Survey design, coverage and methodology

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Longitudinal Studies

Observations on the same set of population elements at different points in time – enabling them to be compared statistically to give an understanding of processes at the individual level

- **Panel studies**
  - *Rovolving* - data on same sample for limited period followed by recruitment of new sample
  - *Household* - data on the same sample at regular intervals

- **Cohort studies:**
  - *Birth cohorts* - data on a sample born in a particular period
  - *Other cohorts* - data on a sample sharing some characteristic

- **Retrospective studies** - recall data on life histories

- **Linked administrative records** - to create longitudinal records
Longitudinal Studies - Examples

Panel studies
- US Panel Study of Income Dynamics (PSID)
- German Socio-economic Panel (GSOEP)
- European Community Household Panel (ECHP)
- Panel Study of Belgian Households (PSBH)
- British Household Panel Survey (BHPS) ↦ UKHLS/Understanding Society

Cohort studies
- National Child Development Study (NCDS)
- 1970 British Cohort Study (BCS70)
- Millennium Cohort Study (MCS)
- Growing-up in Scotland (GUS)
- Growing Up in Ireland (GUI)
- Youth Cohort Study (YCS)
- Longitudinal Study of Young People in England (LSYPE)
- US National Longitudinal Survey of Youth (NLSY)
- English Longitudinal Study of Ageing (ELSA)

Retrospective studies
- UK Family and Working Lives Survey from 1994 (FWLS)
- German Life History Studies (GLHS).

Linked administrative records
- Scandinavian countries link tax and social welfare records for research
- UK Census Longitudinal Study (ONS-LS) links censuses and vital registration data for ~1% UK
- Scottish Longitudinal Study (SLS) links census and vital registration data for ~5.3% sample in Scotland
- Northern Ireland Longitudinal Study (NILS) links census and vital registration data for ~28% in N Ireland
Goals of Longitudinal Study

- Provide a better representation of social processes and individual experiences
- Enable us to get closer to understanding causal effects
- Allow us to distinguish between age effects and cohort effects
- Facilitate a focus on individual experiences rather than just aggregate changes
- Allow investigation of duration effects *ie: how time itself influences some processes and outcomes*
- Assessing inter-generational continuities and discontinuities in circumstances, behaviour and attributes
Age, period and cohort effects

- **Age effects** - the consequences of growing older (*eg*: state of physiology, exposure to social forces)

- **Period effects** - the consequences of influences that vary through time (*eg*: state of the economy; peace/war; technological developments)

- **Cohort effects** - the consequences of being born at different times (*eg*: completion of schooling; marriage)

*NB:* Estimation of age-period-cohort effects is always provisional since age, period and year are always confounded
Longitudinal v Cross-sectional data

Advantages of longitudinal data

• Better insight into causality
• Can track processes
• Can relate prior intentions to observed behaviour
• Observe trajectories (e.g.: health, poverty, employment/unemployment), true flows rather than net change)

Disadvantages

• More expensive & difficult to carry out (and analyse)
• Attrition
• Less representative than contemporary samples; poorer population estimates

following lives from birth and through the adult years
Hypothetical life history

- Parents’ social class
- Parental interest in school work
- Free school meals
- Maths and reading tests
- Teachers’ assessment of child’s behaviour
- Parental divorce
- Gets married
- Exam results
- 1st Child 1984
- 2nd Child 1987
- Age 7
- Age 11
- Age 16
- Age 23
- Age 33
- Age 42
- Age 46
- Job 1
- Job 2
- Job 3
- Voting behaviour
- Savings
- Training and skills
- Working hours preferences
- Psychological well being
- Domestic division of labour
- Union membership
- Job 3
- Job 2
- Job 1

following lives from birth and through the adult years

www.cls.ioe.ac.uk
NCDS/BCS70 Design Principles

- Continuity & comparability
- Age, cohort & period effects
- Spatial effects
- Consultation
- Harmonisation
- Life course perspective

- Holistic
- Transitions & pathways
- Interconnectedness
- Linked lives
Data Specification Parameters

- Identify key variables representing different elements of life course in and across life domains.

- Find the optimum way to operationalise these via survey questions and other measures.
NCDS Follow-ups & Information Sources

A continuing, multi-disciplinary longitudinal study of everyone in Great Britain, born in one week in 1958. Details collected on health, behaviour, family, education, employment and attitudes.

<table>
<thead>
<tr>
<th>Year</th>
<th>Event/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1958</td>
<td>Birth</td>
</tr>
<tr>
<td>1965</td>
<td>Age 7</td>
</tr>
<tr>
<td>1969</td>
<td>Age 11</td>
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<td>1974</td>
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<td>1981</td>
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<td>Age 45</td>
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<tr>
<td>2004</td>
<td>Age 46</td>
</tr>
<tr>
<td>2008</td>
<td>Age 50</td>
</tr>
</tbody>
</table>

- **mother**
- **parents**
- **school**
- **tests**
- **medical**
- **subject**
- **census**
- **1978 - collection of examination entry and performance details**

- **1995 - basic skills survey (10% sample)**
- **Biomedical Survey:** includes measurements of near, distance and stereo vision; hearing; lung function; blood pressure and pulse; height and weight; waist and hip; mental health interview; sampling of blood and saliva.
- **Mother and Child Survey - a sample of 1 in 3 cohort members**
- **Telephone survey**
- **2008 - Qualitative survey on social participation and identity**
- **tests**
- **subject**
- **subject**
- **subject**
- **economic records**
- **health records**

In 1965, 1969 and 1974 the cohort was augmented by the addition of immigrants to Britain who were born in the target week in 1958.

KEY: Additional surveys | Further information | Achieved sample of cohort members (at least one survey instrument partially completed) | Data sources

Following lives from birth and through the adult years.

www.cls.ioe.ac.uk
# Changing distribution by country

## NCDS

<table>
<thead>
<tr>
<th>Country</th>
<th>PM5</th>
<th>NCDS1</th>
<th>NCDS2</th>
<th>NCDS3</th>
<th>NCDS4</th>
<th>NCDS5</th>
<th>NCDS6</th>
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<td>84.4%</td>
<td>84.0%</td>
<td>84.9%</td>
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<td>85.0%</td>
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<td>8.9%</td>
<td>9.5%</td>
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<tr>
<td>Wales</td>
<td>914</td>
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<td>633</td>
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### BCS70 Follow-ups & information sources

**a continuing, multi-disciplinary longitudinal study of everyone in Great Britain, born in one week in 1970**

details collected on health, behaviour, family, education, employment and attitudes

<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
<th>Participants</th>
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<tr>
<td>1970 birth</td>
<td>mother, tests, medical</td>
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<td>1975 age 5</td>
<td>parents, medical</td>
<td>13,071</td>
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<tr>
<td>1980 age 10</td>
<td>parents, school, tests, medical</td>
<td>14,874</td>
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<tr>
<td>1986 age 16</td>
<td>parents, school, tests, medical</td>
<td>11,621</td>
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<tr>
<td>1996 age 26</td>
<td>Postal survey based on limited tracing</td>
<td>9,003</td>
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<tr>
<td>2000 age 30</td>
<td>subject, children</td>
<td>11,261</td>
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<tr>
<td>2004 age 34</td>
<td>subject</td>
<td>9,656</td>
</tr>
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<td>2008 age 38</td>
<td>Telephone survey</td>
<td>8,875</td>
</tr>
</tbody>
</table>

In 1975 and 1980 the cohort was augmented by the addition of immigrants to Britain who were born in the target week in 1970.

**KEY:**
- Additional surveys
- Further information
- Achieved sample of cohort members (at least one survey instrument partially completed)
- Data sources

[www.cls.ioe.ac.uk](http://www.cls.ioe.ac.uk)
## BCS70

<table>
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<th></th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>16</th>
<th>26</th>
<th>30</th>
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<tbody>
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<td>86.6%</td>
<td>85.9%</td>
<td>85.1%</td>
<td>85.0%</td>
</tr>
<tr>
<td><strong>Scotland</strong></td>
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<td>1024</td>
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<td>9.7%</td>
<td>8.9%</td>
<td>9.1%</td>
<td>9.4%</td>
<td>9.5%</td>
</tr>
<tr>
<td><strong>Wales</strong></td>
<td>879</td>
<td>748</td>
<td>805</td>
<td>722</td>
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<td>555</td>
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<td><strong>GB</strong></td>
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<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Data coverage - birth $\Rightarrow$ adulthood

- What type of person is the child becoming?
- What type of adult has the cohort member become and how did they get there?
- Continuity & comparability

<table>
<thead>
<tr>
<th>Birth</th>
<th>School years</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family</td>
<td>Family</td>
<td>Family (partners/children)</td>
</tr>
<tr>
<td>Parental employment</td>
<td>Parental employment</td>
<td>Employment</td>
</tr>
<tr>
<td>Obstetric history</td>
<td>Financial circumstances</td>
<td>Income</td>
</tr>
<tr>
<td>Smoking in pregnancy</td>
<td>Housing</td>
<td>Housing</td>
</tr>
<tr>
<td>Pregnancy (problems/antenatal care)</td>
<td>Health</td>
<td>Health</td>
</tr>
<tr>
<td>Labour (length, pain relief, problems)</td>
<td>Behaviour</td>
<td>Health-related behaviour</td>
</tr>
<tr>
<td>Birth (problems, sex, weight, length, etc)</td>
<td>School</td>
<td>Courses/qualifications</td>
</tr>
<tr>
<td></td>
<td>Views/expectations</td>
<td>Basic skills</td>
</tr>
<tr>
<td></td>
<td>Attainment</td>
<td>Cognitive ability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NCDS</th>
<th>School years</th>
<th>Adult</th>
</tr>
</thead>
<tbody>
<tr>
<td>7, 11, 16</td>
<td>23, 33, 42, 46, 50</td>
<td></td>
</tr>
<tr>
<td>5, 10, 16</td>
<td>26, 30, 34, 38</td>
<td></td>
</tr>
</tbody>
</table>

following lives from birth and through the adult years
Data collection

Variety of methods used:

- Face to face interviews (Paper/CAPI)
- Proxy interviews
- Telephone Interviews
- Self completions (Paper/CASI)
- Assessments
- Medical measurements
BCS70 – 2012: Design

- 60 minute face-to-face interview
  - CASI self completion
  - Data linkage consents
  - Vocabulary assessment
  - Updating contact details

- 16 page paper self-completion questionnaire
BCS70 2012: Core interview

- Relationship history
- Children
- Other household members
- Family – absent / older children, caring for parents, contact with family and friends
- Housing – history, current accommodation, housing costs, housing equity
- Employment – history, current job, job security, help provided by parents/others to get a job
- Income – from all sources
- Qualification history / work-related training, university attended, subject of degree, details of school at 16
- Health – Long-standing illnesses, smoking, drinking, exercise, height, weight.
BCS70 – 2012: CASI

- Identity – Social class, sexuality
- Menopause / gynaecological problems
- Fertility intentions / childlessness
- Use of infertility treatments
- Domestic chores
- Mental health problems
- Job satisfaction / Work-life balance
BCS70 – 2012: Paper self-completion questionnaire

- Leisure activities
- Sports
- Values/attitudes
- Voting / political engagement
- Cultural consumption – TV/Books/Newspapers
- Use of computers/the web
- Religion – belief in God / life after death
- Diet – breakfast, ready-meals, convenience foods, take-aways, home-cooked meals
- Well being – WEMWBS, Malaise
- Problematic drinking – AUDIT
- Sleep
## BCS70 – 2012: Vocabulary Task

Shortened version of test administered at 16 with just 20 items rather than 75

<table>
<thead>
<tr>
<th>1. QUICK</th>
<th>always □</th>
<th>best □</th>
<th>neat □</th>
<th>sick □</th>
<th>fast □</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. TIDINGS</td>
<td>steps □</td>
<td>reason □</td>
<td>jetty □</td>
<td>mountains □</td>
<td>news □</td>
</tr>
<tr>
<td>3. CONCEAL</td>
<td>advise □</td>
<td>hide □</td>
<td>gather □</td>
<td>freeze □</td>
<td>conciliate □</td>
</tr>
<tr>
<td>4. UNIQUE</td>
<td>several □</td>
<td>matchless □</td>
<td>simple □</td>
<td>ancient □</td>
<td>absurd □</td>
</tr>
<tr>
<td>5. DUBIOUS</td>
<td>tawny □</td>
<td>obstinate □</td>
<td>gloomy □</td>
<td>muddy □</td>
<td>doubtful □</td>
</tr>
<tr>
<td>6. TRIVIAL</td>
<td>trefoil □</td>
<td>alluvial □</td>
<td>trifling □</td>
<td>eccentric □</td>
<td>tawdry □</td>
</tr>
<tr>
<td>7. ORTHODOX</td>
<td>conventional □</td>
<td>angular □</td>
<td>bohemian □</td>
<td>liturgical □</td>
<td>amazing □</td>
</tr>
<tr>
<td>8. PLAUSIBLE</td>
<td>aggressive □</td>
<td>humane □</td>
<td>shallow □</td>
<td>wide □</td>
<td>credible □</td>
</tr>
<tr>
<td>9. SIGNIFY</td>
<td>deter □</td>
<td>subscribe □</td>
<td>avail □</td>
<td>submit □</td>
<td>denote □</td>
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<tr>
<td>10. CONSPICUOUS</td>
<td>plotting □</td>
<td>gargantuan □</td>
<td>suspicious □</td>
<td>prominent □</td>
<td>deserved □</td>
</tr>
<tr>
<td>11. PRECEDENCE</td>
<td>guess □</td>
<td>priority □</td>
<td>cleverness □</td>
<td>sympathy □</td>
<td>regalia □</td>
</tr>
<tr>
<td>12. IMPlicate</td>
<td>ingest □</td>
<td>involve □</td>
<td>produce □</td>
<td>malformed □</td>
<td>deviate □</td>
</tr>
<tr>
<td>13. INDIFFERENT</td>
<td>similar □</td>
<td>disillusioned □</td>
<td>inequitable □</td>
<td>identical □</td>
<td>uninterested □</td>
</tr>
<tr>
<td>14. CREDULOUS</td>
<td>apt □</td>
<td>genuine □</td>
<td>opposed □</td>
<td>gullible □</td>
<td>trustworthy □</td>
</tr>
<tr>
<td>15. SEETH</td>
<td>soften □</td>
<td>mow □</td>
<td>boil □</td>
<td>surround □</td>
<td>perceive □</td>
</tr>
<tr>
<td>16. OBSOLETE</td>
<td>execrable □</td>
<td>secret □</td>
<td>innocuous □</td>
<td>rigid □</td>
<td>redundant □</td>
</tr>
<tr>
<td>17. ERUDITE</td>
<td>learned □</td>
<td>spasmodic □</td>
<td>superfluous □</td>
<td>pathetic □</td>
<td>spurious □</td>
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<tr>
<td>18. PROSAIC</td>
<td>commonplace □</td>
<td>flowery □</td>
<td>laudable □</td>
<td>poetical □</td>
<td>spacious □</td>
</tr>
<tr>
<td>19. ASCETIC</td>
<td>artistic □</td>
<td>dissolve □</td>
<td>austere □</td>
<td>antipathetic □</td>
<td>charlatan □</td>
</tr>
<tr>
<td>20. PUSILLANIMOUS</td>
<td>loud □</td>
<td>living □</td>
<td>timid □</td>
<td>averse □</td>
<td>correct □</td>
</tr>
</tbody>
</table>
BCS70 – 2012: Data linkage

- Cohort member AND partner
- **HMRC** – employment related records: earnings, tax credits and occupational pensions (since 1998) and National Insurance Contributions since the early 1970s
- **DWP** - benefit claims and any periods people spend on employment programs
- **NHS** – for patients accessing the health services, records may include:
  - Admissions or attendances at hospital (including dates of admission, discharge or attendance, diagnoses received, treatments given, surgical procedures)
  - Visits to your family doctor or other health professional e.g. midwife
  - Records of specific conditions such as cancer or diabetes
  - Prescriptions given
NCDS – 2013: Design

- Data collection will involve a sequential mixed mode approach:
  - Cohort members will initially be invited to complete a web survey
  - Those not responding will be contacted by telephone and invited to participate via telephone.
- Completing the survey will take around 25 minutes.
- The age 55 survey will be the first time that web-based data collection has been used on any of the CLS birth cohort studies.
NCDS – 2013: Content of web/telephone survey

- **Relationship history** - Information about all co-habiting relationships since previous interview up to and including current partner
- **Children** - Information about all children CM considers themselves a parent
- **Other household members** - Information about all other household members
- **Housing** – Details of current accommodation and housing history
- **Employment** – Details of periods of economic activity and any current job
- **Partner’s employment** – Details of economic status
- **Income** – from all sources
- **Cognitive assessment**
- **Lifelong learning** – Details of qualification achieved and history
- **Health** – Self-rated general health; difficulty performing day-to-day activities because of physical health/emotional/personal problems; bodily pain; long-lasting health problems
Constraints

- Funding
- Respondent burden
- Reconciling different interests
Methodological Issues

- Measurement: fading relevance, validity & reliability
- Attrition & bias
- Question level non-response
Keeping in touch with cohort members

- Birthday card with summary of results sent every year
- More detailed summaries of results sent periodically (e.g. magazine ‘Changing Britain, Changing Lives’)
- Dedicated website with information about the studies and research based on the data
- Tracing team continually updates address database held on secure network at CLS
- Additional tracing efforts during fieldwork to find cohort members who have changed address
- Attrition is a common problem for all longitudinal studies – CLS constantly reviewing options
Feedback leaflets (examples)

1958–2008
50 years of the National Child Development Study

1970–2010
40 years of the British Cohort Study

1970s

1980s

1990s

2000s
Bias – Assessing the nature and extent

• Response rates are generally satisfactory for NCDS and BCS70 surveys, but any less than perfect response rate suggests the possibility of bias in the responding samples. Are those who participated in the survey representative of the original cohort?

• This issue may be explored in two ways:

  **Method 1** - exploits a possibility which is available only for longitudinal studies - comparing participants to any survey with the data obtained for participants at an earlier survey(s)

  **Method 2** - is available to most surveys, particularly those which set out to provide information on a sample which is in some sense nationally representative, comparing distributions on key variables with those available from other national censuses and/or surveys
Bias – Comparing achieved samples to earlier surveys

<table>
<thead>
<tr>
<th></th>
<th>Age at earlier survey</th>
<th>Target % - measured at earlier survey</th>
<th>Achieved % - measured at earlier survey</th>
<th>% Bias</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NCDS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male respondents</td>
<td>All</td>
<td>51.2</td>
<td>49.2</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Child’s ethnic group is Afro-Caribbean</td>
<td>16</td>
<td>1.1</td>
<td>0.6</td>
</tr>
<tr>
<td>Social Class</td>
<td>Father’s Social Class – Manual</td>
<td>7</td>
<td>66.5</td>
<td>65.0</td>
</tr>
<tr>
<td>Reading</td>
<td>Low Reading score</td>
<td>11</td>
<td>20.0</td>
<td>16.9</td>
</tr>
<tr>
<td>Poverty</td>
<td>Child receives free school meals</td>
<td>16</td>
<td>10.2</td>
<td>8.6</td>
</tr>
<tr>
<td>Tenure</td>
<td>Tenure - Private rented</td>
<td>11</td>
<td>7.7</td>
<td>7.0</td>
</tr>
<tr>
<td>BCS70</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male respondents</td>
<td>All</td>
<td>51.1</td>
<td>45.6</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Child’s ethnic group - West Indian</td>
<td>5</td>
<td>1.0</td>
<td>0.7</td>
</tr>
<tr>
<td>Social class</td>
<td>Father’s social class – Manual</td>
<td>5</td>
<td>63.1</td>
<td>60.2</td>
</tr>
<tr>
<td>Reading</td>
<td>Great difficulty with reading</td>
<td>10</td>
<td>3.1</td>
<td>2.4</td>
</tr>
<tr>
<td>Poverty</td>
<td>Family receives Supplementary Benefit</td>
<td>16</td>
<td>11.2</td>
<td>9.6</td>
</tr>
<tr>
<td>Tenure</td>
<td>Accommodation rented privately</td>
<td>10</td>
<td>3.0</td>
<td>2.7</td>
</tr>
</tbody>
</table>

Notes:

a: New survey:
- NCDS=Fifth follow-up at age 33 years
- BCS70=Sample survey at age 26 years

b: % Bias = (Achieved % - Target %) / Target % x 100

- Negative values indicate under-representation
- Values can be large when prevalence is low
### Bias - Comparing key variables to other sources

#### 1. Marital Status (%)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>13</td>
<td>23</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>Married</td>
<td>72</td>
<td>60</td>
<td>77</td>
<td>71</td>
</tr>
<tr>
<td>Cohabiting</td>
<td>9</td>
<td>11</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Divorced</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>Widowed</td>
<td>&lt;1</td>
<td>0</td>
<td>1</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

#### 2. Economic Activity (%)

<table>
<thead>
<tr>
<th>Gender</th>
<th>GHS 1991 (Ages 25-34)</th>
<th>NCDS5 (Age 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MEN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>87</td>
<td>90</td>
</tr>
<tr>
<td>Unemployed</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>Inactive</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>WOMEN</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working</td>
<td>64</td>
<td>68</td>
</tr>
<tr>
<td>Unemployed</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Inactive</td>
<td>31</td>
<td>30</td>
</tr>
</tbody>
</table>

#### 3. Gross Weekly Pay (£)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MEN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>253</td>
<td>-</td>
<td>285</td>
</tr>
<tr>
<td>Mean</td>
<td>-</td>
<td>341</td>
<td>320</td>
</tr>
<tr>
<td>WOMEN</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>179</td>
<td>-</td>
<td>231</td>
</tr>
<tr>
<td>Mean</td>
<td>-</td>
<td>252</td>
<td>257</td>
</tr>
</tbody>
</table>

#### 4. Tenure (%)

<table>
<thead>
<tr>
<th>Tenure Type</th>
<th>GHS 1991 (Ages 30-44)</th>
<th>NCDS5 (Age 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own/Buying</td>
<td>75</td>
<td>79</td>
</tr>
<tr>
<td>Renting from Local Authority, New Town, Housing association</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Renting privately</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

#### 5. Ethnic Group (%)

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>GHS 1989-91 (Ages 25-44)</th>
<th>NCDS5 (Age 33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>94</td>
<td>96</td>
</tr>
<tr>
<td>Indian</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Pakistani/Bangladeshi</td>
<td>1</td>
<td>&lt;1</td>
</tr>
<tr>
<td>Black/Caribbean</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>&lt;1</td>
</tr>
</tbody>
</table>

Note: GHS = General Household Survey; NES = New Earnings Survey
Differential response

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>NCDS1</th>
<th>NCDS2</th>
<th>NCDS3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parental Interview</td>
<td>14,746</td>
<td>13,879</td>
<td>11,691</td>
</tr>
<tr>
<td>Medical Questionnaire</td>
<td>14,398</td>
<td>13,207</td>
<td>11,675</td>
</tr>
<tr>
<td>Educational Questionnaire</td>
<td>15,414</td>
<td>14,205</td>
<td>12,762</td>
</tr>
<tr>
<td>Any of above</td>
<td>15,414</td>
<td>15,303</td>
<td>14,761</td>
</tr>
</tbody>
</table>
Changes in populations and samples


Covers:

1. Defining the populations.
3. Patterns of response.
4. Domain response.

For additional reports/publications – see: [www.cls.ioe.ac.uk/publications](http://www.cls.ioe.ac.uk/publications)
Longitudinal and cross-sectional samples

Longitudinal target sample
All children born (alive or dead) in GB in the reference week until they die or permanently emigrate from GB

Cross-sectional target sample
All children born anywhere in the reference week living in GB at the time of each sweep

### NCDS

<table>
<thead>
<tr>
<th>SWEEP</th>
<th>PMS</th>
<th>NCDS1</th>
<th>NCDS2</th>
<th>NCDS3</th>
<th>NCDS4</th>
<th>NCDS5</th>
<th>NCDS6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitudinal</td>
<td>17,415</td>
<td>15,051</td>
<td>14,757</td>
<td>13,917</td>
<td>12,044</td>
<td>10,986</td>
<td>10,853</td>
</tr>
<tr>
<td>Cross-sectional</td>
<td>0</td>
<td>517</td>
<td>746</td>
<td>844</td>
<td>493</td>
<td>421</td>
<td>566</td>
</tr>
<tr>
<td>Total</td>
<td>17,415</td>
<td>15,568</td>
<td>15,503</td>
<td>14,761</td>
<td>12,537</td>
<td>11,407</td>
<td>11,419</td>
</tr>
</tbody>
</table>

### BCS70

<table>
<thead>
<tr>
<th>SWEEP</th>
<th>Birth</th>
<th>Five</th>
<th>Ten</th>
<th>Sixteen</th>
<th>Twenty-six</th>
<th>Thirty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Longitudinal</td>
<td>16,571</td>
<td>12,979</td>
<td>14,349</td>
<td>11,206</td>
<td>8,654</td>
<td>10,833</td>
</tr>
<tr>
<td>Cross-sectional</td>
<td>0</td>
<td>156</td>
<td>526</td>
<td>422</td>
<td>349</td>
<td>428</td>
</tr>
<tr>
<td>Total</td>
<td>16571</td>
<td>13135</td>
<td>14875</td>
<td>11628</td>
<td>9003</td>
<td>11261</td>
</tr>
</tbody>
</table>
NCDS/BCS70 – Samples and weighting

• Cohort born in one week in 1958 and 1970

• Collaboration between study team and NHS – hospitals and maternity units in GB (England, Scotland and Wales)

• Geographically distributed as GB population

• No over-sampling and hence small numbers of those from ethnic minorities - supplemented by 'immigrants' identified in schools during tracing for surveys to age 16

• No weights provided to facilitate analysis
<table>
<thead>
<tr>
<th>Surveys of sub-samples</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NCDS</strong></td>
<td></td>
</tr>
<tr>
<td>Children in Care (1965)</td>
<td></td>
</tr>
<tr>
<td>Adopted Children (1967, 1973)</td>
<td></td>
</tr>
<tr>
<td>Gifted Children (1969)</td>
<td></td>
</tr>
<tr>
<td>Children of Lone Parents (1973)</td>
<td></td>
</tr>
<tr>
<td>Handicapped School Leavers (1976)*</td>
<td></td>
</tr>
<tr>
<td>Feasibility Study for NCDS4 (1978)*</td>
<td></td>
</tr>
<tr>
<td>Smoking (1978)*</td>
<td></td>
</tr>
<tr>
<td>Epilepsy (1979, 1986)</td>
<td></td>
</tr>
<tr>
<td>Causes of death (1982)</td>
<td></td>
</tr>
<tr>
<td>Successful Disadvantaged (1985)</td>
<td></td>
</tr>
<tr>
<td>Mothers and Children (1991)*</td>
<td></td>
</tr>
<tr>
<td>Respiratory Health (1993)</td>
<td></td>
</tr>
<tr>
<td>Stepfamilies (1993)*</td>
<td></td>
</tr>
<tr>
<td>Crohn’s Disease (1994)</td>
<td></td>
</tr>
<tr>
<td>Basic Skills Problems (1995)*</td>
<td></td>
</tr>
<tr>
<td>Biomedical Survey (2002-4)*</td>
<td></td>
</tr>
<tr>
<td>Basic Skills (2003)</td>
<td></td>
</tr>
<tr>
<td>Assets (2003)</td>
<td></td>
</tr>
<tr>
<td>Civic Participation (2004)</td>
<td></td>
</tr>
<tr>
<td>Health and Family (2004)</td>
<td></td>
</tr>
</tbody>
</table>

| **BCS70**               |  |
| British Births Child Survey (all twins, low birth-weight & post-mature births, and a 10% random sample of the original cohort) (1972/3) |  |
| South West Region Survey (95% of the cohort members living in SW England or Glamorgan, South Wales) (1972/3) |  |
| Nursery and Playgroup Survey (1975) |  |
| Non-respondents to 5-year survey (1977) |  |
| Special Needs Survey (1980)* |  |
| Transition school to work and basic skills problems (2002)* |  |

* Available via the UK Data Service
Collaboration: CLS with Institute of Child Health; St George's Hospital Medical School; National Centre for Social Research; and leading health experts

Aim: To obtain objective measures of ill-health/biomedical risk

Content includes:
- Standing & sitting height, weight, waist & hip
- Blood pressure & pulse rate
- Lung function - FEV1 & FVC
- Blood collection for lipids, glycosylated haemoglobin, total & specific IgE, DNA
- Vision - Near (reading) and distant (2m) vision, stereopsis and refractive error
- Hearing - Pure tone audiometry at 2 frequencies
- Psychiatric diagnostic interviews: CIS-R
- Saliva collection for early-morning cortisol level (stress)

Data available:
- ESDS/UKDA – under ‘special licence’ (NB: Excludes DNA/genotype)
- University of Bristol (DNA)/European Genetic Archive, Cambridge (genotype)

More information: See CLS website - http://www.cls.ioe.ac.uk/
Digitised document archive (in development)

- **Content:** Searchable database holding PDFs of completed interview schedules, questionnaires and assessments; address records; and other key survey documents for >50,000 individuals/families who are part of NCDS/BCS70/MCS (indexed by study, year, document and individual)
- **Size:** 13.5 m pages and growing – Expanding as new surveys are undertaken
- **Key advantage:** Holds all data gathered - survey datasets hold most but not all information
- **Uses:**
  - Meeting requests from CMs/other respondents
  - Checking of existing computerised data
  - Extraction of precoded material not hitherto computerised
  - Re-coding of open-ended questions using new/more up-to-date coding frames
  - Extraction of textual and other material for further analysis
  - Identification of location and other geographical data
- **Availability:**
  - Now – Selected CLS staff only (for uses above, QA and ‘masking’ of disclosive data)
  - Soon – Others, via CLS ‘resource room’ (safe setting)
  - Longer-term - Access conditions reflecting those for other cohort data resources
Digitised document archive – Examples of content

following lives from birth and through the adult years

www.cls.ioe.ac.uk
The Future (following 2008 consultation)

**NCDS** - 2013 (age 55) 40 minute telephone interview (although funds will be sought to support a face-to-face interview).

Thereafter on a 5-year cycle

**BCS70** - 2012 (age 42) 75 minute face-to-face interview.

Thereafter on a 4-year cycle until aged 50 and then a 5-year cycle (to match NCDS survey ages)

**Survey modes** (*eg*: face-to-face, telephone, self-completion, etc) - Will be alternated/mixed to maximise response/coverage/data quality given available funds

**Linkage to administrative data** (*eg*: health, benefits, income, etc) - Likely to become more common

*following lives from birth and through the adult years*
Data Users and Publications

• Since 2005, >7,000 users in the UK and elsewhere have acquired anonymised cohort data to help meet their research needs.

• Currently, >2,300 references to published analyses using cohort data in the CLS publications database (likely to be a substantial under-estimate of total outputs).

Searchable publications database (including hyperlinks to abstracts full text): www.cls.ioe.ac.uk/publications
Data enhancements

- CLS welcomes proposals for data enhancements to the cohort studies. These may take the form of:
  - Additional questionnaire/survey time within an existing survey instrument to cover a particular topic
  - Data collection beyond the existing survey instruments
  - Data linkage.
- All researchers proposing a data enhancement that involves collecting/acquiring data from/about members of one or more cohort studies are asked to produce a three-page outline proposal
- See: http://www.cls.ioe.ac.uk/page.aspx?&sitesectionid=794&sitesectiontitle=Data+enhancements
Some recent findings

NCDS
- Children who are ambitious at age 11 often go on to enjoy greater career success than those with low aspirations, even after family background and prior attainment are taken into consideration.
- Girls in the 1958 cohort who attended single-sex secondary schools were more likely to gain maths and science A-levels, while boys in single-sex schools were more likely to take A-levels in English and modern languages. This suggests that the greater gender-stereotyping of subjects in mixed schools may have led to a waste of talent – even though single-sex and mixed schools produce similar exam results overall.
- Women in the 1958 cohort were less likely to lose occupational status after having children, by comparison with women in previous generations.

BCS70
- Cohort members with the poorest grasp of literacy or numeracy at age 34 were twice as likely as those with very good skills to report that their physical health was “very poor” or “poor”.
- Mothers’ and fathers’ interest in their children’s education is a significant predictor of educational attainment - especially their daughters’.
- Assessments of school-aged children suggest that their development is not affected by whether or not their mother worked during their first year of life.

See: Case study on the impact of IOE research: The British birth cohort studies (http://www.ioe.ac.uk/Research_Expertise/IOE_RD_A4_BCS_1.3_d.pdf)
Cross cohort comparisons

• People born in 1958 have a higher level of political interest and activity than members of the 1970 cohort. Fewer members of the younger cohort voted in the 1997 general election.

• The psychological health of the 1970 cohort, when they were in their mid-20s, appears to have been less good than that of the 1958 cohort. This was particularly true of women.

• There is little evidence of social mobility increasing among people born in the second half of the 20th century. Furthermore, the gap in socio-economic circumstances between children growing up in social housing and their peers is greater now than for any previous post-war generation.

• The wage gap between women and men who worked full-time in their early thirties reduced between 1978 and 2000. However, this reflects improvements in women’s education and experience rather more than a move towards equal treatment.

See: Case study on the impact of IOE research: The British birth cohort studies (http://www.ioe.ac.uk/Research_Expertise/IOE_RD_A4_BCS_1.3.pdf)
NCDS/BCS70 Impact

- Findings from the studies contributed to debates and enquiries in a number of policy areas over the last half-century, including:
  - Education and equality of opportunity
  - Poverty and social exclusion
  - Gender differences in pay and employment
  - Social class differences in health
  - Changing family structures
  - Anti-social behaviour

*eg:
- Plowden Committee on Primary Education (1967)
- Warnock Committee on Children with Special Educational Needs (1978)
- Finer Committee on One Parent Families (1966-74)
- Independent Inquiry into Inequalities in Health (1998)
- Moser Committee on Adult Basic Skills (1997-99)
- Maternity leave
- Milburn Inquiry
- National Equality Panel
- Marmot Review of Health Inequalities*
NCDS Impact

Health
• The first survey of the 1958 cohort informed debate about the best place to deliver babies. As a result, births in hospital were made more widely available to try to ensure that all mothers had care from experienced midwives and doctors.
• The 1958 study was the first to compare Body Mass Index and height growth in a large national cohort. It showed that if children had overweight parents they were more likely to become obese adults. They also gained weight quicker from early adulthood. These findings helped to make health campaigns more efficient.

Gender and work
• NCDS has produced valuable information about the different work histories – and pay – of men and women and identified some of the factors that help to explain continued gender inequalities.
• It has also provided evidence for official commissions concerned with pensions and equal pay which, in turn, fed into the 2010 Equalities Bill.

See: Case study on the impact of IOE research: The British birth cohort studies (http://www.ioe.ac.uk/Research_Expertise/IOE_RD_A4_BCS_1.3.pdf)
BCS70 Impact

Early inequality
Evidence from BCS70 showing that many bright children from poor families were overtaken by less able children from affluent backgrounds by age 6 was included in the Every Child Matters Green Paper in 2003 and helped to underpin the case for greater investment in pre-school provision.

David Halpern, former chief analyst at the Prime Minister’s Strategy Unit, has described the meeting at which this research helped to shape government thinking.

“… one of the Ministers present tore out one of the Strategy Unit’s slides and – leaning forward to put it in front of the Prime Minister declared – ‘...but what are we going to do about this? ’ The slide – now well-known and based on longitudinal data – showed how the cognitive ability of bright children from poor backgrounds appeared to be overtaken by that of much less able children from affluent backgrounds ... Within a year more than £500m was assigned to build a programme of pre-school provision for the UK.”

Mental health
Researchers discovered that half of the BCS70 cohort members with mental health problems at age 26 had developed a psychiatric disorder by age 1533. Policy-makers responded to this finding with a commitment to early intervention aimed at promoting better mental health and wellbeing.

Careers advice
The influential 1999 Social Exclusion Unit report, Bridging the Gap, which led to the creation of the Connexions service, drew on BCS70 evidence. The research showed how prolonged periods of being out of education, employment or training after leaving school have long-term negative consequences for employment and mental health.

Youth policy
The government’s ‘Youth Matters’ policy, launched in 2005 to improve local facilities for teenagers, was based partly on BCS70 evidence showing that teenagers’ involvement in structured leisure activities can have lasting benefits.

See: Case study on the impact of IOE research: The British birth cohort studies  (http://www.ioe.ac.uk/Research_Expertise/IOE_RD_A4_BCS_1.3.pdf)
Acquiring NCDS/BCS70/MCS data

• **UK Data Service:**
  - [http://www.ukdataservice.ac.uk](http://www.ukdataservice.ac.uk)
  - *End User Licence* – anonymised data
  - *Special Licence* – sensitive and disclosive data (including area data)

• **Secure Data Service (SDS):**
  - [http://securedata.data-archive.ac.uk/](http://securedata.data-archive.ac.uk/)
  - *SDS User Agreement* - Disclosive data, *eg:* MCS1-4 Linked Education Administrative Data

• **Access Committee for CLS Cohorts (AC3):**
  - [http://www2.le.ac.uk/projects/birthcohort](http://www2.le.ac.uk/projects/birthcohort)
  - *Material Transfer Agreement* - blood samples and transformed cell lines from the NCDS Biomedical Survey; DNA extracted from blood and cell lines; blood and saliva collected for purposes other than generating DNA
  - *Data Transfer Agreement* - genotypes generated from extracted DNA; linked genotype-phenotype data

• **Wellcome Trust Case-Control Consortium Data Access Committee (CDAC):**
  - [https://www.wtccc.org.uk/info/access_to_data_samples.shtml](https://www.wtccc.org.uk/info/access_to_data_samples.shtml)
  - *Data Transfer Agreement* - Genotypes of participants in the NCDS Biomedical Survey created by genome wide association (GWA) scans

• **Centre for Longitudinal Studies (CLS):**
  - [http://www.cls.ioe.ac.uk/](http://www.cls.ioe.ac.uk/)
  - Data not (yet) available via ESDS, SDS, AC3 or CDAC
  - Digitised document archive - completed survey instruments and other key survey documents formerly available only as paper
A variety of NCDS/BCS70 documentation is available, including:

Guides to datasets
Lists of publications
Annotated questionnaires
Interactive Data Dictionaries
‘Data Notes’
Other survey-related documentation
Working papers, etc

**IMPORTANT**
Always consult documentation before selecting/analysing NCDS/BCS70 data

Copies available from CLS / UK Data Service
CLS USER SUPPORT

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cohort@ioe.ac.uk

http://www.cls.ioe.ac.uk/
CLS website holds much information

following lives from birth and through the adult years
QUESTIONS