

A Methodological Research Agenda for Longitudinal Surveys

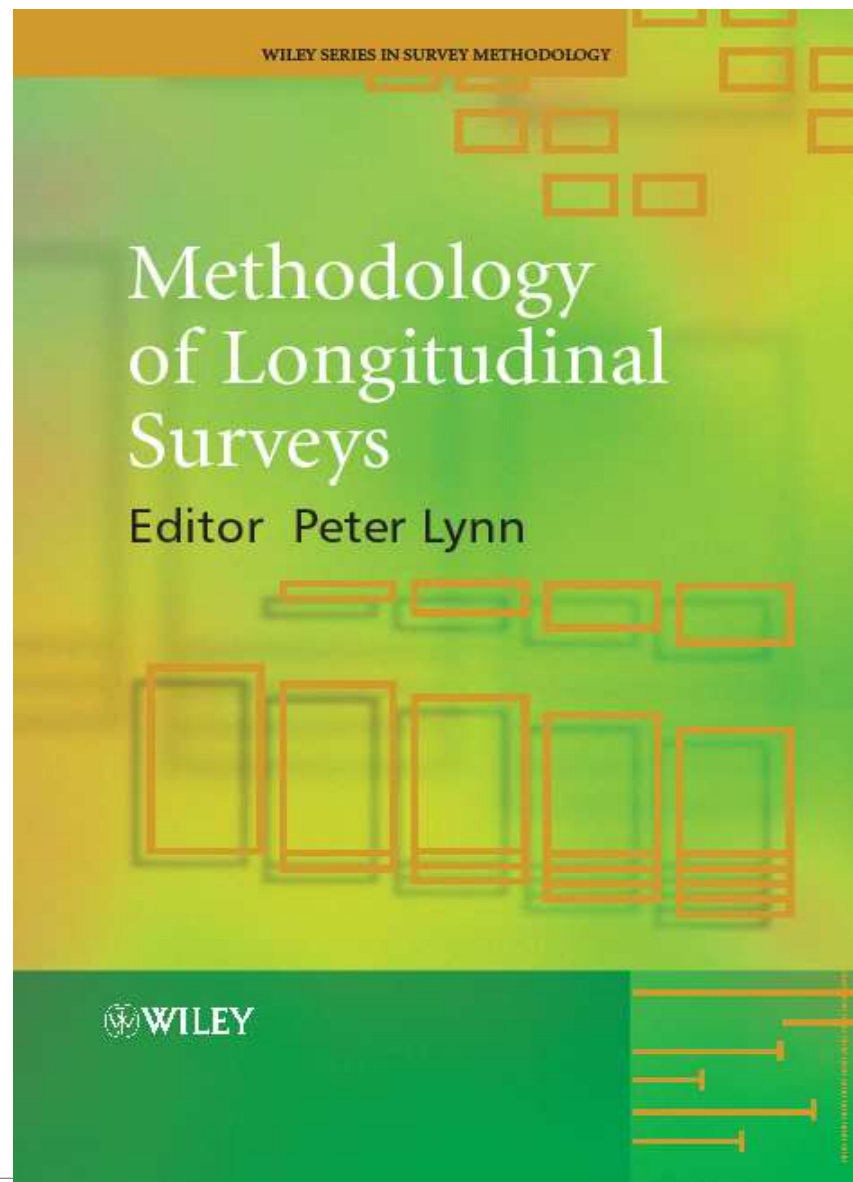
Peter Lynn

Institute for Social and Economic Research
University of Essex, UK

**XXV Statistics Canada
International Methodology Symposium
October 2009**

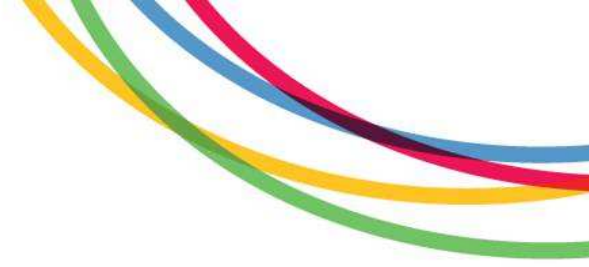


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1.

Methodological Issues





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- a) Unique to longitudinal surveys
 - b) That have specific features in the context of a longitudinal survey
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Issues in:

Overall Design

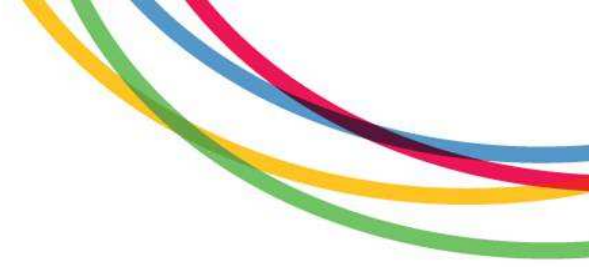
Obtaining Response

Measurement

Estimation

2.

Overall Design

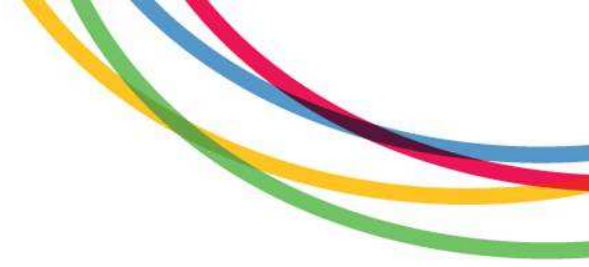


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Overall Design

Population definition

- incorporation of time
- multiple overlapping populations



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Interval between waves

- Substantive considerations, e.g. rate of change of phenomena
 - Measurement error considerations *vis à vis* recall
 - Considerations of burden and non-response
 - Practical considerations of costs and logistics
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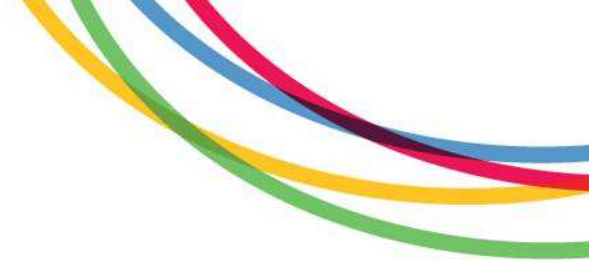
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Overall duration of study

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Obtaining Response



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Need to trace/ track between waves

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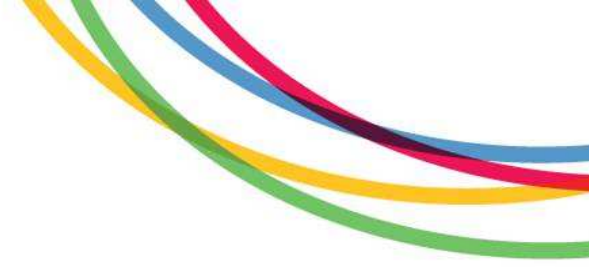
Obtaining Response

Need to trace/ track between waves

Impact of participation on future co-operation decisions

4.

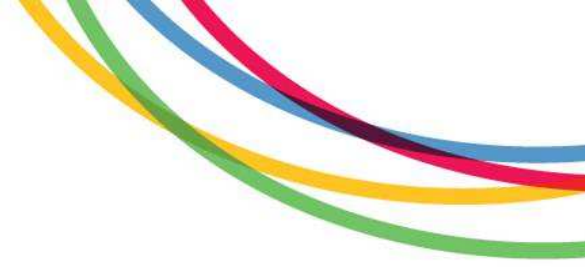
Measurement



4.

Measurement

Panel conditioning

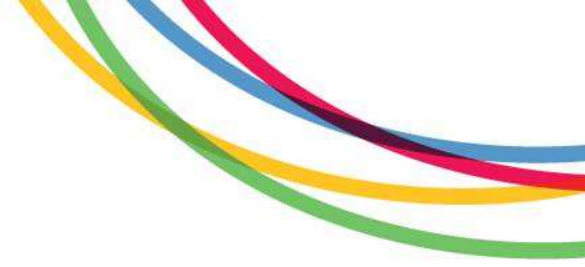


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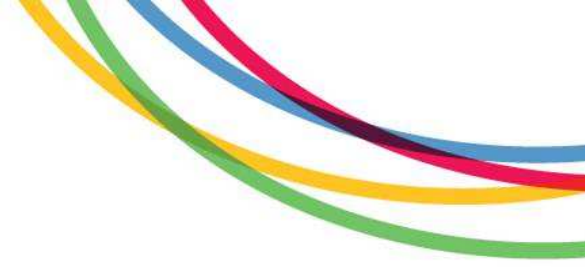
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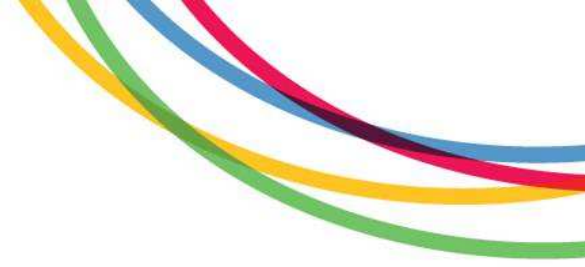
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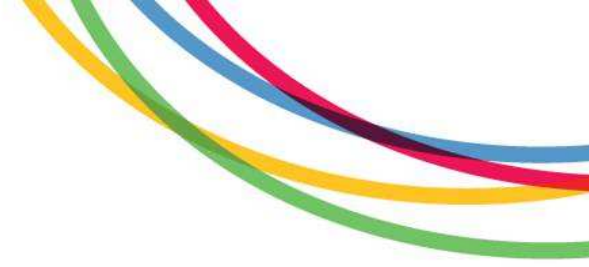
Recall issues

Modes (of approach and of data collection)



5.

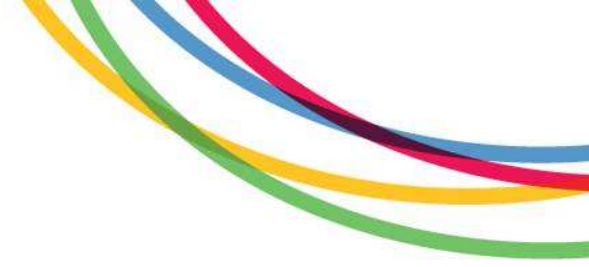
Estimation



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Dealing with attrition/ complex response patterns



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Issues in weighting

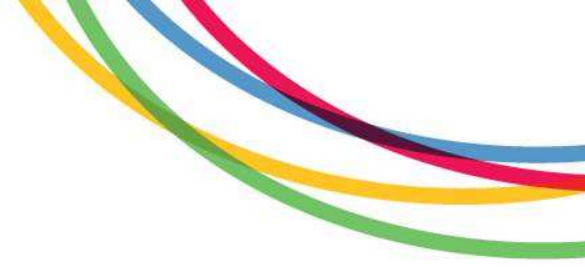
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Dealing with attrition/ complex response patterns

Issues in weighting

Issues in imputation



6.

Population Definition

Fixed *vs.* intersection of CS populations *vs.* union of CS populations

Population for data collection *vs.* population for analysis

Costs and benefits of flexibility

7.

Example: England and Wales Youth Cohort Study

3-wave panel; 8 possible response patterns:

Wave:	1	2	3	No. of cases	% of cases
1				8,396	44.9
2				2,555	13.7
3				2,660	14.2
4				900	4.8
5				386	2.1
6				575	3.1
7				352	1.9
8				2,855	15.3

(From Lynn, Purdon, Hedges and McAleese, 1994)

8.

Sample Design Issues

Dealing with births and immigrants

- Methods are typically population-specific

Rotation patterns

- Much attention paid to variance properties - but mainly for net change
 - Not so much attention to micro-level change estimates
-

9.

Interval Between Waves

- Cost-benefit analyses?
 - Intervals conditional on sample member characteristics?
-

10.

Tracking / Tracing

Variety of possible actions to maintain or re-establish contact

Each has effects on a) costs, b) outcomes

Little is known about relative effectiveness (Couper and Ofstedal 2009)

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Two recent studies beginning to address this:

McGonagle, Couper and Schoeni (2009) - PSID

Fumagalli, Laurie and Lynn (2009) - BHPS

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PSID Study

Between-wave “contact information update” mailing

Aim: To maximise response to this mailing (as less tracking effort is needed amongst responders)

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- Traditional design associated with higher response
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 - Newsletter: higher response for ‘Oct mailing only’ group
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Next steps: to consider impacts on operational burden

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BHPS Study

Between-wave contact information mailing:

- Address confirmation card *vs.* Change-of-address card *vs.* neither
 - Incentive: conditional *vs.* unconditional (each 2 amounts)
-

BHPS Study

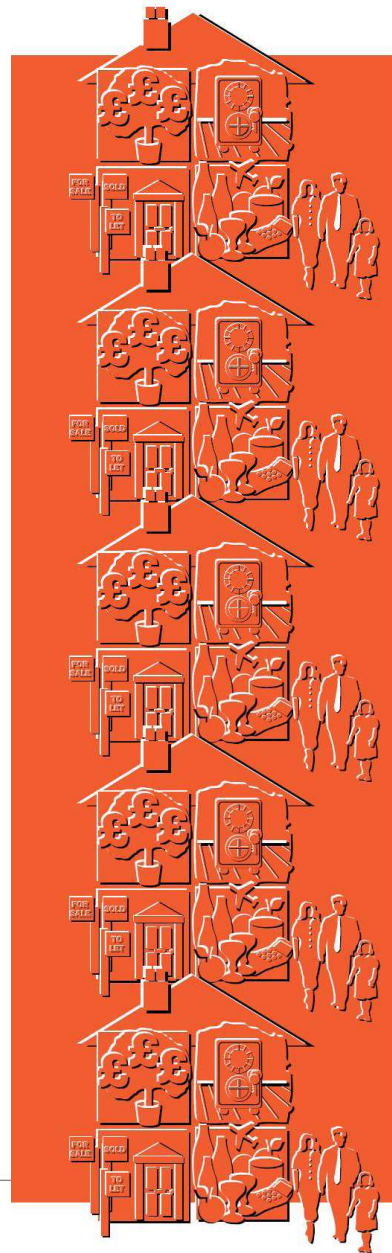
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Respondent report

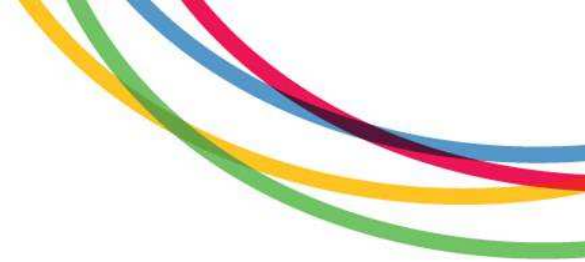
- Standard *vs.* Tailored (young/ busy/ other)
-

Standard Report



Changing attitudes and behaviours

Report to Respondents - 2008




Tailored Report (young)

2008


it's all about

FEEDBACK U

respondents report 2008



I can't imagine life without a mobile phone? I just couldn't live without mine.

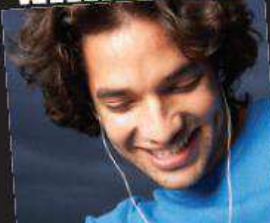


University? - Definitely. I want to go into medicine so I've got to work hard...


Are you happy with your life overall?

A large majority feel satisfied with life.

On a scale where '1' = not at all satisfied with life overall and '7' = completely satisfied with life 78% of you rated your lives as scoring 5 or higher and over 13% of you said you were completely satisfied with your lives overall.



I still live at home. Mum's great but I would like to be able to afford a place of my own




Yes, I hope to have children. But I wouldn't want more than two. Maybe only one

The changing use of technology

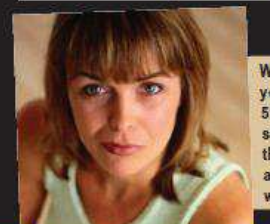
Technology is evolving fast and regular use of computers and mobile phones is becoming the norm. Almost all - 97% - of people aged 16-24 had a mobile phone in 2007, compared with 88% in 2002. Home computer use has seen a massive increase over the last decade.

Your overall satisfaction with life in 2007

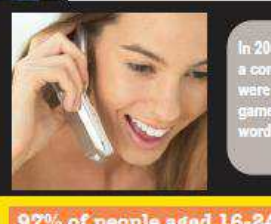
Degree of life satisfaction	Percentage
1 (Not satisfied at all)	0.8
2	2.1
3	6.8
4	13.2
5	31.7
6	32.8
7 (Completely satisfied)	13.4



Device	2002 (%)	2007 (%)
Mobile phone	88	97
Home computer	37	88



When we asked you about how satisfied you were with life compared to last year 51% of you said that you were more satisfied than last year, 13% said that they were less satisfied than last year and 36% said their level of satisfaction with life overall was about the same.



In 2007, the most common reasons for using a computer at home among 16-24 year olds were to connect to the internet (90%), to play games (57%), for educational work (66%) for word processing (54%) and hobbies (49%).

the under 25s - what you think

13% said they were less satisfied than last year

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Return rates:

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Wave 18 'untraced' rates:

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Wave 18 Response rates

- Tailored report: 89.1%
 - Standard report: 87.8%
-

Panel Conditioning

Studies generally compare a new sample with a sample asked the same questions repeatedly (e.g. Waterton & Lievesley 1989, Sturgis *et al* 2009)

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Role of interviewers

- Conditioning *by* interviewer (cf. survey, questions)
 - Conditioning *of* interviewer
 - interviewer familiarity may increase social desirability bias (some evidence: Uhrig and Lynn (2008))
 - but reduce satisficing (not much evidence)
-

17.

Measurement of Change

Many different kinds of change of interest

A change of state may be of greater substantive interest than the state(s)

Examples: change of job, activity status, income, address

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Special case of seam effects:

- Dependent interviewing (Lynn & Jäckle 2007)
 - Event History Calendars (Callegaro & Belli 2007)
 - Interviewer continuity (Vick & Weidman 1989; C&B 2007)
 - Proxy respondents (Callegaro & Belli 2007)
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Questioning approaches that reduce ambiguity and complexity

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Experiments on UKHLS Innovation Panel

(Jäckle, Uhrig and Sala)

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 - Test of effect of response order on change between nominal categories
-

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Improving Recall

- Methods to aid recall
 - Methods to correct for imperfect recall
-

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- Methods to correct for imperfect recall

Dependent interviewing, time lines, EHCs, bounding

Tailoring of methods

20.

Issues in Weighting

Identifying deaths and dealing with uncertainty

Which combinations of waves?

Choice of target estimates

21.

Conclusion: Themes of a Research Agenda

Focus on genuinely longitudinal target estimates

Examples: measurement, sampling, weighting, tracking, attrition



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Cost-benefit analyses of complex scenarios

Examples: between-wave intervals; tracking and response- enhancing measures

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Tailored approaches

Examples: intervals, mailings, interviewer continuity, recall aids

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Harnessing technology

Examples: dependent interviewing, mixed-mode approaches
