Sex by numbers:
what statistics can, and can't, tell us about sexual behaviour

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THE INSTITUTE OF SEXOLOGY

The Institute of Sexology
Thursday 20 November 2014 - Sunday 20 September 2015

THE INSTITUTE OF SEXOLOGY
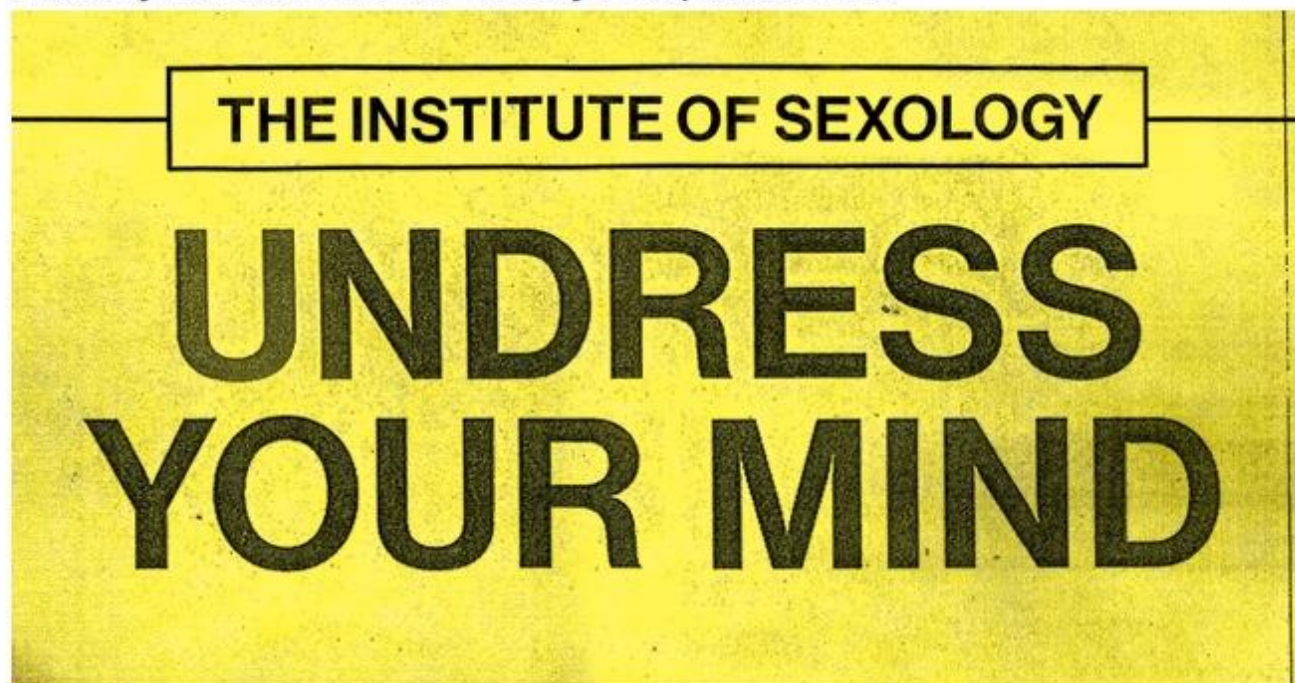
UNDRESS YOUR MIND

'The Institute of Sexology' is a candid exploration of the most publicly discussed of private acts. Undress your mind and join us to investigate human sexuality at 'The Institute', the first of our longer exhibitions. Featuring over 200 objects spanning art, rare archival material, erotica, film and photography, this is the first UK exhibition to bring together the pioneers of the study of sex.
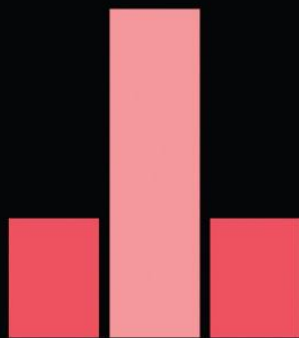
SEX

BY NUMBERS

The Statistics of Sexual Behaviour
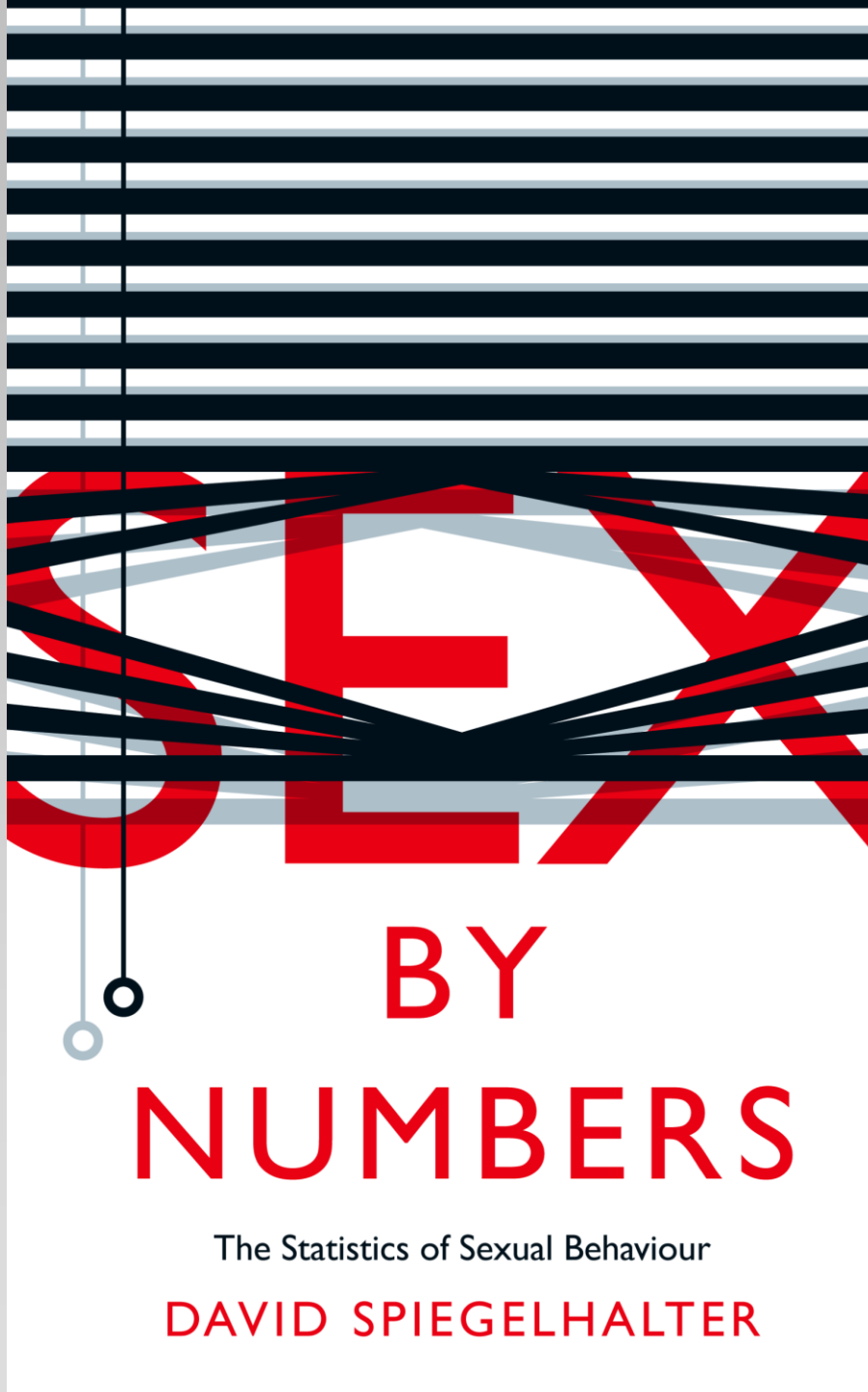
DAVID SPIEGELHALTER

David Spiegelhalter

sex
by numbers

What is sex?

"*I did not have sexual relations with that woman, Miss Lewinsky*"
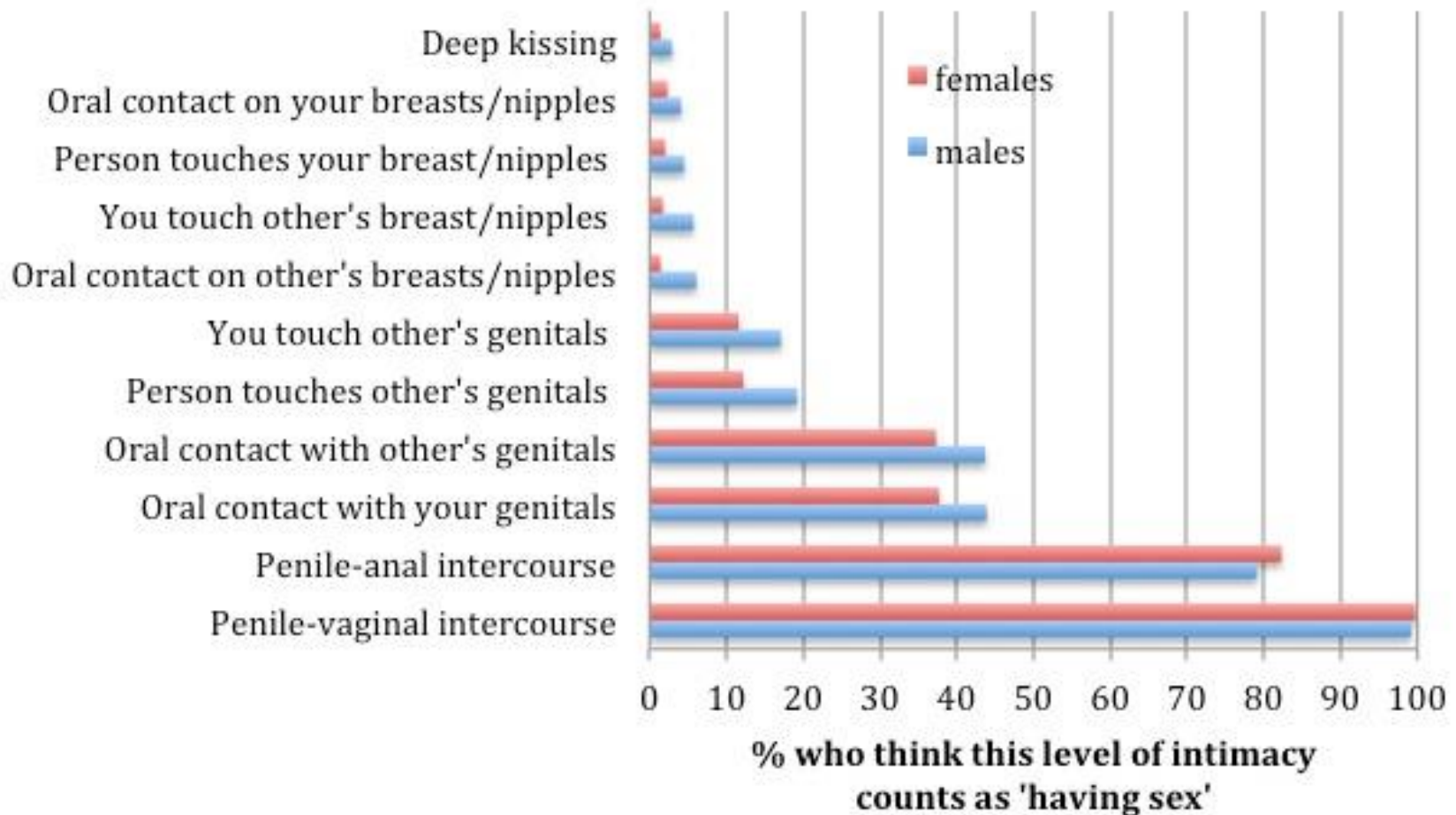Bill Clinton, January 26th 1998:

Figure XX What 599 US students thought of as 'having sex'

Clinton's impeachment trial by the US Senate in 1999:
45 Senators said he was guilty of perjury,
55 Senators said he was not guilty

Giving star ratings to data

**** we can, to all intents and purposes, believe the
numbers – eg good official statistics

*** reasonably reliable numbers, with errors that are
unlikely to make substantial difference. Up to around
20% up or down eg good surveys

** can be used as a very rough ballpark figures, but details
are unreliable. 20% to 100% errors. eg internet
panels

*   could well be more than double or half the answer. Eg
terrible volunteer 'surveys'

Some 4* stats

- 48% of births in 2012 were formally 'illegitimate'

- In 1973, one in twenty 16-year-old girls got pregnant.

- For every 20 girls born, 21 boys are born.

- In 1938, at least half of brides under 20 were pregnant when they got married.
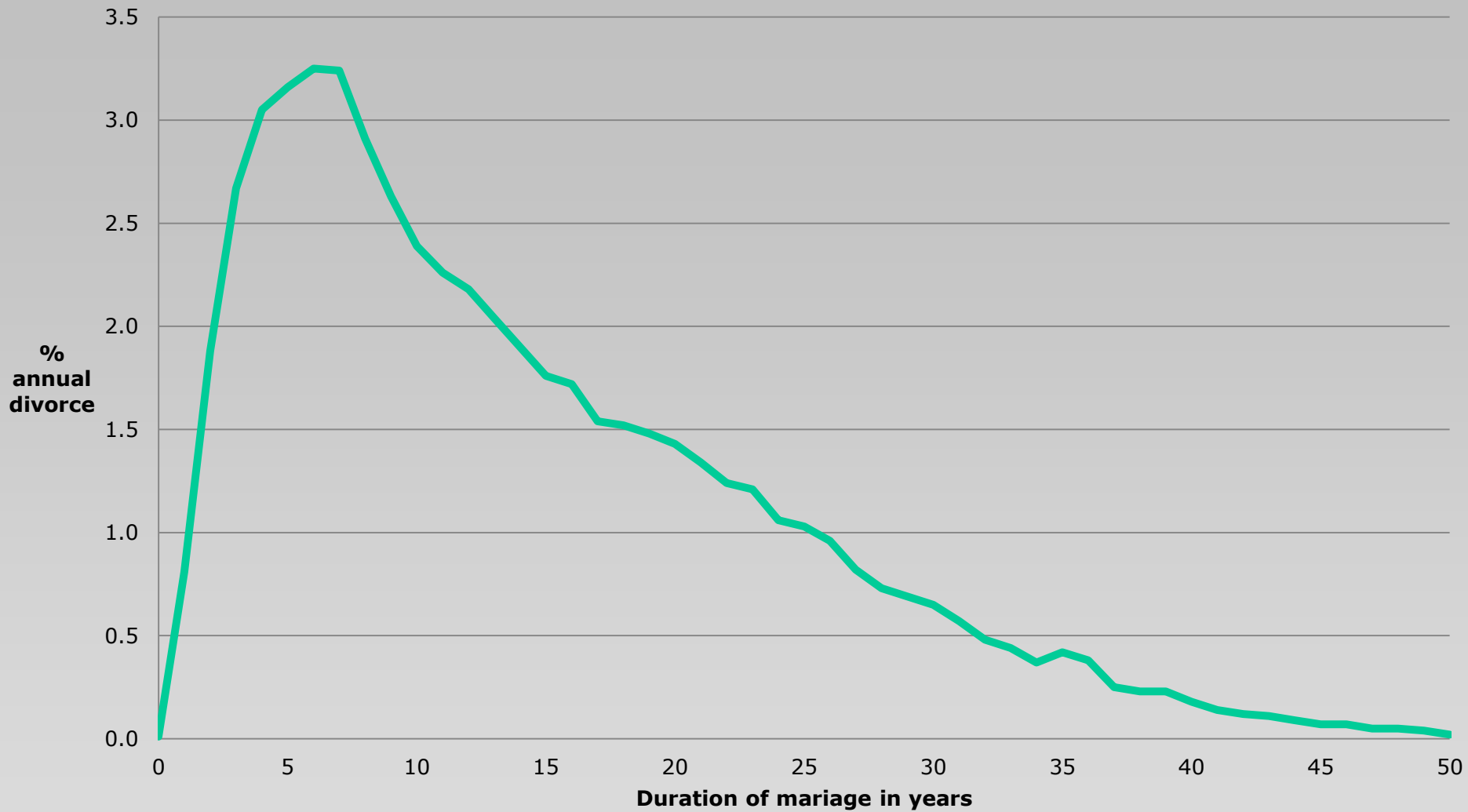
My favourite 4* stats?

Sex ratio: England and Wales, 1838 − 2012
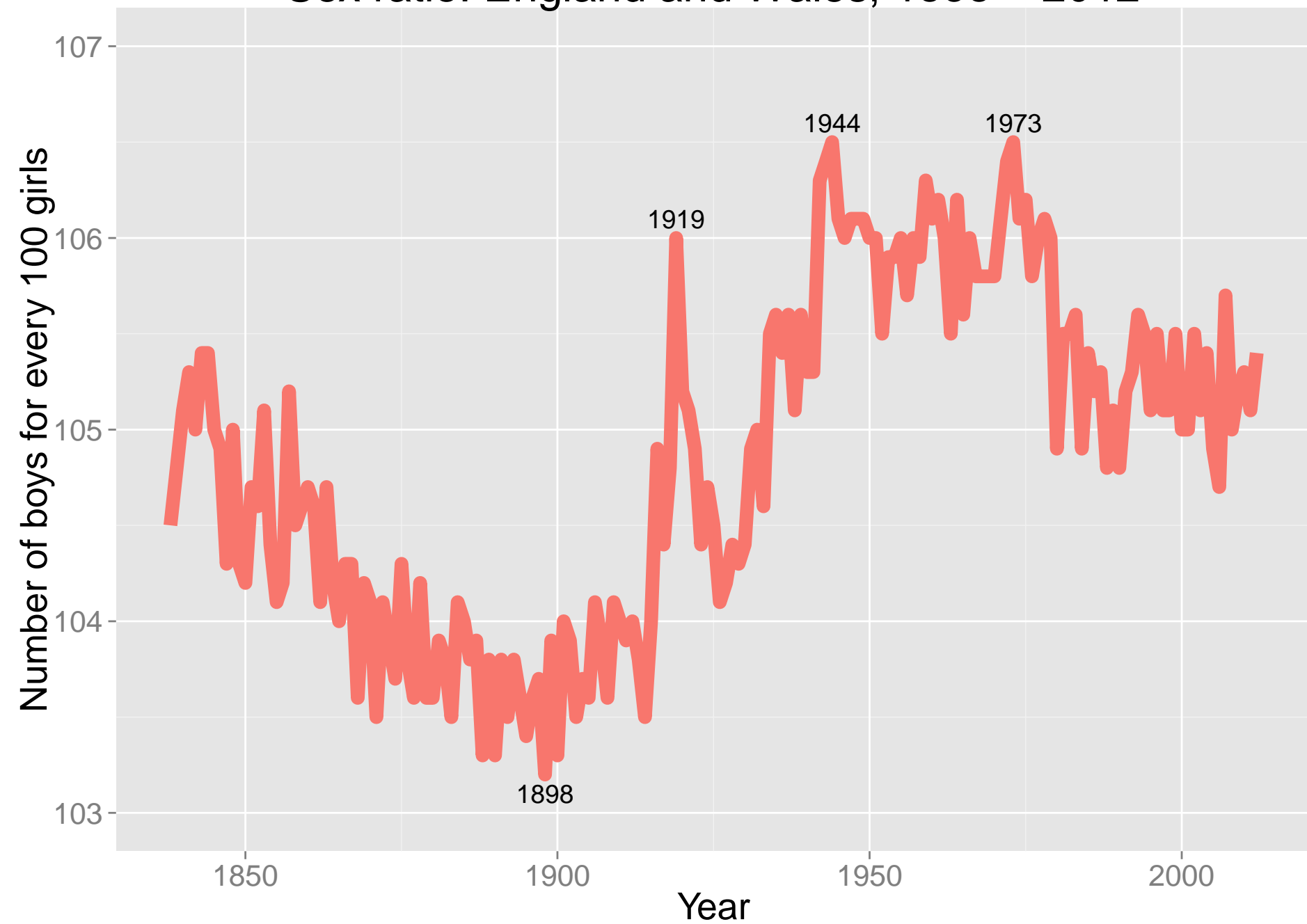
How good is this number?

4*!

'Hazard' curve for marriages in England and Wales

3*

Sexual attitudes and lifestyles in Britain: Natsal-3

- 15,162 men and women aged 16-74 in 2010-2012

- Overall response rate: 66% of those contacted

- CASI (Computer-Assisted Self-Interview)

Some 3* stats (Natsal)

- Median age at female first sex:
  - 19 for those born around 1940,
  - 16 for those born around 1980.

- Median 4-week frequency of sex for 16-44s:
  - 5 in 1990
  - 3 in 2010

- One in five 16- to 24-year-old women reported sexual experience with another woman, greatly increased from 1990.
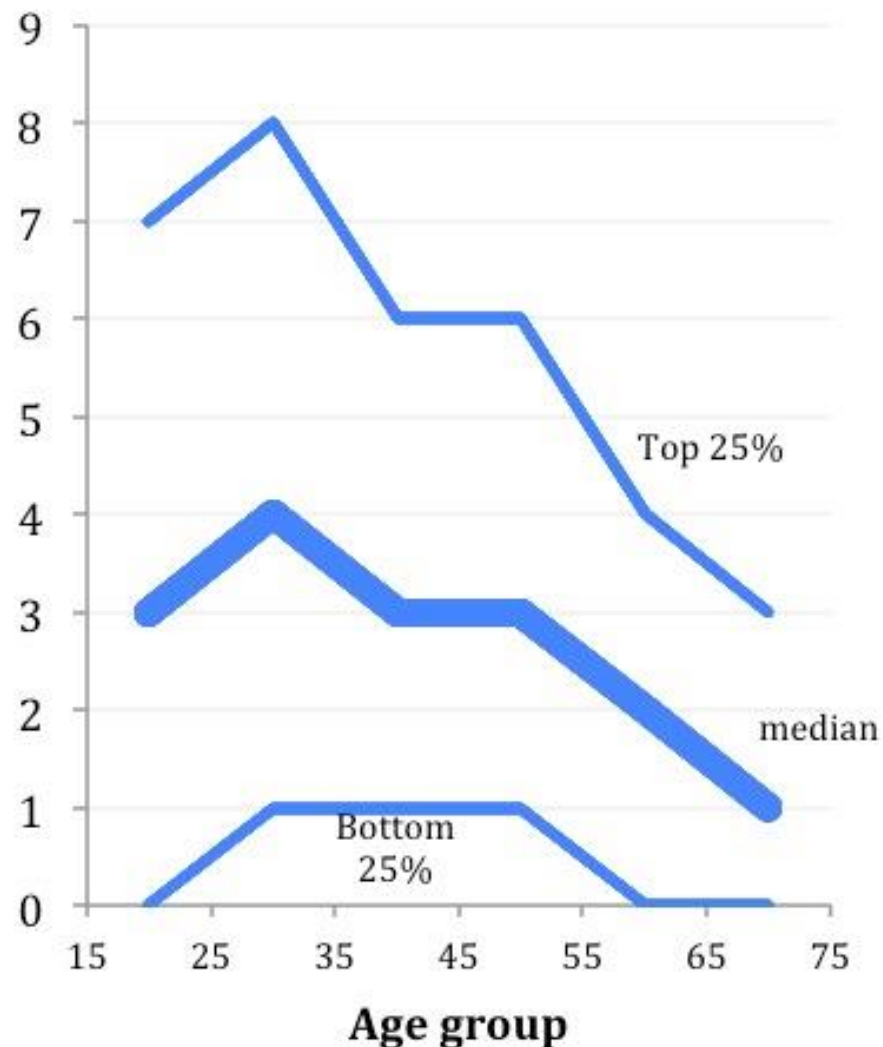
Britons having sex less often

National Survey of Sexual Attitudes and Lifestyles finds frequency of sex has fallen by 20% since last survey in 2000
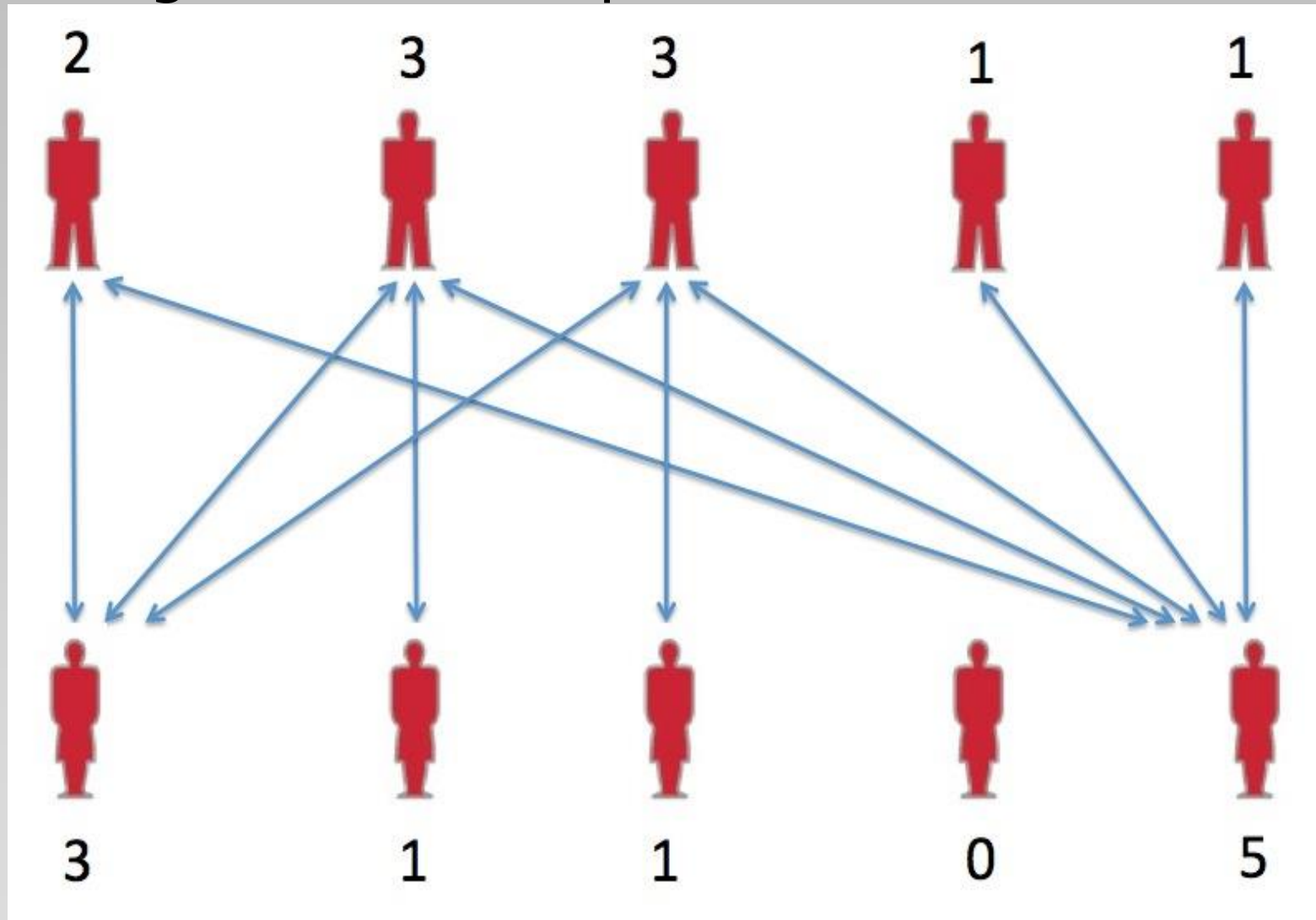
Frequency of sex in last 4 weeks: sexually active women
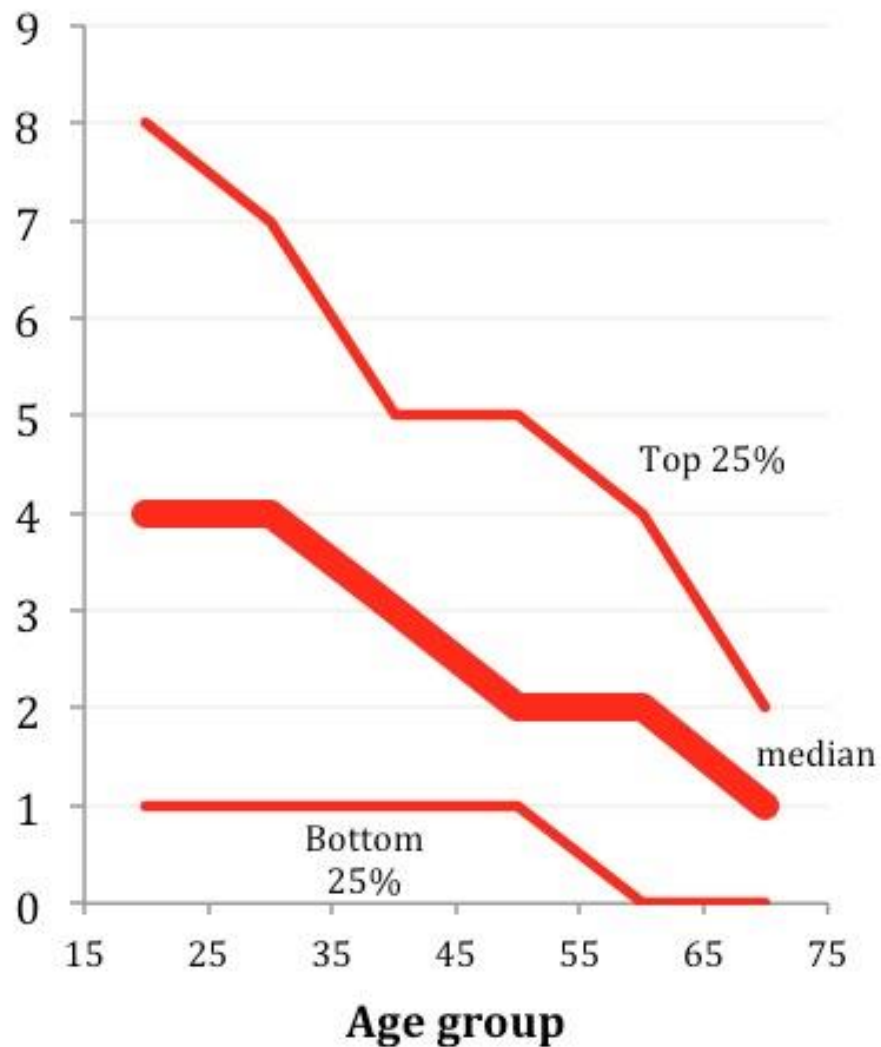
Frequency of sex in last 4 weeks: sexually active men

In closed population, equal men and women, average number of partners should match

Total number of partnerships = 10;
So mean = 2 for both men and women

Average (mean) number of opposite-sex partners, lifetime (people aged 16–44)

	Men	Women
Natsal–1 1990–1991	8.6	3.7
Natsal–2 1999–2001	12.6	6.5
Natsal–3 2010–2012	11.7	7.7

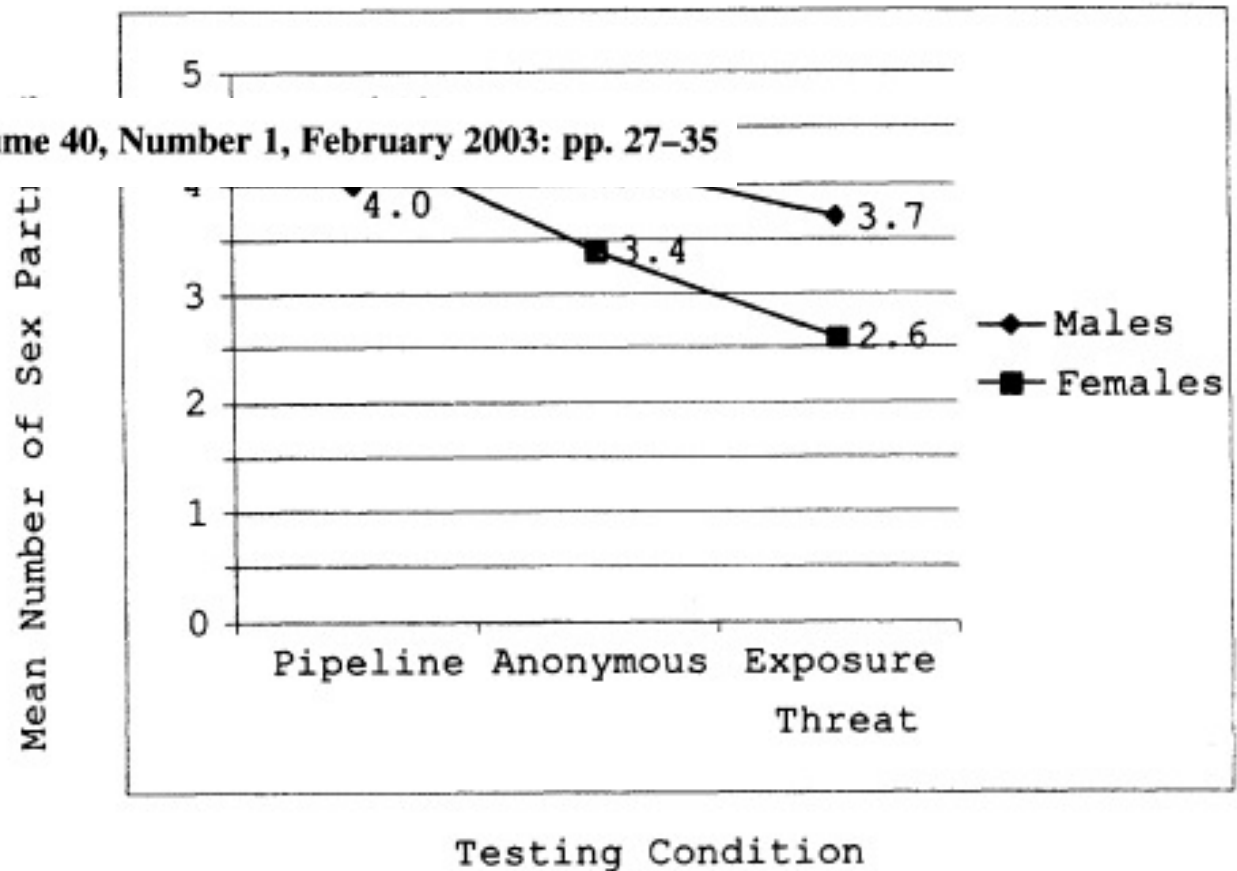# How many sexual partners have people had?

Reported number of lifetime opposite-sex partners
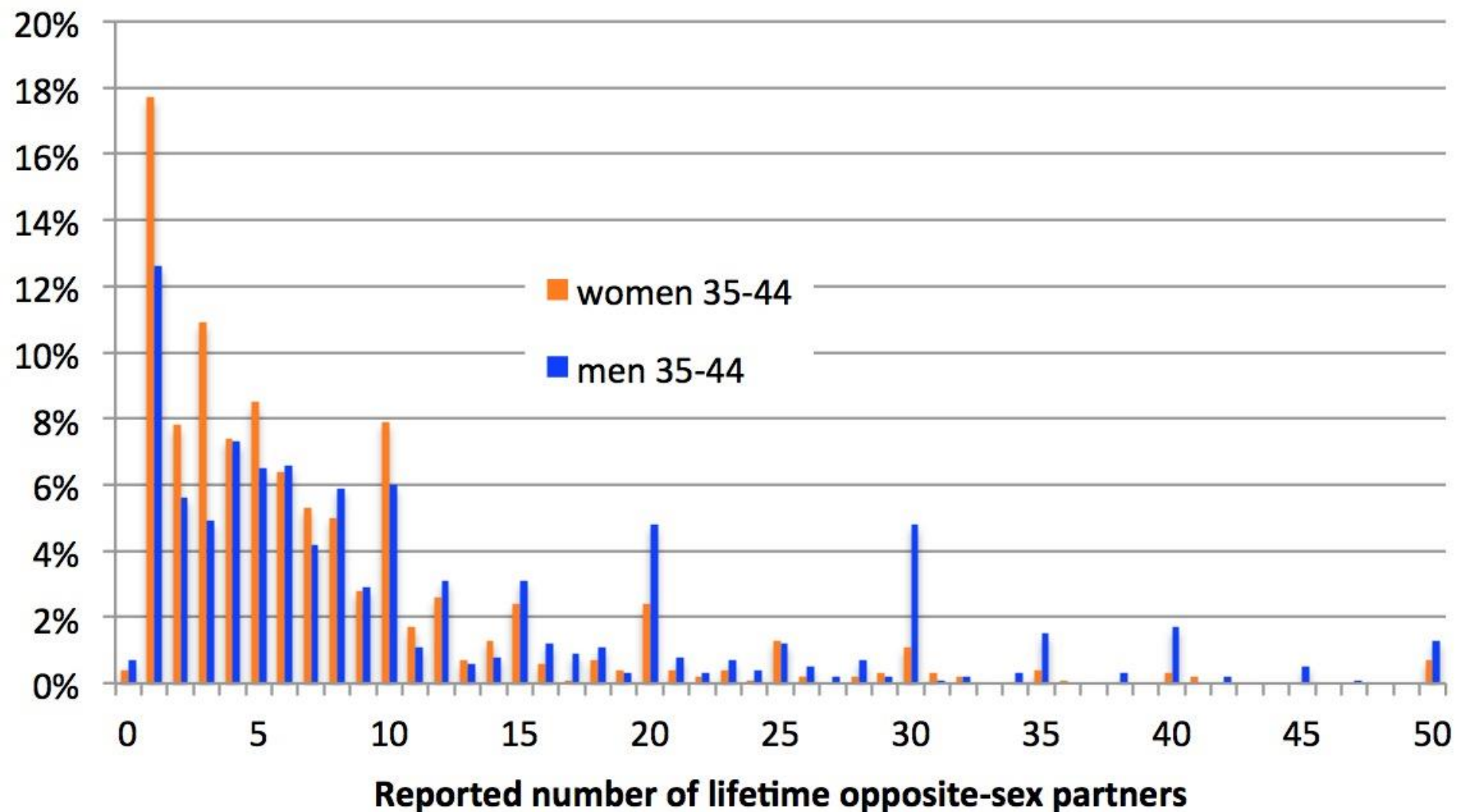
Can also do experiments…

Truth and Consequences: Using the Bogus Pipeline to Examine Sex Differences in Self Reported Sexuality

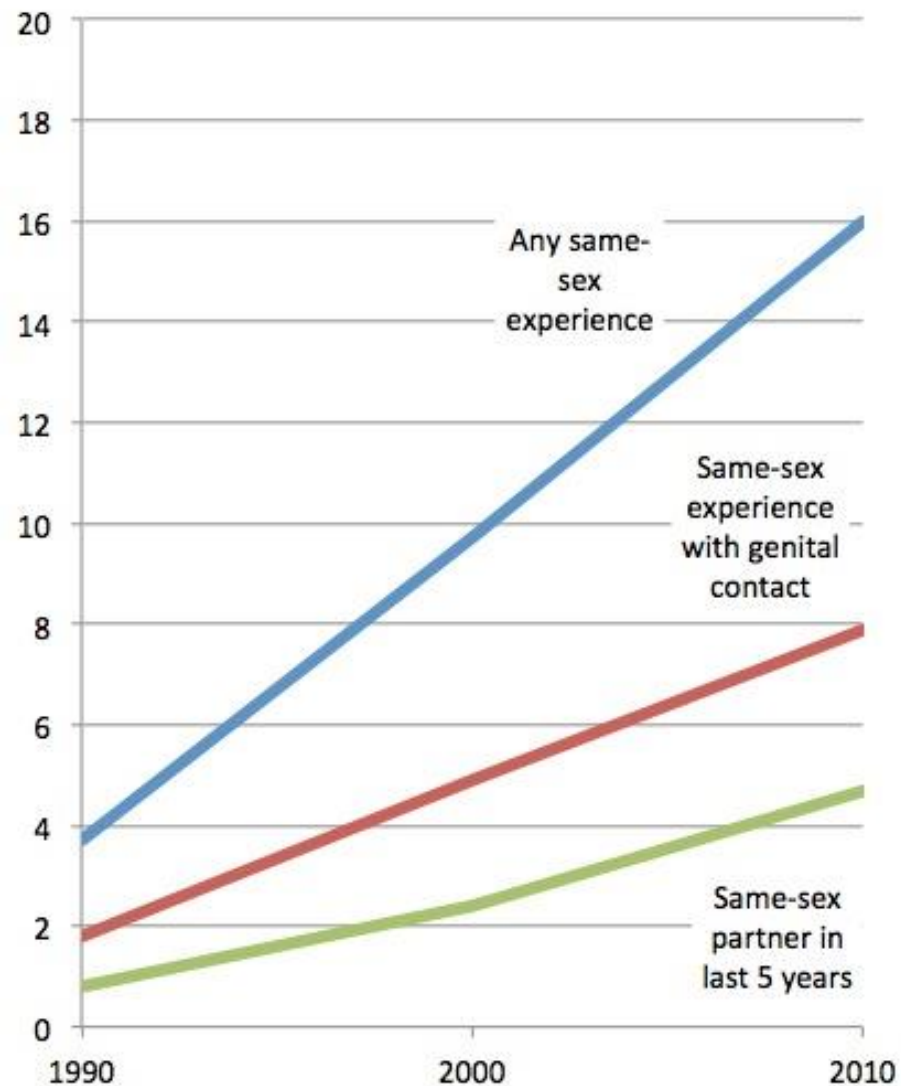**Figure 2. Mean number of sexual partners as a function of participant sex and testing condition.**

The Journal of Sex Research Volume 40, Number 1, February 2003: pp. 27–35

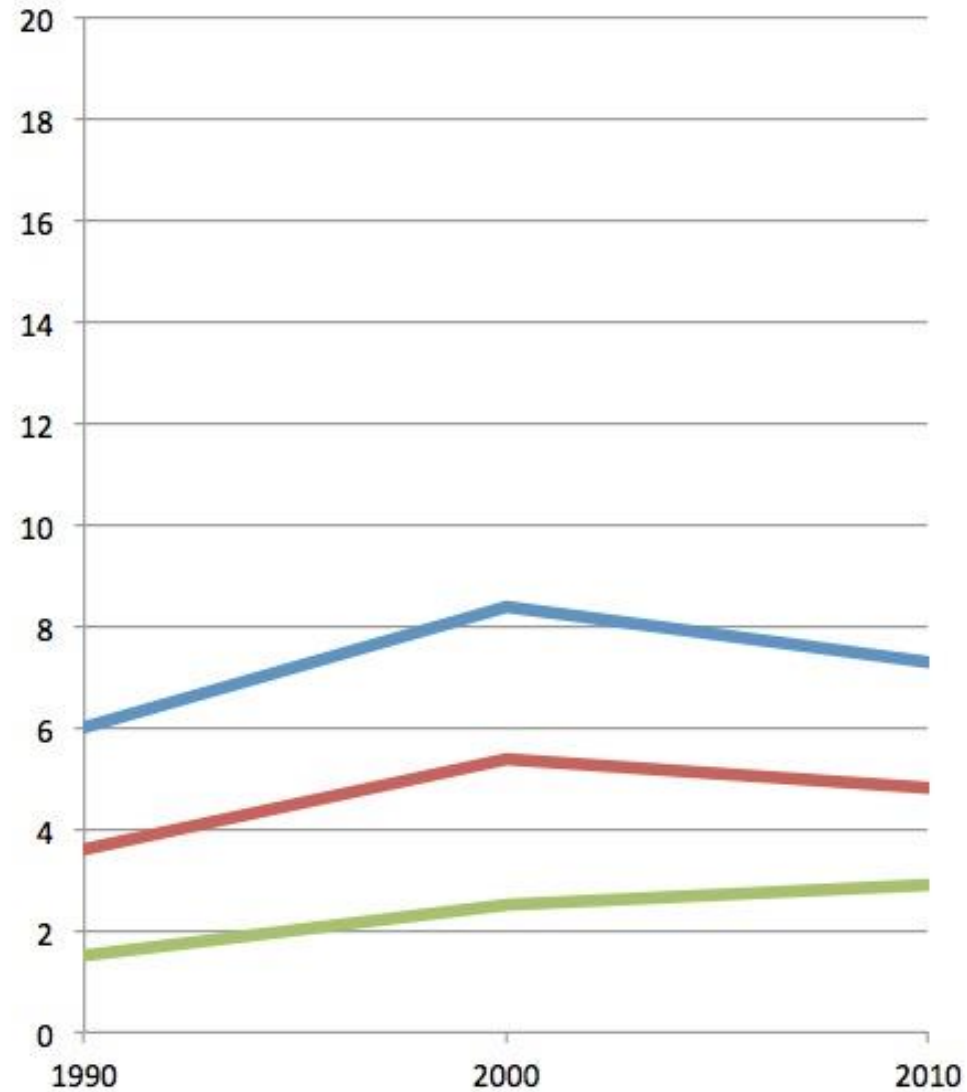96 men, 105 women randomised to three different questioning modes
- Anonymous
- Exposure threat
- 'Bogus pipeline'

Same-sex experiences?

Alfred Kinsey
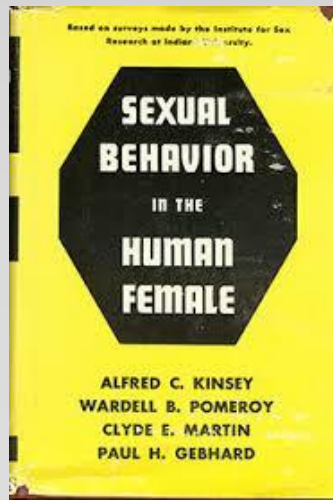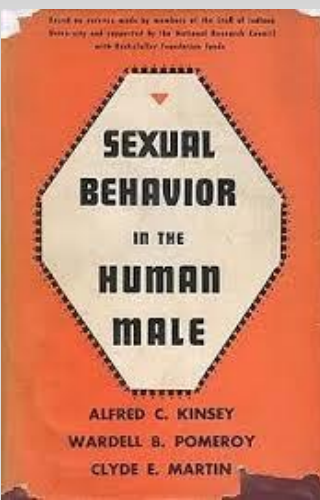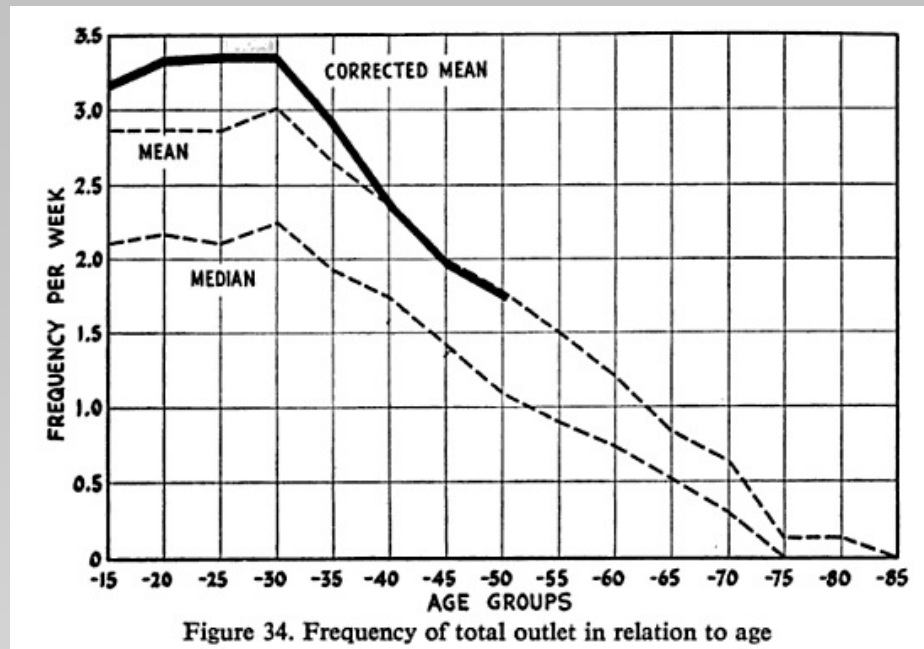

Collected 15,000 sex histories in the 1940s / 1950s

SEXUAL BEHAVIOR IN THE HUMAN MALE

ALFRED C. KINSEY
WARDELL B. POMEROY
CLYDE E. MARTIN

SEXUAL BEHAVIOR IN THE HUMAN FEMALE

ALFRED C. KINSEY
WARDELL B. POMEROY
CLYDE E. MARTIN
PAUL H. GEBHARD

Kinsey measured 'outlets' (orgasms)

Figure 34. Frequency of total outlet in relation to age

Claimed:

- 37% of men had had homosexual outlets

- 17% of men brought up on farms had had outlets with animals

2* statistics?

Time Out London Sex Survey 2013: the results are in!

And they're absolutely filthy. Find out where you rank in the depravity of it all with our interactive sex map, saucy statistical breakdowns and barely believable tales of good times gone wrong

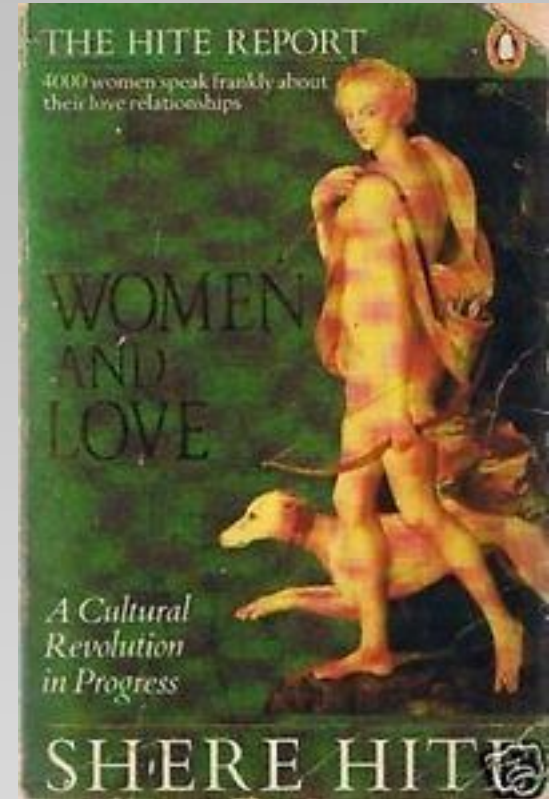f Share   Tweet   8+ **1257**
                            SHARES

1* The sample size is big – 10,042 people

But '*the sample consists of those who chose to fill out our sex survey online.'*

Shere Hite - 1970s
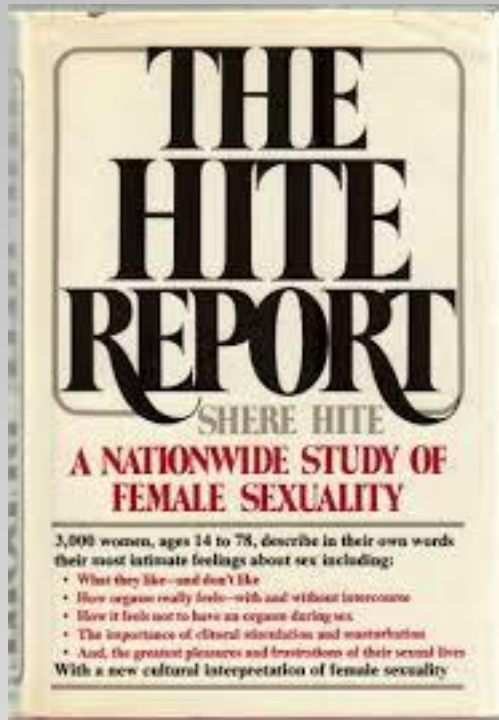
- *'4,000 women speak frankly'*
- Out of 100,000 given questionnaires

Some 1* stats (Shere Hite, 1970s)

- 84% of women were emotionally unsatisfied with their relationships
- 95% reported forms of 'emotional and psychological harassment' from their men
- 70% of women married for more than five years were having affairs.

Some forensic statistics….

- Claim: *70% of women married 5 years or more are having sex outside of their marriage*

Statistical Data

70% of women married five years or more are having sex outside of their marriages.

	AGE			EDUCATION
—%	under 18	71%		up to high school graduate
65%	18–34	70%		some college
75%	35–50	69%		college graduate
71%	51–70			
—%	71 and over			OCCUPATION/EMPLOYMENT
		72%		homemaker and/or mother (full-time)
	INCOME: annual	68%		full-time employment
71%	under $5,000	69%		part-time employment
72%	$6,000–$14,000	70%		unemployed/student
68%	$15,000–$39,000			
69%	$40,000–$74,000			
70%	over $75,000			

	RACE/ETHNICITY
70%	White
71%	Black
70%	Hispanic
69%	Middle Eastern
70%	Asian-American
70%	other

The numbers are too good to be true!

Could not get such similar numbers if real data

1* statistics

Dr Clelia Mosher

- Lecturer at Stanford University
- Interviewed 45 women about their sex lives and attitudes in late 1890s
- Never published results
- Discovered in 1973, 23 years after she died

10. Habit of intercours? Average number of times per week?

per month? *Two or three times.* per year? *Before conception, once*

or, at most twice per month.

11. Was intercourse held during pregnancy? *No.* If so, a) how often?

b) did you desire it at this period? *Occasionally during first months.*

not at all, during last half - or more.

12. At other times have you any desire for intercourse? *Yes.*

a) How often? *Once or twice a month.*

b) At what time in relation to your menses? *Immediately after.*

Occasionally, just before - and rarely, at some other time.

Except in 1st case, it is scarcely ever except when there

is some outside exciting cause.

But generally there is silence…

- A few diaries….

- Infer behaviour from births and marriages..

The Cambridge Group for the History of Population and Social Structure

CAMBRIDGE STUDIES IN POPULATION, ECONOMY AND SOCIETY IN PAST TIME

The Population History of England 1541-1871

A reconstruction

E.A. WRIGLEY & R.S. SCHOFIELD

- Started in 1964
- Volunteers collected data from 404 parishes

CAMBRIDGE STUDIES IN POPULATION, ECONOMY AND SOCIETY IN PAST TIME

ENGLISH POPULATION HISTORY FROM FAMILY RECONSTITUTION 1580–1837

- 26 parishes chosen for 'family reconstitution' – matching records across marriages and births.

E.A. WRIGLEY, R.S. DAVIES
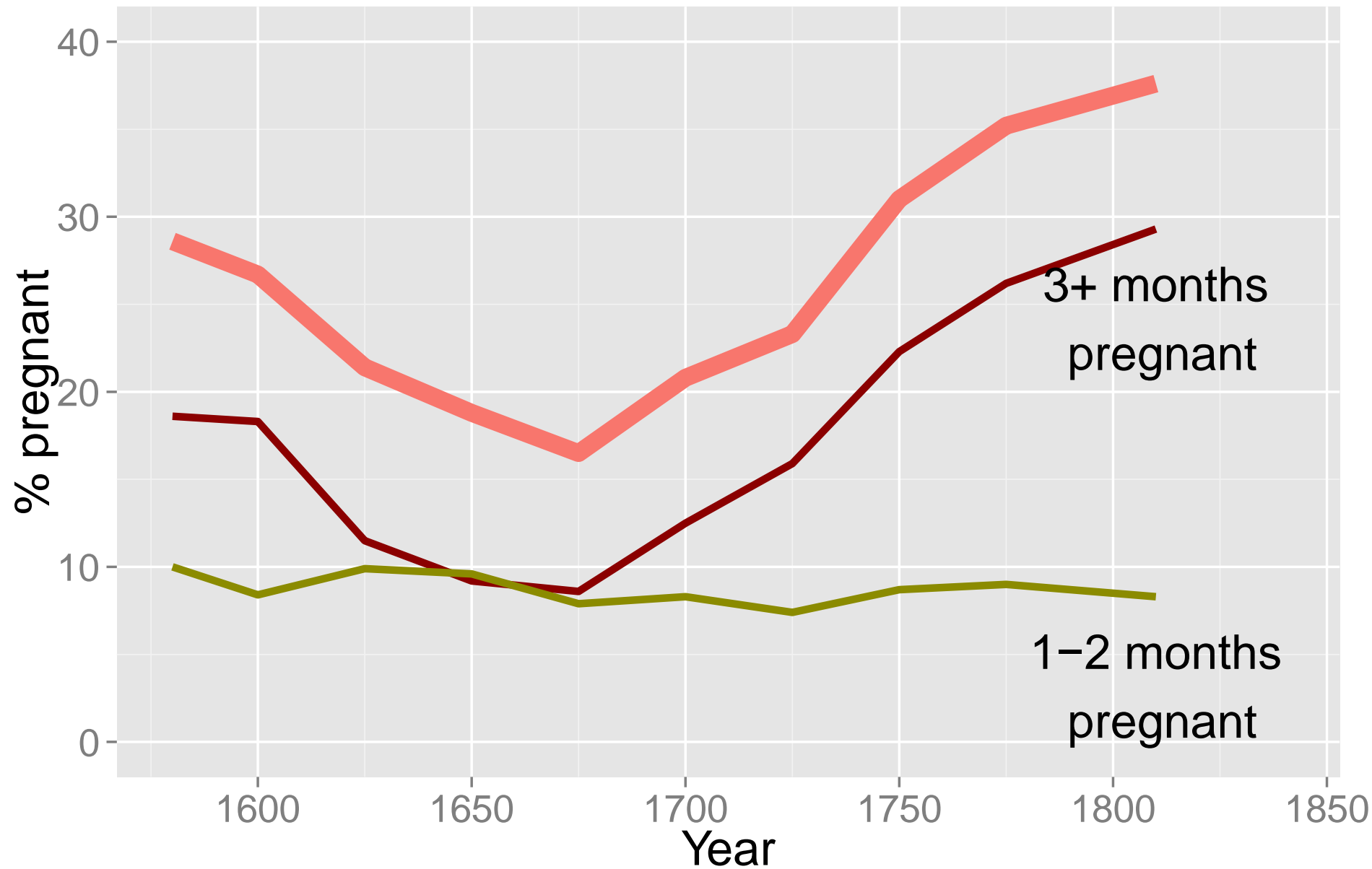J.E. OEPPEN AND R.S. SCHOFIELD
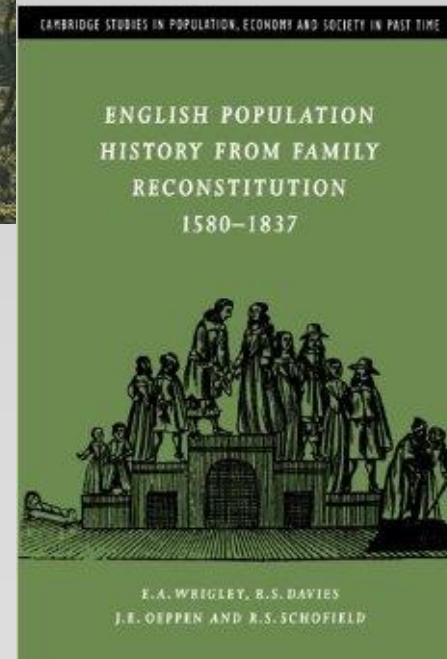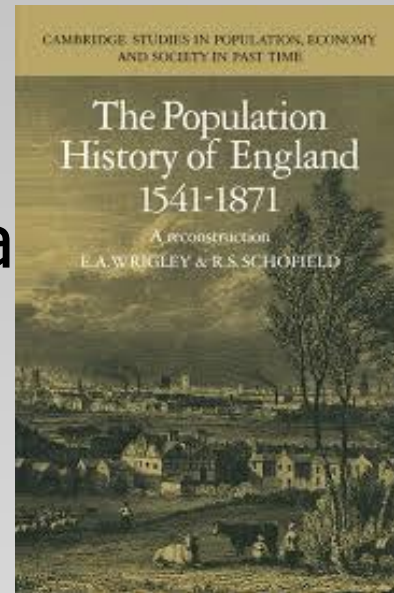
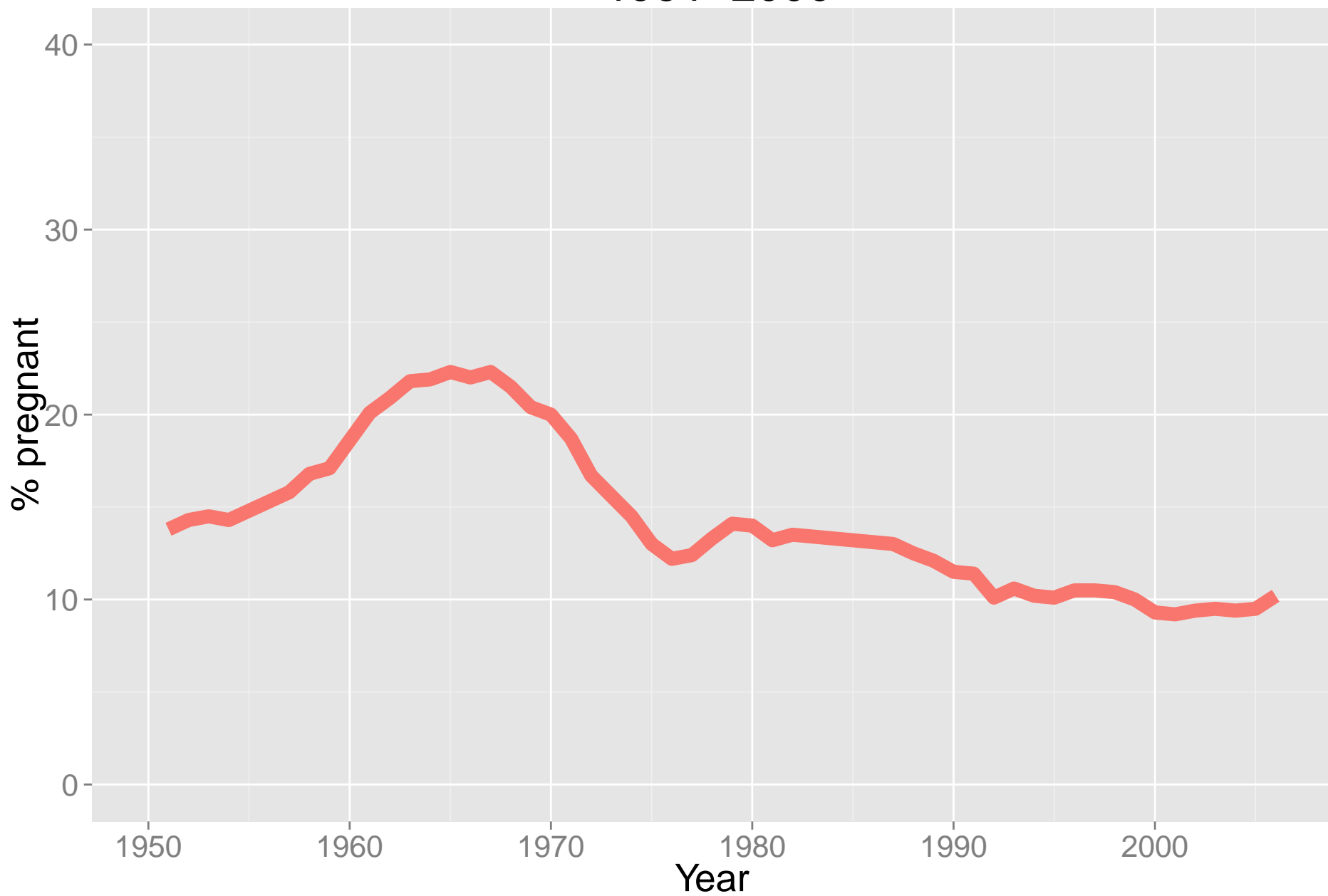# What proportion of brides have been pregnant when they got married?

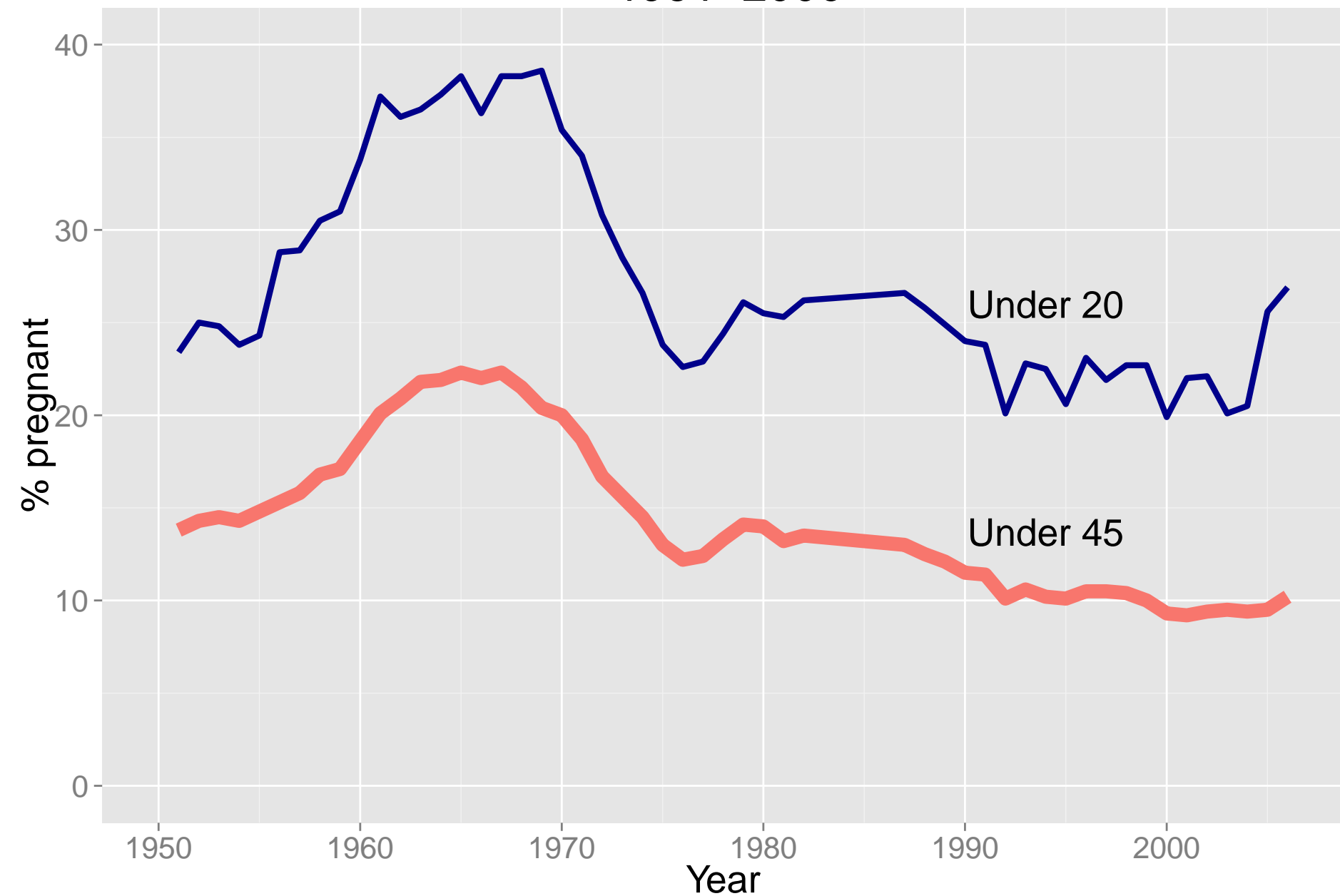# % brides pregnant when married:
1580−1820
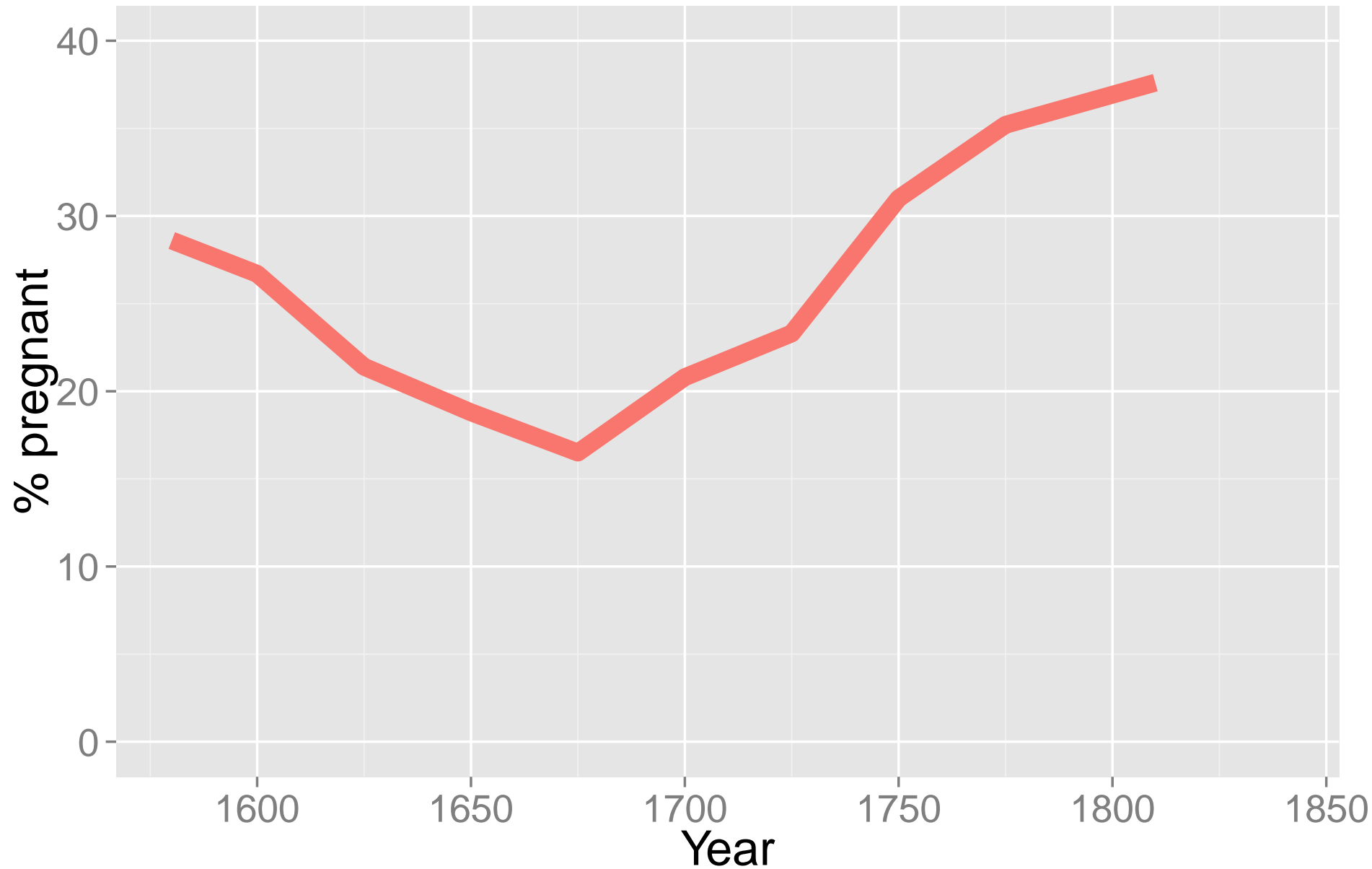
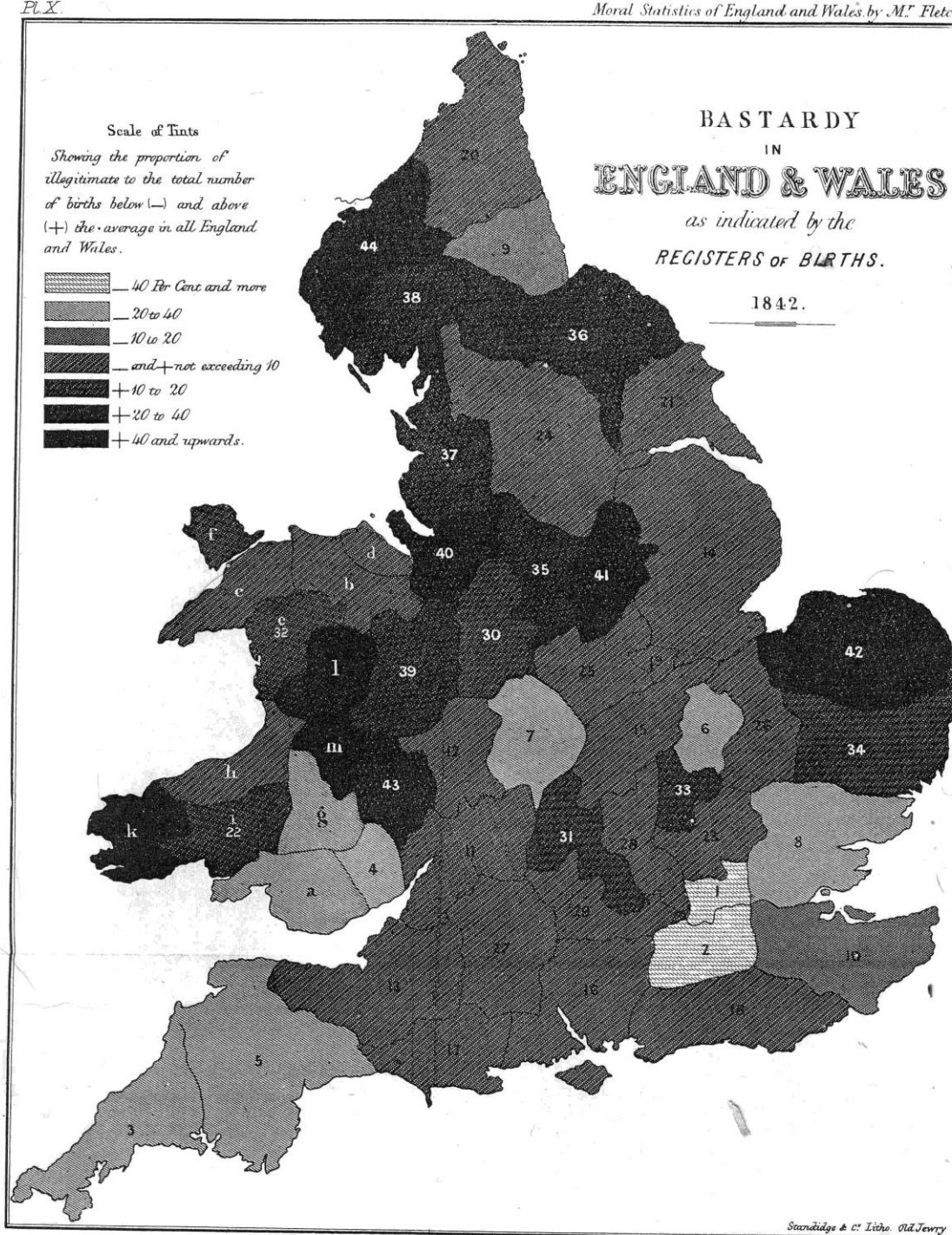% brides pregnant when married:
1580−1820

% brides pregnant when first married: 1951−2006

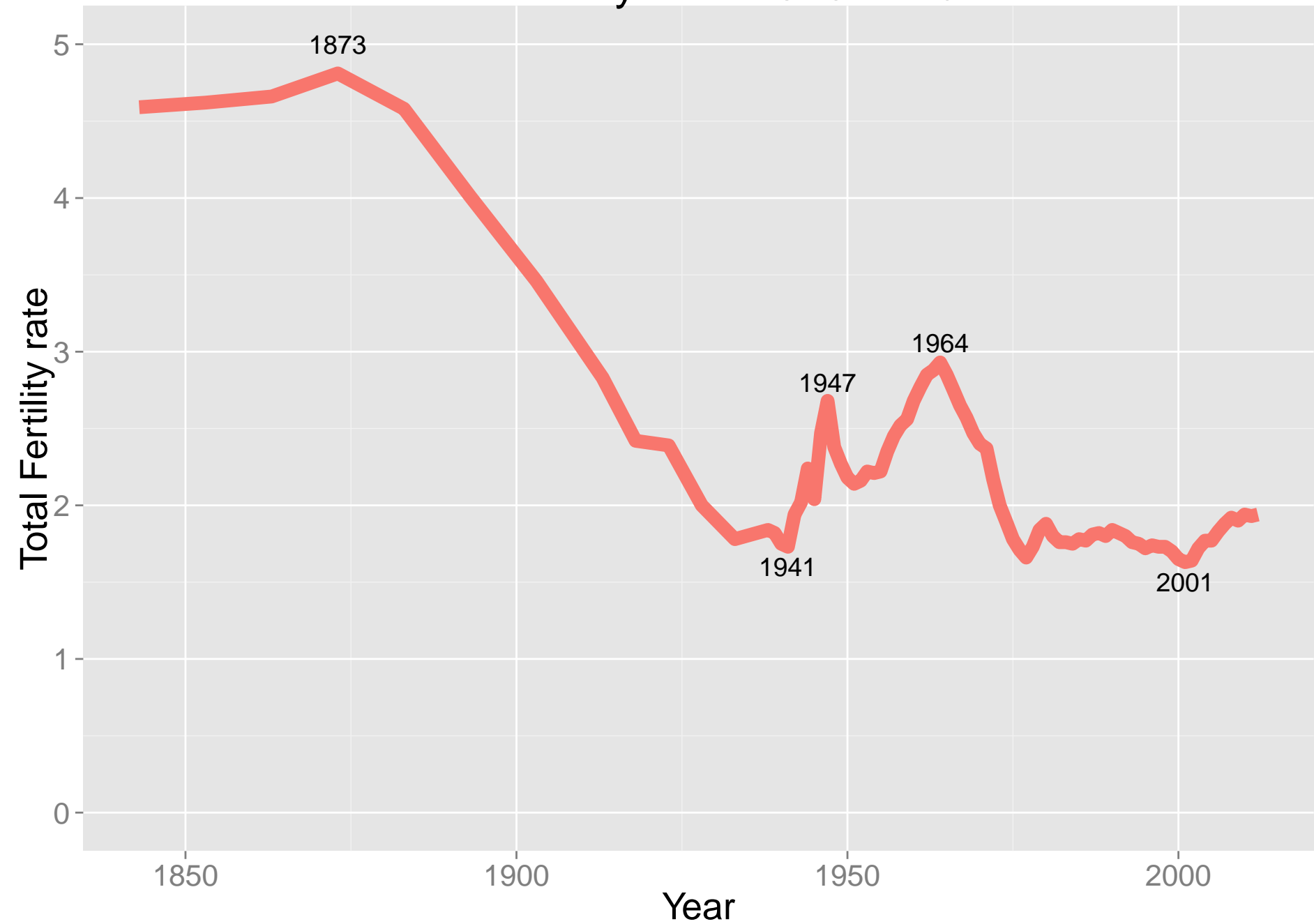% brides pregnant when first married:
1951−2006

The start of civil registrations in 1837...

Pl. X.   Moral Statistics of England and Wales by Mr Fletc

Scale of Tints

Showing the proportion of
illegitimate to the total number
of births below (—) and above
(+) the average in all England
and Wales.

- ____ 40 Per Cent and more
- ____ 20 to 40
- ____ 10 to 20
- ____ and + not exceeding 10
- + 10 to 20
- + 20 to 40
- + 40 and upwards.

BASTARDY
IN
ENGLAND & WALES
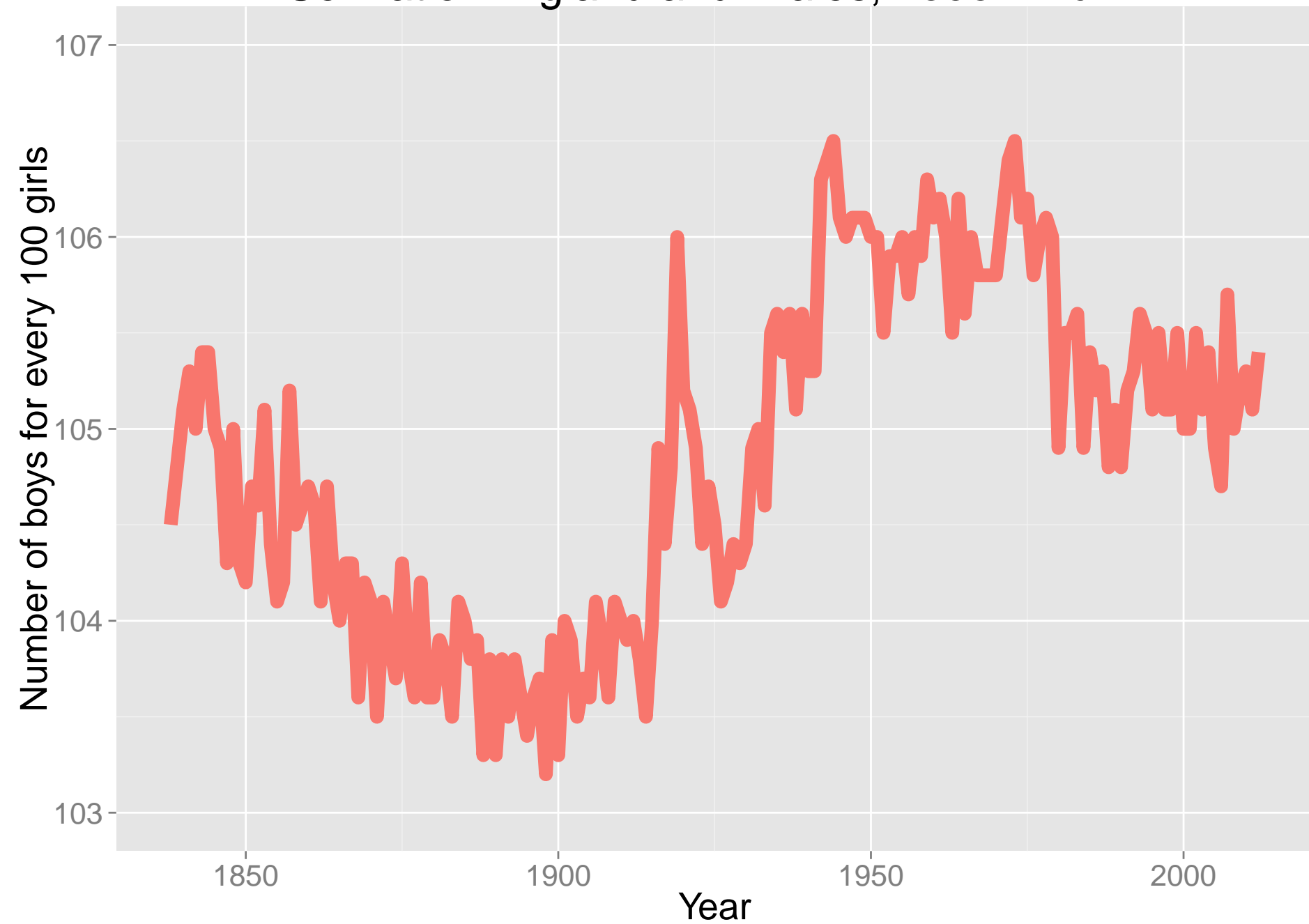as indicated by the
REGISTERS OF BIRTHS.
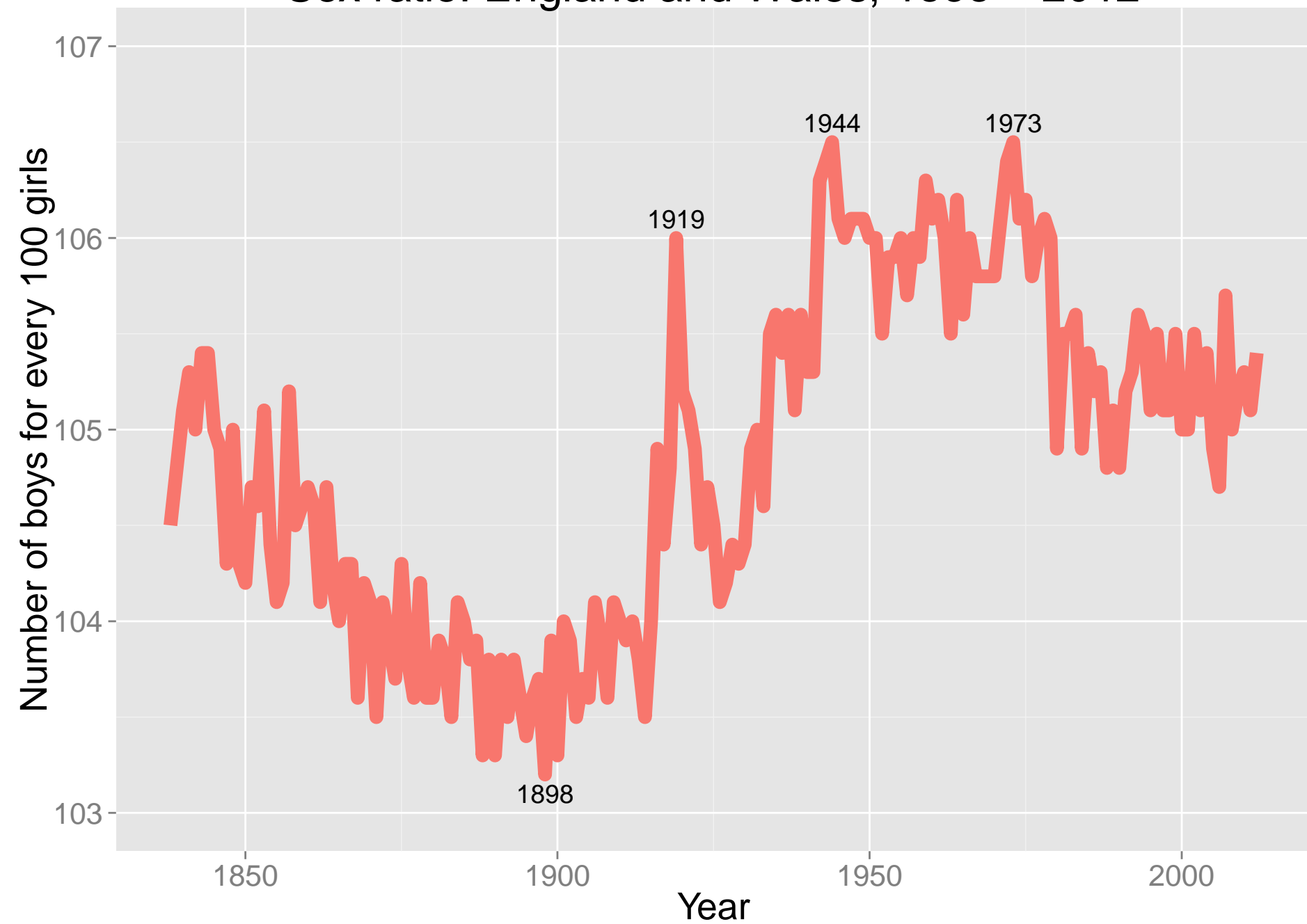1842.

Total Fertility rate: 1843 to 2012

How many boys are born for every 100 girls?
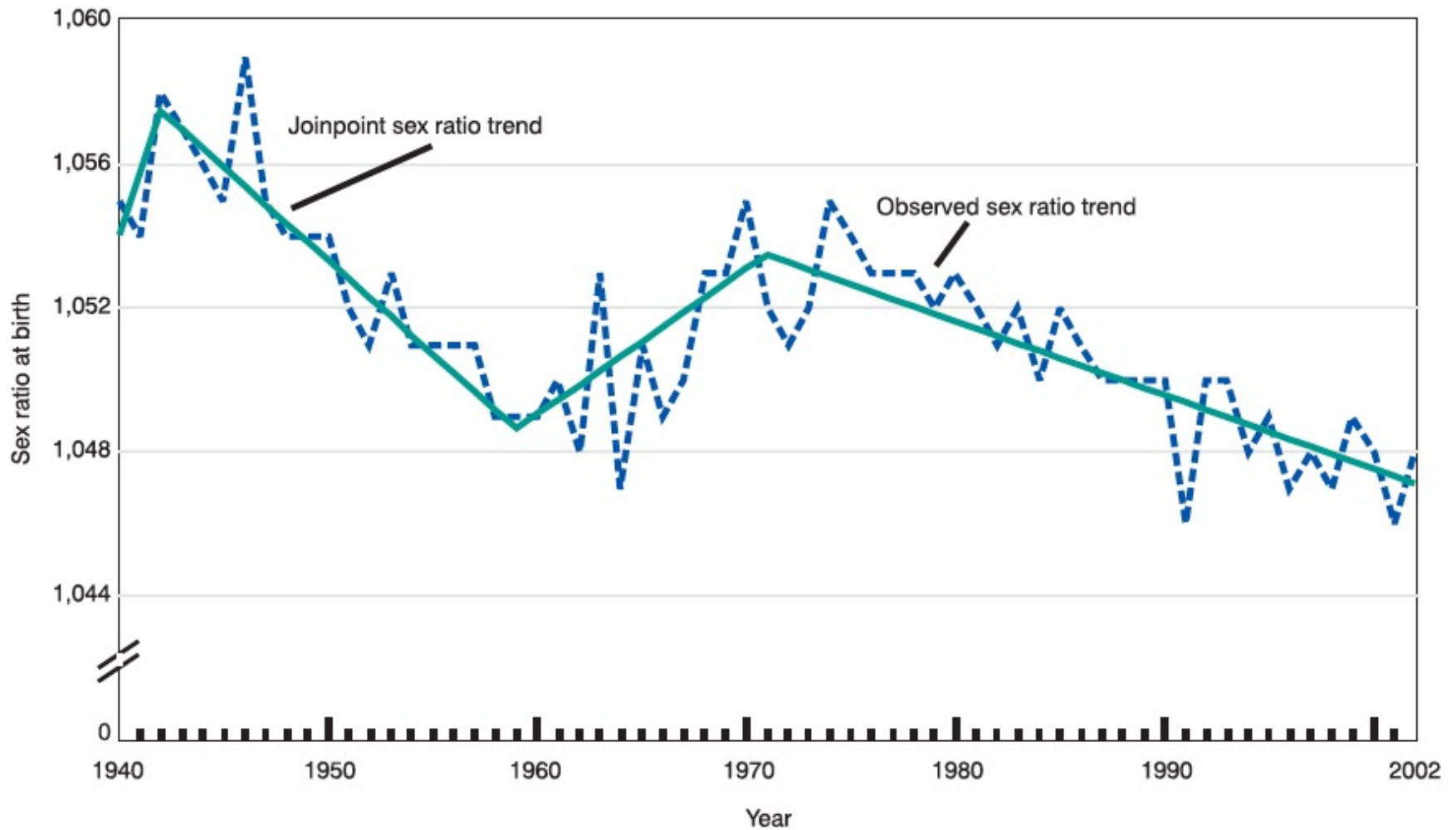
Sex ratio: England and Wales, 1838 − 2012

Sex ratio: England and Wales, 1838 − 2012

Sex- ratio at birth in US

Figure 1. Sex ratio at birth and joinpoint segments, 1940–2002

NOTES: Sex ratio at birth is the number of male births divided by the number of female births multiplied by 1,000. For an explanation of joinpoint see "Technical Notes" and reference 7.

Highest in 1946, second peak in early 1970s

The variations of human sex ratio at birth with time of conception within the cycle, coital rate around the time of conception, duration of time taken to achieve conception, and duration of gestation: A synthesis
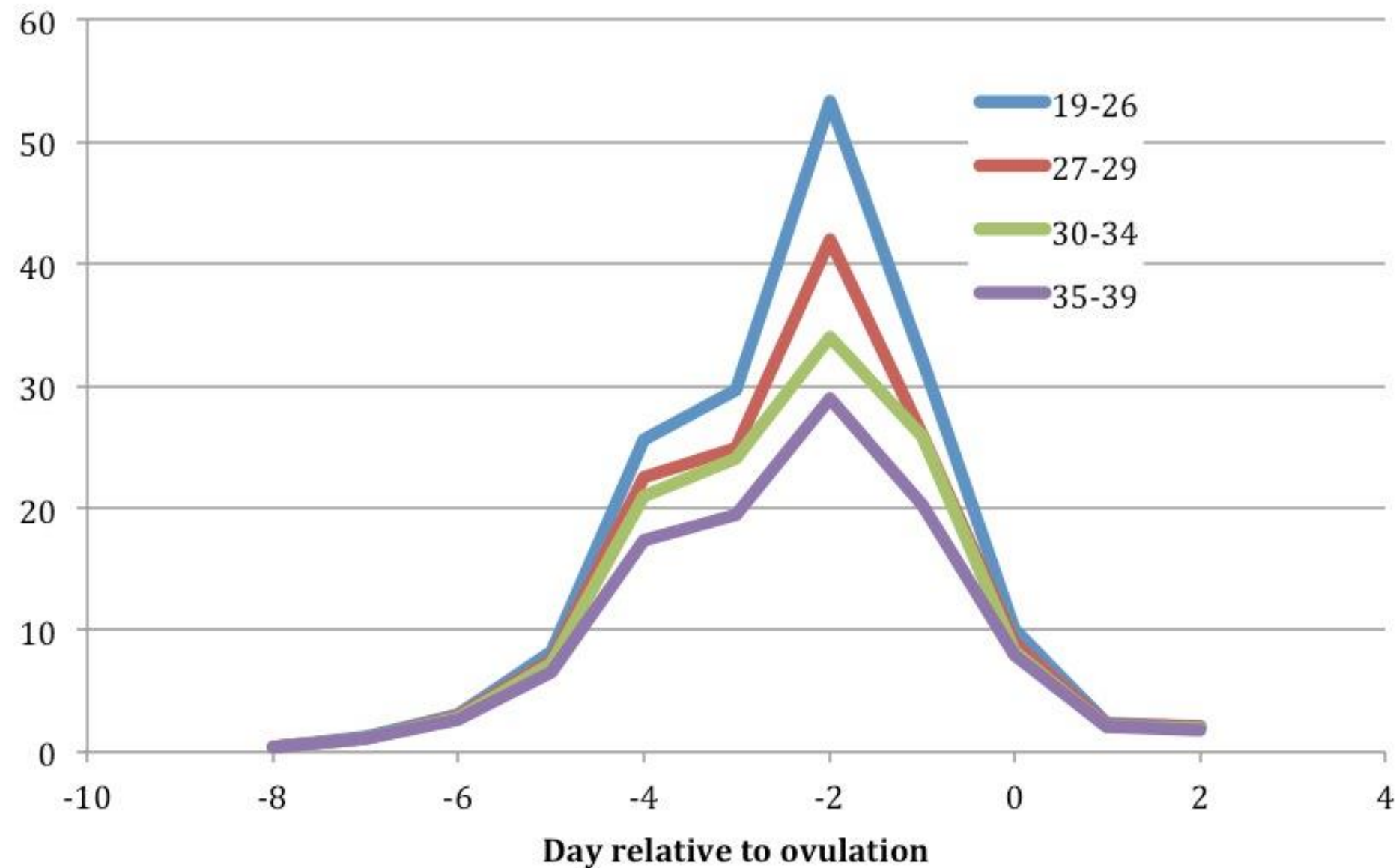
William H. James

The Galton Laboratory, University College London, Wolfson House, 4 Stephenson Way, London NW1 2HE, UK

More boys if

- Higher 'coital rate'
- Early conceptions
- Conception not at time of peak-fecundity

Average % chance of conception

Sex ratio: England and Wales, 1838 − 2012