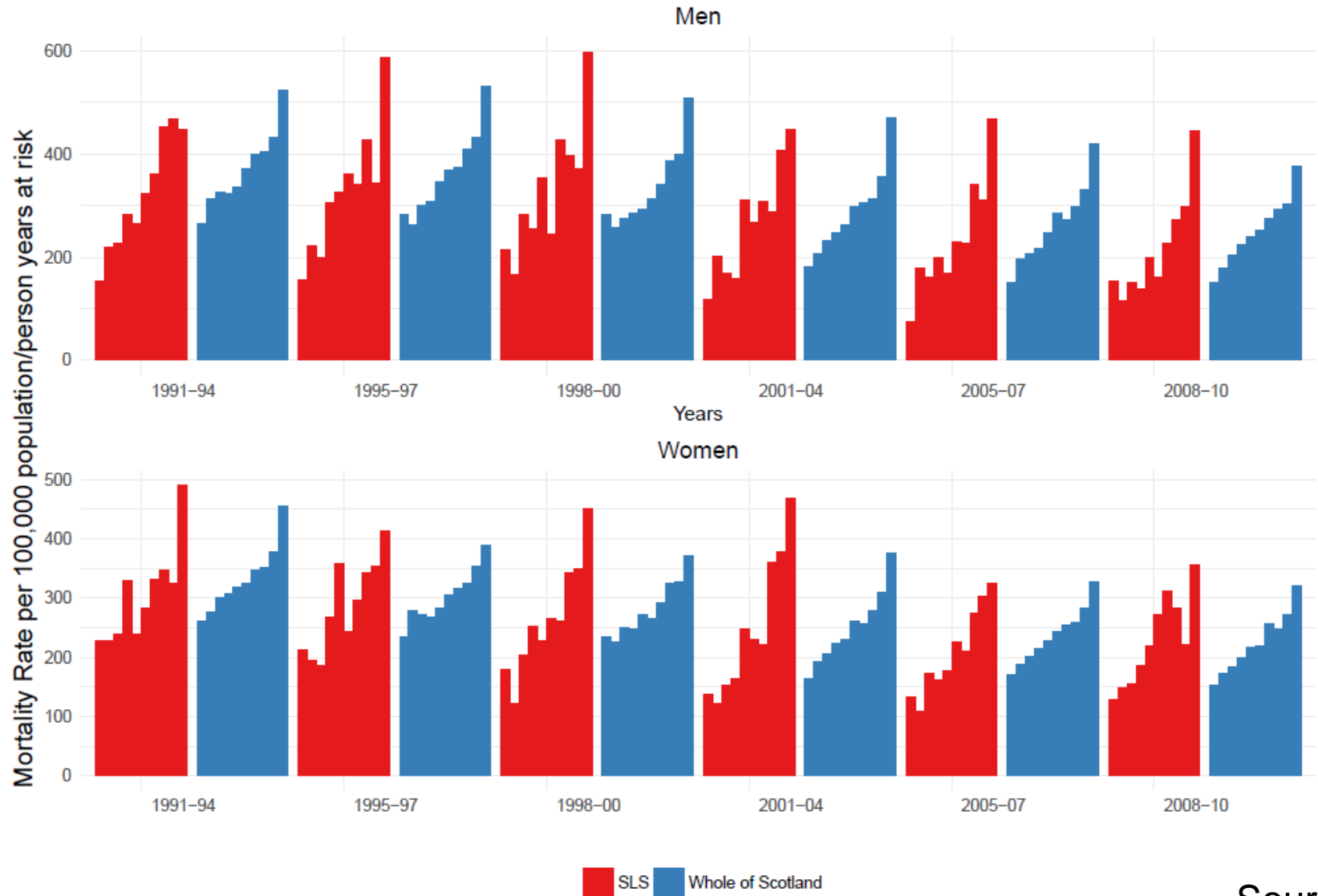
Women	RII	SII
1991-94	1.31	79.1
2001-04	2.07	153.8

# Comparing Sample to Population

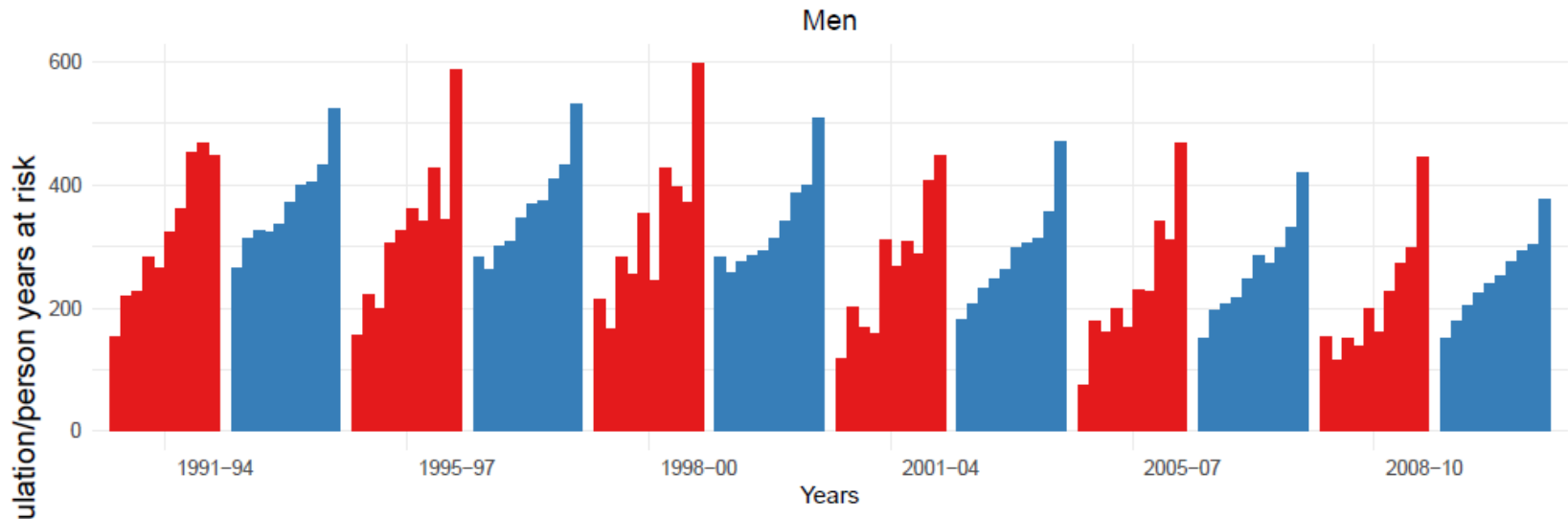
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- Area level deprivation – Carstairs score

# Comparing Sample to Population



# Comparing Sample to Population



		RII		SII	
		SLS	Total Popn	SLS	Total Popn
Men	1991-94	3.18	1.91	332.8	135.7
	2001-04	3.60	2.51	291.5	144.9
Women	1991-94	1.98	1.69	199.2	99.6
	2001-04	4.45	2.19	301.7	109.1

Source: SLS



# Conclusions

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- 1991 – 2000:
  - Absolute and relative inequalities were largest for educational attainment and household relationships, and smallest for occupational social class measures
- 2001 – 2010:
  - Relative inequalities were generally larger than previous census period, but less difference between the 4 measures
  - Absolute inequalities greatest in household relationships (men), fairly similar (women)



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# Thank you

The help provided by staff of the Longitudinal Studies Centre - Scotland (LSCS) is acknowledged. The LSCS is supported by the ESRC/JISC, the Scottish Funding Council, the Chief Scientist's Office and the Scottish Government. The authors alone are responsible for the interpretation of the data. Census output is Crown copyright and is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland

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