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***Understanding Society* Innovation Panel Wave 10:
Results from Methodological Experiments**

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Non-technical summary

The *Understanding Society* survey includes what is known as an 'Innovation Panel' sample (IP). This sample of originally 1500 households is used to test different methods for conducting longitudinal surveys in order to produce the highest quality data. The results from the Innovation Panel provide evidence about the best way to conduct a longitudinal survey which is of relevance for all survey practitioners as well as influencing decisions made about how to conduct *Understanding Society*. This paper reports the experiments with the mixed-mode design and early results of the methodological tests carried out at wave 10 of the Innovation Panel in the spring and summer of 2017.

IP10 employed a mixed-mode design including an internet survey, and continued ongoing experiments on the impact of incentives. As with prior waves, several other methodological experiments were also included in the survey. An experiment was conducted on the impact of advance letter phrasing indicating participation as having either a gain or loss on data quality and how this affects response rates. Several experiments were conducted on survey measurement, including how measure children not residing in a respondent's home; the ways to best measure how couples share joint finance responsibilities; and the impact of question grid design on data quality. Two additional experiments were included to explore linkage of external data sources to respondents' survey data. Requests were made to link respondents' electoral register data and for those using the service, Twitter data.

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Abstract

This paper presents some preliminary findings from Wave 10 of the Innovation Panel (IP10) of *Understanding Society*: The UK Household Longitudinal Study. *Understanding Society* is a major panel survey in the UK. In May 2017, the tenth wave of the Innovation Panel went into the field. IP10 used a mixed-mode design, using on-line interviews and face-to-face interviews. This paper describes the design of IP10, the experiments carried and the preliminary findings from early analysis of the data.

Key words: longitudinal, survey methodology, experimental design, respondent incentives, questionnaire design.

JEL classification: C80, C81, C83

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1. Introduction

This paper presents early findings from the tenth wave of the Innovation Panel (IP10) of *Understanding Society: The UK Household Longitudinal Study* (UKHLS). *Understanding Society* is a major panel survey for the UK. The first eight waves of data collection on the main sample have been completed, and ninth and tenth waves are currently in the field. The data from the first seven waves of the main samples are available from the UK Data Archive, and the eighth will be available towards the end of 2018. Data from a nurse visit to collect bio-markers from the general population sample and the British Household Panel Survey (BHPS) are also available. Data for the first nine waves of the Innovation Panel are available from the UK Data Service¹.

One of the features of *Understanding Society*, alongside the large sample size (40,000 households at Wave 1), the ethnic minority boost sample and the collection of bio-markers, is the desire to be innovative. This has been a key element of the design of *Understanding Society* since it was first proposed. Part of this drive for innovation is embodied within the Innovation Panel (IP). This panel of almost 1500 households was first interviewed in the early months of 2008. The design in terms of the questionnaire content and sample following rules are modelled on *Understanding Society*. The IP is used for methodological testing and experimentation that would not be feasible on the main sample. The IP is used to test different fieldwork designs, new questions and new ways of asking existing questions.

The second wave of the Innovation Panel (IP2) was carried out in April-June 2009, the third wave (IP3) in April-June 2010 and the fourth wave in March-July 2011. The fourth wave of the Innovation Panel (IP4) included a refreshment sample of 465 responding households. In March 2012, IP5 was fielded, with part of the samples conducting the survey via the internet, while others continued in an interviewer-administered survey. Fieldwork for IP6 started in March 2013, repeating the design where some were first asked to complete the survey via the web option while others were approached by an interviewer only. The IP6 also included a

¹ <http://discover.ukdataservice.ac.uk/series/?sn=2000053>

mop-up follow-up phase with anyone not responding with contacts attempted by CATI or CAWI at the end of the fieldwork. IP7 started fieldwork in June 2015 and added 488 responding households as a refreshment sample. IP8 fieldwork started in summer 2015, and IP9 in May 2016. Working Papers which cover the experimentation carried out in all nine previous innovation panels are available from the *Understanding Society* website.² The data from the first nine waves of the Innovation Panel are held at the UK Data Service. This paper describes the design of IP10, the experiments carried and some preliminary findings from early analysis of the data. Section 2 outlines the main design features of *Understanding Society*. Section 3 describes the design and conduct of IP10. Section 4 then reports on the experiments carried at IP10.

2. *Understanding Society*: the UKHLS

Understanding Society is an initiative of the Economic and Social Research Council (ESRC) and is one of the major investments in social science in the UK. The study is managed by the Scientific Leadership Team (SLT), based at ISER at the University of Essex and including members from the University of Warwick and the London School of Economics. The fieldwork and delivery of the survey data for the first five waves of the main samples were undertaken by NatCen Social Research (NatCen). Since Waves 6, Kantar Public has been the lead contractor. *Understanding Society* aims to be the largest survey of its kind in the world. The sample covers the whole of the UK, including Northern Ireland and the Highlands and Islands of Scotland. *Understanding Society* provides high quality, longitudinal survey data for academic and policy research across different disciplines. The use of geo-coded linked data enables greater research on neighbourhood and area effects, whilst the introduction of bio-markers and physical measurements (Waves 2 and 3) opens up the survey to health analysts.

The design of the main-stage of *Understanding Society* is similar to that of the British

² <https://www.understandingsociety.ac.uk/research/publications/working-papers>

Household Panel Survey (BHPS) and other national panels around the world. In the first wave of data collection, a sample of addresses was issued. Up to three dwelling units at each address were randomly selected, and then up to three households within each dwelling unit were randomly selected. Sample households were then contacted by NatCen interviewers and the membership of the household enumerated. Those aged 16 or over were eligible for a full adult interview, whilst those aged 10-15 were eligible for a youth self-completion. The adult interviews were conducted using computer-assisted personal interviewing (CAPI) using laptops running the questionnaire in Blaise software. Adults who participated in *Understanding Society* were also asked to complete a self-completion questionnaire, in which questions thought to be more sensitive were placed. The adult self-completions at Waves 1 and 2, and the youth self-completions, were paper questionnaires. From Wave 3 onwards the adult self-completion instrument was integrated into the interviewing instrument and the respondent used the interviewer's lap-top to complete that portion of the questionnaire themselves (Computer-Assisted Self-Interviewing, CASI). For the first seven waves, surveys of continuing sample members were interviewer-administered. At Wave 8 it was decided that the 20% of household identified as having the lowest likelihood of responding in the mixed-mode would be assigned immediately to the CAPI-only design, while the remaining 80% would be randomly allocated to one the two designs. The end result is about 60% of household interviews are CAPI-only and 40% are mixed-mode.

In between each wave of data collection, sample members are sent short reports of early findings from the survey, and a change-of-address card, to allow them to inform ISER of any change in their address and contact details. Before each sample month is issued to field for a new wave, each adult is sent a letter which informs them about the new wave of a survey, includes a token of appreciation in the form of a gift voucher and also includes a change-of-address card. Interviewers then attempt to contact households and enumerate them, getting information of any new entrants into the household and the location of anyone who has moved from the household. New entrants are eligible for inclusion in the household. Those who move, within the UK, are traced and interviewed at their new address. Those people living with the sample member are also temporarily eligible for interview. More information about

the sampling design of *Understanding Society* is available in Lynn (2009).³ From Wave 2, the BHPS sample has been incorporated into the *Understanding Society* sample. The BHPS sample is interviewed in the first half of each wave.

3. Innovation Panel Wave 10: Design

IP10 was comprised of four samples: the original sample from IP1, and refreshment samples taken at IP4, IP7 and IP10. IP10 employed a mixed-mode design, which started in IP5 has been used in each subsequent wave. Starting at IP5, the modes which were mixed were on-line (CAWI) and face-to-face (CAPI) interviewing. In IP5, a random selection of two-thirds of households was allocated to the mixed-mode design (“WEB”) with the remaining third of households allocated directly to face-to-face interviewers (“F2F”). This sample allocation has been maintained at each wave. However, starting at IP8 subgroup of households with a very low propensity to respond via the web in the CAWI condition was assigned to CAPI to begin fieldwork. Very low web propensity was determined by modelling web-completion using previous IP data. The IP10 refreshment sample units were all allocated to the F2F design. In England and Wales, face-to-face interviewing assignments were evenly split between Kantar (the lead contractor) and NatCen. Kantar conducted all the face-to-face interviewing assignments in Scotland.

Initially, advance letters were sent to adults in the WEB group which included a URL and a unique log-in code. Adults in the WEB group for whom we had an email address were also sent an email which included a link which could be clicked through to the web-site. There were two email reminders for adults with an email address who had not yet completed their interview on-line. A reminder letter was then sent to all adults in the WEB group who had not completed their interview. This letter was sent two weeks after the initial advance letter for the CAWI launch on May 9, 2017.

After two weeks of the CAWI survey being in the field, CAPI fieldwork started for the IP10

³<https://www.understandingsociety.ac.uk/research/publications/working-paper/understanding-society/2009-01.pdf>

refreshment sample. Five weeks after the start of the CAWI field period and three weeks after the IP10 refreshment sample fieldwork, CAPI fieldwork for the remainder of respondents began. CAPI interviews were attempted for all adults in the CAPI-only design and those who had not completed their WEB interview in the mixed-mode design. Those not responding to the WEB survey during the initial CAWI field period were allocated to face-to-face interviewers, but could still enter the web survey instead if they desired. Adults who had started their interview on-line, but not reached the 'partial interview' marker, were issued to face-to-face interviewers. The interviewers were able to re-start the interview at the place at which the respondent had stopped. Total fieldwork lasted 16 weeks. Overall, the WEB-only period ran from 9th May to 15st June all households except the IP10 refreshment sample. The face-to-face fieldwork started on 22nd May for the IP10 refreshment sample and 15th June for all other households, running until 26th September. The mop-up follow-up phase attempted interviews with those not responding in both the WEB and F2F versions, through CAPI, CATI or CAWI versions of the survey. This final phase ran from 26th September until 8th October.

a. Call for experiments

IP10 was the eighth time the Innovation Panel was open for researchers outside the scientific team of *Understanding Society* to propose experiments. A public call for proposals was made 6th February with a deadline of 30th March. Ten proposals were received with five being accepted. In addition to these five experiments, an additional experiment was added through work with the field agency on the presentation of sets of questions in grids, for a total of six experiments carried in IP10. The initial ten proposals were reviewed by a panel which included two ISER-based members of the *Understanding Society* scientific leadership team, and two members of the Methodology Advisory Committee to *Understanding Society* who were external to ISER. In addition to those experiments which were accepted through the public call, there were two continuing core experiments which the Understanding Society senior leadership team wanted to run. These core experiments are the mixed-mode design and the main incentives experiment.

b. Sample

There were four sample issued at IP10: the original sample from IP1 and refreshment samples

issued at IP4, IP7 and IP10. Samples other than the IP10 refreshment sample were comprised of those households who had responded at IP9, plus some households which had not responded at IP9. Households which had adamantly refused or were deemed to be mentally or physically incapable of giving an interview were withdrawn from the sample. There were 752 original sample households, 343 IP4 refreshment sample households, 442 IP7 refreshment sample households and 1438 IP10 refreshment sample households issued. There were 2975 total sample households issued at IP10. All of the households were originally selected from the Postcode Address File (PAF) using the same methods.⁴

As noted above around two-thirds of the original, IP4 and IP7 refreshment samples were allocated to the mixed-mode design which was initiated at IP5, and which has been maintained all subsequent waves, including IP10. Sample members would be approached by letter and email (where possible) to complete their interview on-line. This experimental allocation did not include the IP10 refreshment sample, which were all allocated a face-to-face only design. As noted, some households that were deemed to have a very low propensity to respond via were assigned directly to CAPI to begin fieldwork. The table below shows the allocation to mode design by sample type for those included in the issued original, IP4, and IP7 refreshment samples in IP10.

Table 1: Allocation to mode design by sample type

	Original Sample	IP4 Refreshment Sample	IP7 Refreshment Sample	Total
CAPI only	272 36.2%	136 39.7%	147 33.3%	555 36.1%
Mixed-mode (CAWI+CAPI)	480 63.8%	307 60.4%	295 66.7%	982 63.9%
Total	752	343	442	1,537

⁴ See Lynn, P. (2009). Sample Design for Understanding Society *Understanding Society Working Paper Series No. 2009 – 01* at <https://www.understandingsociety.ac.uk/research/publications/working-paper/understanding-society/2009-01>

c. Questionnaire design

The questionnaire at IP10 followed the standard format used in the previous Innovation Panels as well as the main-stage of *Understanding Society*. The questionnaires used at IP10 are available from the *Understanding Society* website.⁵ The interview included the following sections with the corresponding target times for each:

- Household roster and household questionnaire: 15 minutes per household
- Individual questionnaire: average 31 minutes for each person aged 16 or over
- Adult self-completion: around 9 minutes, computer self-administered interview (CASI)
- Youth self-completion: 10 minutes for each child aged 10-15 years
- Proxy questionnaire: 10 minutes for adults ages 16 or over who are not able to be interviewed.

There were some changes made to the questionnaire to enable participants to complete it online at IP5 when the web design was first introduced, and can be described more in-depth in the working paper containing results from the experiments in IP5.⁶ Briefly, the changes made to the questionnaire are as follows. Questions were reworded as needed to include interviewer instructions that may clarify the definition of the question. Text was altered to be more participant-focused rather than interviewer-focused. The first person in the household to log in to the web survey would be asked to complete the household enumeration. A question about who was responsible for paying household bills was included; the person or people indicated as responsible were routed first to the household questionnaire and then to the individual questionnaire.

If a participant had started to answer their questionnaire and left the computer for 10 minutes, they were automatically logged out. The participant was able to log back in using the same process as they had originally logged in, and they would be taken to the place that they had

⁵ <https://www.understandingsociety.ac.uk/documentation/innovation-panel/questionnaires>

⁶ <https://www.understandingsociety.ac.uk/research/publications/working-paper/understanding-society/2013-06>

left the interview. This also applies to those who had closed down the browser mid-interview. A 'partial interview' marker was put into place about two-thirds of the way through the interview, after the benefits section. If a participant reached this stage, the interview was considered to be a 'partial interview'. They could log back in and complete if they wanted, but otherwise they were not contacted by an interviewer. If the participant had not reached this marker before closing down the browser, they were sent an email overnight which thanked them for their work so far and encouraged them to complete the survey, giving them the URL to click through to the survey. Again, they would start at the point where they had left off. In addition, those who had started but not reached the partial interview marker were, after the initial two weeks, issued to face-to-face interviewers who would be able to finish the survey with them, from where they had left off.

d. Response rates

This section sets out the response rates for IP10 as a whole. The issued sample at the tenth wave consisted of 1328 households that had responded to IP10, 1438 IP10 refreshment sample households, and 209 households that had not responded at IP10, but had at some prior wave(s). Fieldwork for continuing sample members was split by CAPI-only and mixed-mode allocations, while IP10 refreshment sample households were all conducted CAPI-only. Table 2 displays the household-level response at IP10 for the original, IP4 and IP7 refreshment samples by CAPI-only and mixed-mode conditions and the overall total response. The lower panel displays individual response rate for each. For each cell, the percent is reported above the number of units the percent represents, in italics. The total number of eligible sampled units is in the Total rows, in bold.

Table 2. Household and Individual Response Outcomes for Original, IP4 and IP7 Refreshment Sample by Mode Design, IP10

	Original Sample		IP4 Refreshment Sample		IP7 Refreshment Sample		Combined		Total
<i>Household RR</i>	F2F	MM	F2F	MM	F2F	MM	F2F	MM	
Complete HH	60.5%	63.3%	53.4%	64.3%	55.6%	54.8%	57.5%	61.0%	59.7%
	<i>158</i>	<i>290</i>	<i>70</i>	<i>126</i>	<i>75</i>	<i>154</i>	<i>303</i>	<i>570</i>	<i>873</i>
Partial HH	18.8%	18.8%	21.4%	21.4%	18.5%	20.3%	19.4%	19.8%	19.6%
	<i>54</i>	<i>86</i>	<i>28</i>	<i>42</i>	<i>25</i>	<i>57</i>	<i>102</i>	<i>185</i>	<i>287</i>
Total Responding HH	79.3%	82.1%	74.8%	85.7%	74.1%	75.1%	76.9%	80.8%	79.3%
	<i>207</i>	<i>376</i>	<i>98</i>	<i>168</i>	<i>100</i>	<i>211</i>	<i>405</i>	<i>755</i>	<i>1160</i>
Nonresponding HH	20.7%	17.9%	25.2%	14.3%	25.9%	24.9%	23.2%	19.3%	20.7%
	<i>54</i>	<i>82</i>	<i>33</i>	<i>28</i>	<i>35</i>	<i>70</i>	<i>122</i>	<i>180</i>	<i>302</i>
Total HH	261	458	131	196	135	281	527	935	1462
<i>Conditional Individual RR</i>	F2F	MM	F2F	MM	F2F	MM	F2F	MM	
Responding individuals	83.7%	85.5%	82.1%	85.8%	82.4%	82.8%	83.0%	84.8%	84.2%
	<i>323</i>	<i>679</i>	<i>161</i>	<i>297</i>	<i>164</i>	<i>435</i>	<i>648</i>	<i>1336</i>	<i>1984</i>
Nonresponding individuals	16.3%	14.5%	17.9%	14.2%	17.6%	17.2%	17.0%	15.2%	15.8%
	<i>63</i>	<i>115</i>	<i>35</i>	<i>49</i>	<i>35</i>	<i>75</i>	<i>133</i>	<i>239</i>	<i>372</i>
Total Ind.	386	794	196	346	199	435	781	1575	2356

There were 1160 interviewed households from the continuing samples, for a 79.3% overall household response rate. Within these households, 1984 people were interviewed, for a conditional individual response rate of 84.2%.

Table 3 shows the household-level and individual-level response at IP10 for the IP10 refreshment sample. For the IP10 refreshment sample, 339 households were surveyed, a 25.1% response rate. Of all of the enumerated individuals in these households, 497 were interviewed, equalling a 77.7% response rate.

Table 3. Household and Individual Response Outcomes for IP10 Refreshment sample, IP10

IP10 Refreshment Sample (Initial wave – CAPI only)	
<i>Household RR</i>	
Complete HH	17.1% 231
Partial HH	8.0% 108
Total Responding HH	25.1% 339
Nonresponding HH	74.9% 1009
Total HH	1348
<i>Conditional Individual RR</i>	
Responding individuals	77.7% 497
Nonresponding individuals	22.3% 143
Total Individuals	640

Given the mixed-mode design used for portions of the original and IP4 and IP7 refreshment samples at IP10, not all individuals responded in the same mode. Further, at IP10 the mop-up period was again used, where non-responding units all the samples were contacted and could respond via the web regardless of the allocated mode design. Nobody responded via the telephone at IP10. Only two respondents in the IP10 refreshment sample completed via the web, with the remaining 495 individuals responding in the IP10 refreshment sample did so via face-to-face interviewing, consistent with their initially assigned mode. Table 4 shows the mode of completion for individuals in these three samples by mixed-mode condition (for IP1, IP4, and IP7 samples) and total overall at IP10 including the mop-up phase.

Table 4. Mode of Response, IP10

	Original Sample		IP4 Refreshment Sample		IP7 Refreshment Sample		Combined		Total
<i>Responding Mode</i>	F2F	MM	F2F	MM	F2F	MM	F2F	MM	
Face-to-Face	92.3%	24.5%	88.8%	22.2%	95.7%	33.1%	93.3%	26.3%	47.8%
	298	166	143	66	157	119	598	351	949
Web	7.7%	75.5%	11.2%	77.8%	4.3%	66.9%	7.7%	73.3%	52.2%
	25	513	18	231	7	241	50	985	1035
Total Ind.	323	679	161	297	164	360	648	1336	2267

Starting in IP8, it was possible to access the web survey using any internet-enabled device. In previous waves, smartphones were blocked from accessing the survey, although tablets could access the questionnaire. A number of variables were captured about the device the survey was accessed with, including what type of device was used, the operating system, the device model, the browser used, browser version, and screen resolution. These variables are now available in the IP from the seventh wave as `w_deviceused` `w_deviceos` `w_devicemodel` `w_browserused` `w_browserversion` `w_screenresolution` in the file `w_indresp_ip`. The distribution of devices among web respondents used across all samples in IP10 is presented in Table 5.

Table 5. Device Used, Web Respondents, IP10

IP10 Web Respondents	
PC/Laptop	60.1%
	623
Large Tablet	18.6%
	182
Small/Medium Tablet	10.5%
	109
Smartphone	11.9%
	123
Total Web Respondents	1037

The Impact of Incentives

Most continuing sample members received the same incentive at IP10 as they had done at IP9. In consequence, there were again three experimental groups amongst the continuing mixed mode IP1 and IP4 samples (£10 unconditional, with or without an additional £20 conditional on participation online, £30 unconditional), three experimental groups amongst

the IP7 refreshment sample (£10, £20 or £30, unconditional), and no experimentation amongst the continuing CAPI-only sample (£10 unconditional). Every HH in the IP10 refreshment sample was to be CAPI-only and received a £10 unconditional incentive. Table 6 presents total household response rates (including complete and partial response) by incentive type, excluding the IP10 refreshment sample, which had a constant incentive level and has response rates reported above.

Table 6. Household Response Rate by Incentive Type, IP10

	HH Response
£10 Unconditional	77.6% <i>550</i>
£20 Unconditional	65.3% <i>92</i>
£10 Unconditional +£20 for individual	83.3% <i>180</i>
£30 Unconditional	85.0% <i>317</i>
Total Households	1139

Longitudinal Response Outcomes

The individual re-interview rate is an important outcome in a longitudinal survey, since analyses require pairs of observations to measure change. Re-interview rates are calculated as the percentage of eligible units responding at later waves who were also surveyed at the initial wave. For those in the original sample, the percentage is predicated on response at IP1, while the fourth wave is the initial wave for the IP4 refreshment sample, and the seventh wave was the first for IP7.

Table 7 presents the longitudinal individual re-interview rates for the original sample (for IP2-IP10), the IP4 refreshment sample (for IP5-IP10), and IP7 (for IP8-IP10). For each cell, the percent is reported above the number of individuals the percent represents, in italics.

Table 7. Longitudinal re-interview rates

	IP2	IP3	IP4	IP5	IP6	IP7	IP8	IP9	IP10
Original Sample	69.3% 1654	60.6% 1442	54.7% 1270	45.9% 1095	45.9% 1100	38.4% 917	36.2% 867	35.8% 814	31.2% 746
IP4 Refreshment Sample	-	-	-	82.0% 586	76.8% 554	62.1% 447	58.8% 423	58.7% 396	48.4% 350
IP7 Refreshment Sample							79.2% 520	82.7% 487	61.8% 404

As with any longitudinal study, there has been attrition at each wave, decreasing the overall numbers for each sample. At IP10, 746 individuals from the original sample who responded at IP1 were successfully interviewed, representing a 31.2% re-interview rate. For the IP4 refreshment sample, the IP10 was their sixth wave and 350 responded, for a 48.4% re-interview rate. IP10 was the third wave for the IP7 refreshment sample, with 404 responses for a 61.8% re-interview rate.

4. Experimentation in IP10

There were a number of experiments carried on IP10, with one covering fieldwork procedures and the remainder examining measurement in the questionnaire. This section outlines the experiments carried at IP8; briefly explaining the reasons for carrying them, describing the design of the experiment and giving an indication as to the initial results from early analysis of the data. The analyses in this working paper were based on a preliminary data-set which contained all cases but did not have weights or derived variables. The authors and proposers of the experiment of each sub-section below are given in the heading.

a. Applying prospect theory to survey advance letters (Peter Lynn)

Prospect theory (Kahneman and Tversky, 1979, 1984) is a general theory concerning the psychology of responding to requests. It states that the influential power of avoiding negative outcomes is stronger than that of achieving positive outcomes. Experimental evidence appears to confirm the theory in several contexts. For example, people are more willing to

take actions to prevent a charity from losing \$10 than they are to earn \$10 for the charity (Kahneman 2011).

In a survey context, Tourangeau and Ye (2009) carried out an experiment on a telephone follow-up to an RDD survey in the USA, in which interviewers emphasised either the positive benefits of participation or the negative consequences of not participating. They found a higher re-interview rate with the negative appeal. Emphasising positive and negative outcomes have also been compared in the context of asking for consent to data linkage. Two separate studies, also both on telephone surveys, found a higher consent rate with the negative wording. One of these studies took place in the USA (Kreuter, Sakshaug and Tourangeau, 2015) and the other in Germany (Sakshaug, Wolter and Kreuter, 2015).

To our knowledge this is the first study of prospect theory as applied to a CAPI or web survey. Sample households were randomly allocated to one of two treatment groups. The control group received an advance letter that stressed the positive benefits of participation. (This is referred to as the control group as this is the approach that has been used in the advance letters for all previous waves of both the Innovation Panel and the main Understanding Society survey.) The treatment group instead received a letter that stressed the negative consequences of not participating. The negative consequences were framed in terms of a loss of value of the data that the respondent had already supplied at previous waves. For that reason, the IP10 refreshment sample, who were being asked to participate for the first time, were excluded from the experiment. All persons within a household received the same treatment.

The paragraph within the advance letter that varied between the two experiment groups was as follows:

Control group (positive wording):

“The information you have given us previously is very valuable and will become even more valuable if you participate again this year. We need to continue interviewing the same people in order to understand changes in our society.”

Treatment group (negative wording):

“The information you have given us previously is very valuable but will become much less valuable if you don’t participate again this year. We need to continue interviewing the same people in order to understand changes in our society.”

The treatment had no effect on the overall propensity to participate (Table 8). The direction of the effect is estimated to be opposite to that hypothesised, but the difference is not statistically significant.

Table 8. Impact of Wording on IP10 Outcome

IP10 Outcome	Experimental treatment		Total
	Positive wording (control)	Negative wording (treatment)	
Respondent	65.8%	64.3%	65.1%
Non-respondent	34.2%	35.7%	34.9%
Total	1,513	1,492	3,005

Notes: Base is all sample members eligible for the individual interview at IP10; outcome is completion of the individual interview; $P = 0.41$

b. Financial management and perceptions of ownership of money within couples (Hayley Fisher, Hamish Low)

Introduction

The wellbeing of each individual within a relationship depends upon their access to the household resources. The decision within a couple of how to manage finances affects this ability to access resources, and might reflect intentions to share or not. The aim of this research is to explore the extent that the way finances are managed reflects the intention of the couple to share resources.

There is a body of research investigating financial management in intimate relationships which classifies approaches into a financial management system typology based on the seminal work of Pahl (1995). Understanding Society has asked a question based on this typology in the past. However, recent qualitative research suggests that this is not sufficiently nuanced to understand differential access to and perceptions of ownership of money within relationships. In this experiment, we test two alternative approaches to measuring access to

money within relationships and compare them to the traditional typology in order to better understand how to assess whether couples pool their incomes.

This speaks to an important policy question. Traditionally, family law governing the division of property at divorce assumes that a married couple pools resources and shares a common standard of living, justifying the reallocation of property in the event of divorce. On the other hand, unmarried cohabitants are less likely to have joint bank accounts and less likely to report joint management of finances when responding to the standard typology questions mentioned above (Vogler 2005). This lower perception of shared lives has been used as justification for not extending access to legal remedies to cohabiting couples at relationship breakdown: in *Stack v Dowden* ([2007] UKHL 17, [2007] 2 WLR 831) the absence of joint bank accounts and presence of independent management of finances was key in determining that there was no intention to share a property equally. Given increasing rates of unmarried cohabitation in the UK (Berrington and Stone 2015), it is important to more clearly understand the extent to which a relatively simple financial management typology reflects understandings of ownership and sharing of money within a household. A misunderstanding of this relationship can result in policy that unfairly disadvantages unmarried cohabitants in the event of relationship breakdown.

In this note, we first outline the experimental design and sample. We then present the results on variation in how respondents describe their financial arrangements. This enables an assessment of how the way finances are managed relates to how the ownership of resources is perceived.

Experimental design

All couples were asked the traditional financial management typology question. Married and unmarried cohabiting couples were randomly allocated to one of two treatment groups. Treatment group 1 received just one question asking about their contribution to shared expenses (*perceptions of contributions to joint expenses*). Treatment group 2 received a series of items (detailed below) to determine their *perceptions of ownership of money*, based on items proposed by Ashby and Burgoyne (2009). The objective is to compare responses to the baseline question to the one-shot question and to an index of shared versus distinct ownership of money based on item response in treatment group 2.

Baseline question

The main Understanding Society survey and the Innovation Panel include the following question based on Pahl's (1995) typology:

People organise their finances in different ways. Which of these comes closest to the way you organise yours? It doesn't have to fit exactly - just choose the nearest one.

1. We share and manage our household finances jointly
2. We pool some of the money and keep the rest separate
3. We keep our finances completely separate
4. One person looks after the couple's money except their partner's spending money
5. One person is given a housekeeping allowance. Their partner looks after the rest of the money
6. We have some other arrangement

For our analysis we collapse these responses into five categories representing a Joint Pool (JP both, response 1), a Pool managed by one partner (JP one, responses 4 and 5), a Partial Pool (PP, response 2), Independent Management (IM, response 3) and Other (response 6).

Treatment group 1

Couples allocated to treatment group 1 are additionally asked the following question:

Different couples often share their joint expenses in different ways. Joint expenses include rent or mortgage payments, utility bills, groceries and money spent on shared entertainment. What proportion of your shared expenses do you pay?

1. 25% or less
2. More than 25% but less than 50%
3. 50%
4. More than 50% but less than 75%
5. 75% or more
6. All of our money is pooled together

Treatment group 2

Couples in households allocated to treatment group 2 are additionally asked to respond to the following prompts:

Different couples often think about and treat money in different ways. Please tell us how much you agree or disagree with the following statements:

- A. I would say that overall I see the money I earn as money for the relationship rather than just my money.
- B. It makes no difference which account or name money is kept in - all the money belongs to both of us.
- C. I would say my partner and I usually just give rather than loan each other money.
- D. I feel we are starting to view money as more shared than we used to.
- E. It does not matter how much we each pay towards joint expenses as long as they all get paid.
- F. If I borrow money from my partner I would always pay them back as I would expect them to do the same.
- G. We see ourselves as separate from each other financially.
- H. Contributing equally to household expenses and splitting costs 50/50 is very important to me.

Respondents are able to choose between:

- 1. Strongly Agree
- 2. Agree
- 3. Neither Agree nor Disagree
- 4. Disagree
- 5. Strongly Disagree

Sample

Individual interviews including questions for this study were completed for 1494 individuals, with 772 completed interviews in treatment group 1 and 722 in treatment group 2. Of these individual responses, 1248 represent 624 matched couples (322 couples in group 1 and 302 in group 2). Restricting analysis to individuals giving a non-missing response to the traditional financial management question (1487) and either the one-shot question in treatment group 1 (759) or all questions in treatment group 2 (692) gives an analysis sample of 1448 individuals, including 593 matched couples.

Results

Table 9 shows responses to the traditional financial management typology based on Pahl (1995). Column 1 shows the proportion of individuals giving each response and shows that almost 70% of respondents report pooling resources and only 11% report independent management. Columns 2 and 3 show that there are large differences in this pattern based on

marital status, with unmarried cohabiting respondents being less likely to operate a joint pool and more likely to operate a partial pool or manage finances independently than married respondents. On the other hand, there is widespread pooling of resources even among unmarried couples. The difference between married and unmarried couples does suggest differences in how money is viewed and shared. Our experiment assesses whether this difference is borne out with our more nuanced questions.

Columns 4 and 5 show results separately for men and women, and show that there are not large differences in responses between men and women. Future work will check for within-couple consistency in responses.

Table 9: Traditional financial management typology

	All	Married	Unmarried	Men	Women
Financial management type	(1)	(2)	(3)	(4)	(5)
Joint pool, both manage	58.2	62.8	38.0	59.3	57.1
Joint pool, one manages	11.1	12.2	6.6	11.1	11.2
Partial pool	15.0	12.2	27.3	14.2	15.7
Independent management	11.1	8.7	21.4	10.1	12.0
Other	4.7	4.3	6.6	5.3	4.1
Observations	1,448	1,177	271	696	752

Note: Table shows percent of observations in each category

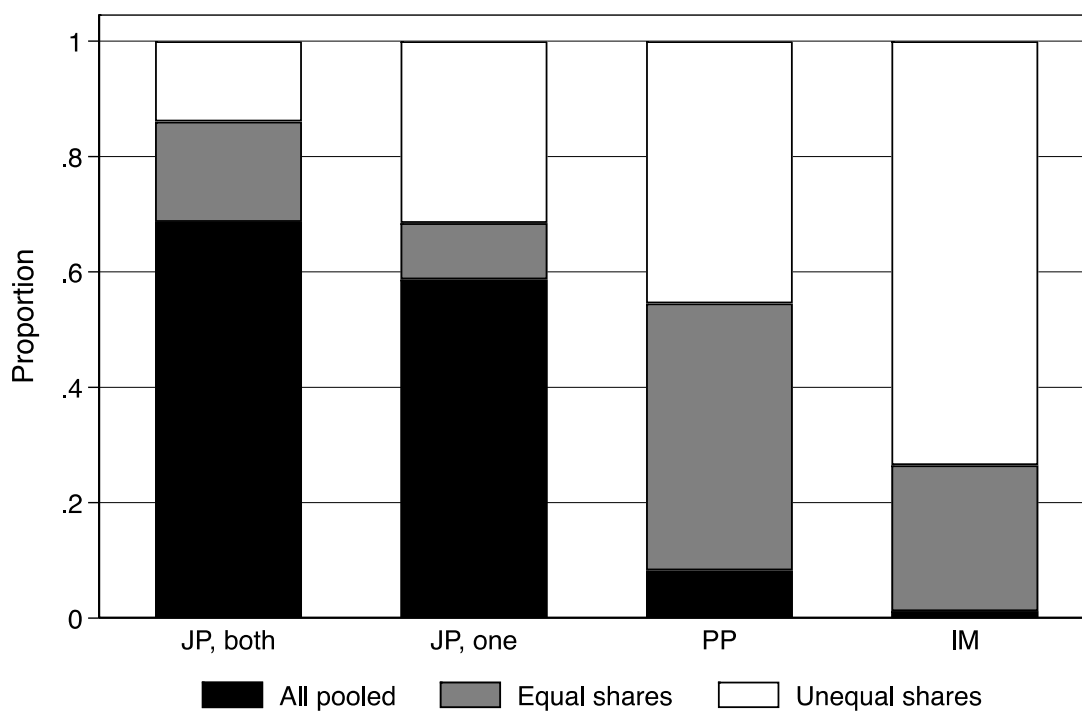
Treatment group 1

We now consider the 757 respondents in treatment group 1. We collapse the data into three categories: those who report pooling resources; those who report contributing equal shares; and those who report unequal shares. Figure 1 illustrates responses to the one shot question within each traditional financial management category. 67% of those operating a joint pool report that all of their money is pooled together in this question, with 33% opting for a different response. Clearly, for some couples there is a distinction between the way that finances are managed and the perception of how much each person contributes financially to the relationship. Over half of those operating a partial pool report making equal contributions to household expenses or actually fully pooling their resources, indicating substantial

willingness to share. This sharing of resources is far less common for those with independent management of finances.

It is unclear how to interpret the response of making equal contributions to household expenses. On the one hand, this may reflect a perception of equal contributions due to the joint ownership of money in the relationship. On the other hand, equal contributions in couples with disparate incomes may reflect equal sharing of financial *responsibilities* and distinct ownership of earned income. Future analysis of this data will compare these reported contributions to the proportion of household income earned by each partner to assess whether differences in contributions reflect differences in earnings.

Figure 1: Treatment group 1 responses, by financial management type



Note: Individuals reporting “other” arrangement in the traditional typology are excluded (4.7% of observations)

Treatment group 2

There are 689 full responses in treatment group 2. Table 10 presents responses to these questions. Responses to statements A, B, C, E and G all suggest substantial sharing within relationships: over 80% of couples essentially view money as being common. Statements D,

F and H show less of a distinct pattern of responses, perhaps reflecting that they do not have a clear answer when a couple perceives all income as jointly owned.

Table 10: Responses to ownership perceptions items (percent of respondents in each category)

Statement	Strongly		Neither	Disagree	Strongly
	Agree	Agree			Disagree
A: Money earned is for relationship	50.7	33.4	9.7	5.1	1.2
B: Money earned belongs to both partners	53.3	30.3	7.6	7.8	1.0
C: Money is given between partners	50.2	34.0	11.0	3.5	1.3
D: Money is becoming more shared	17.7	25.4	34.8	15.1	7.0
E: Doesn't matter who pays expenses	51.5	37.9	6.2	4.1	0.3
F: Repay money borrowed from partner	14.1	24.5	37.0	14.5	9.9
G: Money is kept separate	1.2	10.7	11.2	30.3	46.6
H: Contributing equally is important	13.4	20.2	25.0	23.7	17.9

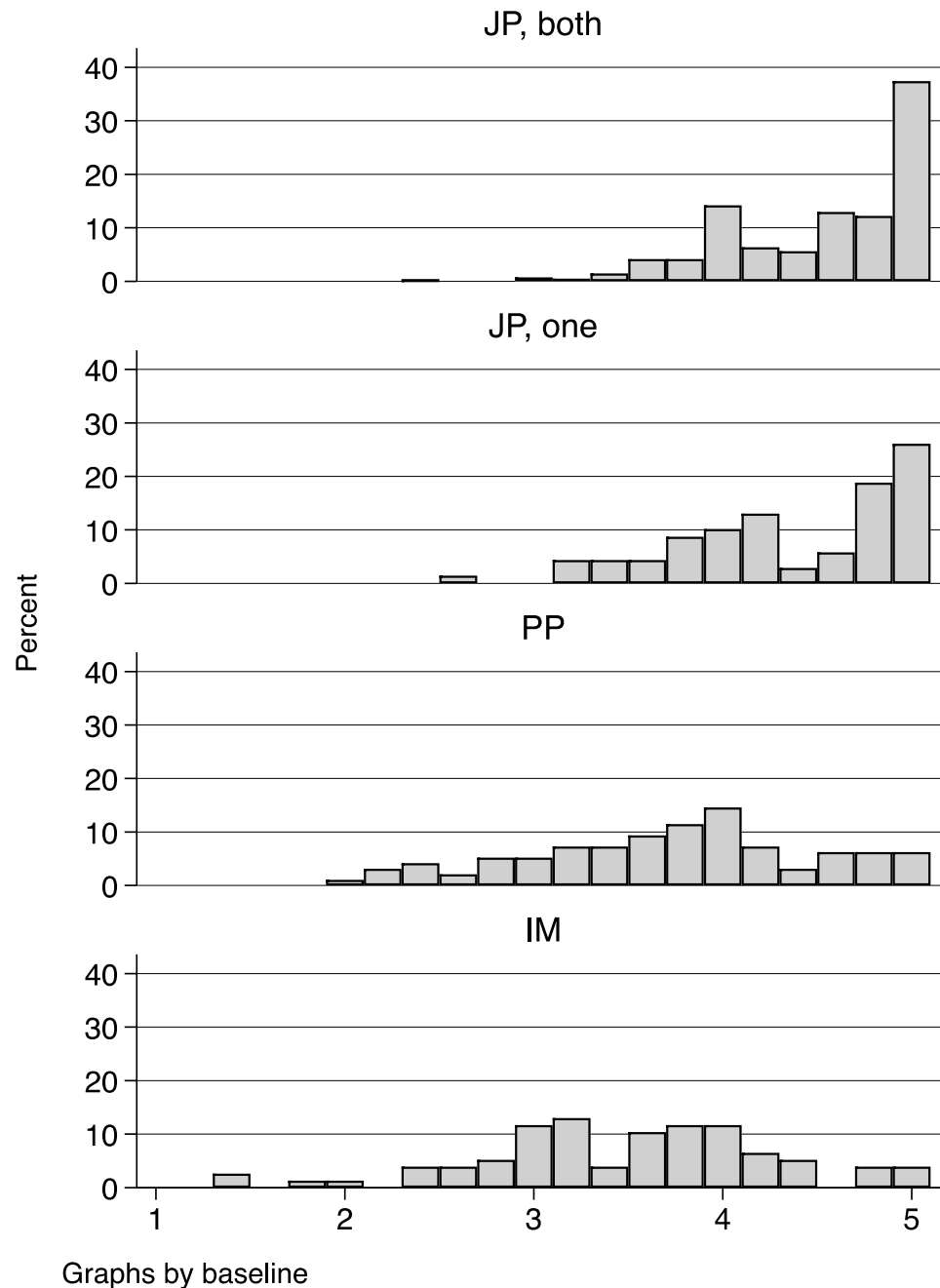
We construct an index of “joint ownership of money” using responses from statements A, B, C, E and G. We assign a score of 5 to “strongly agree”, through to 1 for “strongly disagree”, with statement G being reverse coded. We take the average across these scores to find an individual measure. The measure of joint ownership lies between 1 and 5 with higher score representing more joint ownership. Figure 2 illustrates the distribution of this measure of joint ownership for the different traditional money management types.

We see that those individuals reporting a joint pool (with either both or one partner managing that pool) have higher joint ownership scores. Couples operating a partial pool, or independent management, have lower average joint ownership scores.

However, the key point to draw from this figure is that within each notional financial management type, there are substantial differences in how couples view ownership of resources. Within the partially pooled and independently managed groups, there are some respondents with high scores for joint ownership: the way in which finances are managed does not map directly to the way that money is perceived and shared. This initial analysis of the data shows that the two approaches reveal a more nuanced view of household money management and ownership. How couples formally manage their money does not necessarily

reflect how they view ownership. Future analysis will examine how perceptions of ownership are related to household structure, marital status and relative incomes, and examine whether there is within-couple consistency in responses.

Figure 2: Distribution of measure of joint ownership across financial management types



Note: Individuals reporting “other” arrangement in the traditional typology are excluded (4.7% of observations)

c. Can we improve the representativeness of non-resident parents, and collect robust data on reasons for separation? (Caroline Bryson, Stephen McKay)

Introduction

The under-representation of non-resident parents in surveys hinders research on family separation, leaving key evidence gaps for those making policy and practice decisions related to separated families. In IP10, we tested a set of questions aspiring to identify more, and a more representative sample of non-resident parents than achieved previously. We also tested questions hoped to fill a second key evidence gap, namely how the reasons for separation – and who instigates it – affect post-separation trajectories and outcomes. Because of the potential sensitivity of the questions, we tested for differences by survey mode (computer assisted face-to-face interview (CAPI) or web self-completion) and length of time in the panel.

In comparison with the existing UKHLS method for identifying non-resident parents, the new questions did not improve on levels of self-identification. However, the two methods in combination could provide a valuable increase in numbers. Also, there is tentative evidence that the new method is better at identifying non-resident parents with no or very infrequent contact with their children. On the second experiment, it appears feasible to ask separated parents about the reasons for their separation, with some suggestion that face-to-face questioning rather than self-completion elicits a more nuanced response.

The non-resident parent experiment

Non-resident parents are consistently under-represented in population surveys⁷: only a proportion self-identify when asked, and those who do are unrepresentative of non-resident parents as a whole. The UKHLS identifies non-resident parents as respondents with a child aged under 16 living outside their household, when asked to pick all living relative types from a showcard list.⁸ Using this approach, UKHLS wave 1 identified nearly three times as

⁷ Within population surveys, we include those of the general population, of families/parents and those focusing specifically on separated families/parents.

⁸ Previous surveys (e.g. Peacey and Hunt, 2009; Wikeley et al, 2008; Bradshaw et al, 1999) taking similar approach have found similar levels of self-identification and biases.

many resident⁹ as non-resident parent households. Moreover, the responses of non-resident parents suggest bias towards those more engaged with their children. For example, in UKHLS wave 3, over 60 per cent of non-resident parents reported paying child support, while 37 per cent of resident parents reported receiving it. Eleven per cent of non-resident parents reported never seeing their child, while resident parent responses suggested around 33 per cent.

The reasons behind such poor representation of self-identified non-resident parents are unclear, and a combination of factors is likely at play. Some of these factors are inherent in a lot of survey research (e.g. lower response rates among younger men of lower socio-economic backgrounds who, in turn, make up a disproportionate number of non-resident parents). However, it is suspected that at least some of the explanation lies in a reticence among non-resident parents to self-identify (e.g. because of a painful relationship or because of a lack of fulfilment of their parental and/or financial obligations) or a perception among some non-resident parents about whether they ‘count’ as a parent (e.g. because they have no contact or a poor relationship). Our experiment addresses the latter set of issues.

The IP10 fielded two sets of questions, both of which aimed to identify non-resident parents, and both of which were asked of all respondents¹⁰:

1. A detailed set of questions on fertility, adoptive and step-parenting history;
2. The standard UKHLS questions on living relatives, with minor adaptations to (a) allow for the separate identification of biological, adopted and step-children and (b) include dependent children up to the age of 18 (rather than, as currently, 16).

In line with US evidence that fertility histories elicit substantially higher levels of non-resident parent identification than more direct questions on non-resident children (Bart Stykes et al. 2013), we hoped that asking respondents to enumerate all children born or adopted to them, or to whom they had been a step-parent, would be a more neutral and objective method of identifying non-resident parents, resulting in increased self-identification. Bart Stykes et

⁹ Resident parents are identified within the household grid.

¹⁰ The order in which they were asked each set was randomised to reduce contamination. A within- rather than between-respondent experiment both strengthens the power and reliability of our analysis power and maximises the number of non-resident parents in both arms of the experiment.

al.'s work found that this method of questioning not only affected the prevalence and profile of non-resident parents, but also the proportion reporting paying child support.

This proved not to be the case in IP10, with no statistically significant differences in the proportions identified in each experimental arm. Table 11 shows the proportion of the sample who self-identify as a non-resident parent within each approach, and across both approaches. Asking about living relatives outside the household identified 3.4 per cent (n=84) of respondents as non-resident parents, compared to three per cent (n=75) identified through the fertility history. This equates to five per cent of male respondents in each experimental arm and 2.1 per cent versus 1.4 per cent of female respondents. Perhaps the optimal approach is to identify non-resident parents across *both* sets of questions¹¹: among the 103 non-resident parents identified, only 56 (54 per cent) were identified under both question methods, with 19 (18 per cent) identified only in the fertility questions and 28 (27 per cent) in the living relative questions. Moving from the current UKHLS approach to also including non-resident parents identified via a set of fertility questions would increase the non-resident parent sample by 23 per cent (18/84).^{12, 13}

The second half of Table 11 provides a profile of the non-resident parents identified, overall and within each experimental arm.¹⁴ Although the sample sizes are small and none of the differences are statistically significant, there is tentative evidence of the fertility history approach identifying more non-resident parents with no or very infrequent contact with their children (30 per cent compared to 22 per cent in the living relatives arm). However, there are no differences in terms of the proportion paying child support.

¹¹ Given both are asked as standard (in a modified form) as part of the UKHLS each year.

¹² These figures include non-resident parents to biological, adoptive and step-children. Seventy-three non-resident parents of biological children were identified: 46 in both methods, 10 in the fertility method only and 17 only in the listing of living relatives.

¹³ Given the small numbers we have not analysed differences by mode or length of time in the panel.

¹⁴ These questions were asked at the level of each child, hence the base is all children with a non-resident parent.

Table 11: Identification of non-resident parents, by question set

	All (LR or FH)	Question approach	
		Living relatives (LR)	Fertility history (FH)
	%	%	%
Non-resident parent (biological, adoptive, step)	4.2	3.4	3.0
Biological non-resident parent	2.9	2.6	2.3
Adoptive non-resident parent	0.1	0.1	0.04
Step non-resident parent	1.3	0.9	0.8
Base: all respondents	2,475	2,475	2,475
Non-resident father (biological, adoptive, step)	6.1	5.0	5.0
Base: all male respondents	1,124	1,124	1,124
Non-resident mother (biological, adoptive, step)	2.5	2.1	1.4
Base: all female respondents	1,352	1,352	1,352
Profile of non-resident parent			
	years		
Average age (mean)	43.6	43.9	42.5
Very/quite close to child(ren)	79.8	80.7	79.4
Paying child support	50.0	50.4	51.5
In contact with their child(ren)			
Never	14.4	11.7	17.0
Few times a year	11.2	9.9	12.8
Once a month or less	8.0	7.2	8.5
Several times a month	8.0	9.0	7.5
About once a week	16.0	16.2	13.8
Several times a week	28.0	31.5	27.7
Almost everyday	12.8	12.6	10.6
50/50 shared care	1.6	1.8	2.1
Base: all children with a non-resident parent	138	121	103

Trialling questions on reasons for separation

We do not know enough about how reasons for separation affect later relationships and decision-making. Perhaps because of the sensitivities (or perceived reliability of reporting),

UK studies rarely collect these data, hindering our ability to understand variation in post-separation dynamics and outcomes. This means that we rely on (sometimes prospective, sometimes retrospective) data on the quality of the couple relationship in the period prior to separation as a proxy. However, our recent analysis of UKHLS shows the limited value of this approach, given that couples most likely to separate are *not* those with the worst responses on relationship quality (Benson and McKay, 2017). Clearly, the experience of the separation itself will be playing a major part in post-separation trajectories and outcomes.

The IP10 trialled questions which seek to understand the (perceived) reasons for the separation, and which partner led the decision-making, asking all resident and non-resident parents.¹⁵ We made use of the in-built experimental design to look at variation by mode and length of time in the panel. In developing the questions, we drew on a small number of studies which have collected these data: the DWP Survey of Relationship Breakdown (Wikeley et al. 2008) and the Millennium Cohort Study in the UK; the US Fragile Families Survey; and the Australian Longitudinal Study of Separated Families. Using a pre-coded list of responses, plus an opportunity to write in others, the questions read:

We know that relationship break ups can be difficult and happen for many reasons. Can you tell me the reasons why you separated or decided to live apart from [child(ren)’s] mother/father?

Which of these would you consider to be the **main** reason you separated or decided to live apart from [child(ren)’s] mother/father?

In your opinion, whose decision was it to finally end the relationship? Was it mostly yours, mostly your ex-partner’s or a joint decision (with options for ‘other’ and ‘don’t know’)?

Table 12 summarises the survey responses, split between mode and between those who are existing panel members and those new in IP10. Note that, in order to separate out the effects of mode and length of time in the panel, the mode comparison is based on existing panel members (who were randomly assigned to each mode) and the existing versus new panel member analysis is based on those responding in CAPI (as all new members completed the

¹⁵ The decision to restrict the question to separated *parents* was a practical one, given the trial was part of a wider experiment about separating parents. Should this question be included in the main UKHLS, we assume it would be asked of all separating couples, regardless of whether they have children.

survey via CAPI). In order to maximise the data, we show all reasons given for separation, rather than the main reason. Appendix Table A1 provides the full breakdown of responses. Here we have condensed the responses in two ways:

1. By type of issue
2. By whether the respondent attributes the reason for the break-up to themselves, their ex-partner or whether the reason is not attributed.

There is no definitive way of assessing whether the questions provide ‘valid’ data. Rather we have looked at the pattern of responses to make a judgement (e.g. proportion of refusals, don’t knows; the selection of more sensitive responses versus more general responses such as ‘grown apart’; selection of responses identifying themselves versus their ex-partner as ‘at fault’). Overall, most respondents were willing and able to answer questions on the reasons for their separation, with one in ten (nine per cent) separated parents choosing the ‘don’t know’ or refusal option. Although the most commonly used category (by 45 per cent of separated parents) reflected general dissatisfaction with the relationship (e.g. they had ‘grown apart’), substantial proportions chose potentially more sensitive responses (e.g. 38 per cent cited abusive behaviour and 20 per cent health or dependency issues). Perhaps most concerning, in terms of the potential validity of the data, is the low proportion (eight per cent) citing reasons that put themselves as the party at fault, compared to 50 per cent citing a reason involving the fault of their ex-partner.

Due to the potential sensitivity of the questions, we expected the self-completion mode to elicit more accurate responses than the face-to-face interview. Although there are few statistically significant differences in response patterns between modes, there are some non-significant indications that, in fact, CAPI elicits more, and more nuanced information than online, with greater proportions citing some of the more potentially sensitive reasons (e.g. nearly twice as many CAPI respondents mention health or dependency issues), which results in them being statistically significantly more likely to cite a reason putting their ex-partner at fault.

Our hypothesis regarding respondents’ time in the panel was ambivalent since a longer time may lead to better data if aided by higher levels of trust/buy-in to the study, or conversely it could be impaired by higher levels of social desirability among longer-term members. Here

the results are rather inconclusive. Although existing panel members are more likely to refuse to answer the question, they appear more likely to cite more sensitive issues and, in doing so, to cite their ex-partner as at fault.¹⁶

Table 12: Reasons for separation

	All	Mode (existing panel)		Existing or new to panel (CAPI)	
		CAPI	Web	New	Existing
	%	%	%	%	%
Don't know	3.0	0	5.8	0	0
Refused	6.3	8.1	7.1	2.8	8.1
Base: all separated parents	301	74	155	72	74
Reasons for separation, categorised					
Never in a relationship	7.3	4.4	8.9	7.1	4.4
General dissatisfaction with relationship	45.1	48.5	43.7	44.3	48.5
Money or financial problems	8.4	13.2	5.9	8.6	13.2
Family/parenting-related issues	27.1	38.2	18.5	32.8	38.2
Abusive behaviour	38.3	36.8	38.5	31.4	36.8
Health and dependency issues	20.2	27.9	16.3	20.0	27.9
Issues over sex/sexuality	7.7	11.8	6.7	5.7	11.8
Other reason	7.3	4.4	9.6	5.7	4.4
No reason	7.0	10.3	5.2	7.1	10.3
Average number of separate reasons	2.2	2.9	1.9	2.0	2.9
Base: all separated parents who have 1+ reason	273	68	135	70	68
Reasons by perceived 'fault' (categories not mutually exclusive)					
Fault of the ex-partner	50.2	64.7	46.7	42.9	64.7
Fault of the respondent	8.4	7.4	8.9	8.6	7.4
Non-fault reason	75.1	73.5	74.1	78.6	73.5
Base: all separated parents who have 1+ reason	273	68	135	70	68

Numbers in **bold red** are $p < 0.05$ on chi-squared test.

¹⁶ Further work is required to adjust for profile differences between existing and new panel members, with new panel members younger, on average, than existing panel members.

Table 13 shows the responses as to whose decision it was to end the relationship, with the sample split as per Table 12. Here, there are indications that respondents are reticent to say that their ex-partner controlled the decision to end the relationship, with only 16 per cent saying this compared to half (53 per cent) saying that it was their own decision. The optimal mode is unclear. While CAPI respondents are more likely than online respondents to refuse to answer the question (14.1 per cent compared to seven per cent), they appear more likely to report that their ex-partner was the decision-maker behind the separation (23 per cent compared to 13.5 per cent of web respondents). There is a similar pattern between new and existing panel members, with time in the panel increasingly the likelihood of refusing to answer the question (when asked in CAPI) but more likely to cite their ex-partner as at fault.

Table 13: Whose decision to end relationship

	All	Mode (existing panel)		Existing or new to panel (CAPI)	
		CAPI	Web	New	Existing
	%	%	%	%	%
Don't know	0.4	0	0	1.5	0
Refused	8.5	14.1	7.0	6.0	14.1
Base: all separated parents with a reason	281	71	143	67	71
Mainly respondent	53.1	63.9	48.1	53.2	63.9
Mainly ex-partner	16.0	23.0	13.5	14.5	23.0
Joint decision	21.5	8.2	24.8	27.4	8.2
Other	9.4	4.9	13.5	4.8	4.9
Base: all separated parents who have 1+ reason	256	61	133	62	61

Numbers in **bold red** are $p < 0.05$ on chi-squared test.

Conclusions and next steps

This paper describes our early findings, from which we conclude that the two methods in combination would improve the number and profile of non-resident parents identified in the UKHLS.

While it appears feasible to ask separated parents about the reasons for their separation, more nuanced work is required on the profile of respondents within each experimental arm before final conclusions can be drawn regarding the optimal approach.

d. Evaluating consent for linkage to the electoral register (Nicole Martin, Maria Sobolewska)

Motivation

Electoral registration and validated vote - where survey respondents self-reported turnout is checked against marked electoral registers - are key dependent variables in studies of electoral behaviour. Prior to the 2010 British Election Study (BES), survey respondents were not asked for consent to link to the register, as it is not legally required. However, a consent question was added in the 2010 BES and the 2010 Ethnic Minority British Election Study (EMBES), and has now become standard practice in the 2015 and 2017 face-to-face post-election BES. (The online-only British Election Study Internet Panel does not ask its respondents for consent, because data is provided by the polling company YouGov who have separate agreements with their respondents). This question has not been tested experimentally, arguably does not reflect researcher's true intentions for the linkage, and does not achieve high consent rates. 57% of BES respondents consented to linkage in 2015, and 52% of EMBES respondents in 2010. It is not known whether these response rates are low due to inherent concerns of respondents about linking to the electoral register, or whether the existing question is problematic. In addition, given the lack of legal barriers to linkage and the low risk to the survey respondent, it is possible that linkage to the electoral register would be a good candidate for opt-out consent.

The first aim of this experiment therefore is to investigate whether giving respondents an alternative and more truthful motivation when asking for consent to link to the electoral register changes the rate of consent. The existing reason given to respondents – that researchers would like to link information about whether they voted or not with turnout in the local area – is not the main motivation for linking to the electoral register. The main motivation is to validate self-reported behaviour – due to respondents misremembering or misreporting (sometimes due to social desirability bias), self-reported data is less accurate

than validated data. It is common practice to link individual survey data (including individual turnout & registration) to constituency turnout without individual's consenting to this linkage. It is important to ask then whether respondents still consent to their data being linked to information on the electoral register if they are aware of what truly motivates this linkage. The second aim is to assess whether opt-out consent is feasible and acceptable to respondents in the case of linking to the electoral register. This part of the study relies on data from IP11, where follow up questions will be asked of respondents in the opt-out condition (see below for full details of the study design).

Experimental design

Respondents were randomised at the household level in IP10 into 4 conditions which vary on (i) the motivation given for data linkage, and (ii) opt-in or opt-out consent. Those in the opt-out condition will be asked some follow-up questions in IP11 as to their recall of having received the letter prompting them to opt-out, their view on the acceptability as a method of gaining their consent this way, and their consent to linkage when explicitly asked for it again. This data will be analysed in the IP11 working paper.

Experimental conditions – reason for data linkage.

Due to a mistake in fieldwork procedures, the preambles and consent question are different across opt-in and opt-out conditions.

Condition 1 - BES 2015 question wording (opt-in):

We would like to link the answers you have given in this survey to other information about the proportion of people round here who voted. To do this we would like your permission to match your name and address to information held on the electoral register. This matching will only be done with information that is already publicly available, and will NOT include any information about who you voted for.

Would you be willing for us to add administrative data from the electoral register to the answers you have given us?

IF NECESSARY ADD No information about how you voted is stored anywhere your ballot papers are destroyed after the election.

Condition 2 - new wording (opt-in):

Some people who think they are registered to vote are actually not registered for one reason or another. We would like to link your name and address in order to find out how many people this applies to. To do this we would like your permission to match information held on the electoral register to you. This matching will only be done with information that is already publicly available, and will NOT include any information about who you voted for.

Would you be willing for us to add administrative data from the electoral register to the answers you have given us?

IF NECESSARY ADD No information about how you voted is stored anywhere your ballot papers are destroyed after the election.

For the two opt-in conditions, only the preamble varies – the question asked is the same. It is slightly different from the existing question in that the original question asks “Would you be willing for us to add administrative data from the electoral register to the answers you have given us *today*?” (italics not in original). We removed the reference to “today” because we will be linking it to information provided over multiple waves. For the two opt-out conditions, only the preamble varies – the question asked is the same for both opt-out conditions – though different from the opt-in wording (see below).

Experimental conditions - implementation of opt-in and opt-out consent

In the opt-in condition, respondents were asked these questions directly in the mode in which they responded. In the opt-out condition, respondents received an interwave mailing letter that included the paragraph “We would also like to link your name and address to the publicly available information on the electoral register and have enclosed a separate form about this”. The letter was accompanied by a form entitled “Request to link to the Electoral Register” with the interwave mailing, which varied in the preamble. They were asked to return a form via Freepost if they wanted to opt out of data linkage. The form asked respondents for their name, address, postcode, signature, and date.

Due to a mistake in fieldwork preparation, consent is asked for differently from the opt-in condition, along with the differences in preambles. This means that direct comparisons between opt-in and opt-out are more difficult to make. However, it will still be possible to evaluate respondents' perceptions of the acceptability of opt-out with future data from IP11.

Condition 1 – new wording A:

We would like to link your name and address to the publicly available information on the electoral register. Some people who think they are registered to vote are actually not registered for one reason or another. Linking to the electoral register data will help to find out how many people this applies to. No one can tell which party you voted for (if you did vote) – that information is not stored anywhere. If you are happy for the linkage to be done you don't need to do anything.

If you would like to opt out of this please complete the form below and send it back to us in the freepost envelope provided.

Condition 2 – new wording B:

We would like to link your name and address to the publicly available information on the electoral register. Recent changes to electoral registration might have led some people to drop off the register. Linking to the electoral register data will help to find out if this is true. No one can tell which party you voted for (if you did vote) – that information is not stored anywhere. If you are happy for the linkage to be done you don't need to do anything.

If you would like to opt out of this please complete the form below and send it back to us in the freepost envelope provided.

Table 14 summarises the experimental design as implemented.

Table 14. Achieved experimental design

		Opt-in or opt-out consent	
		Opt-in	Opt-out
Motivation for consent	BES consent question wording	x	
	New wording 1 – “some people who think they are registered to vote are actually not registered”	x	x
	New wording 2 – “recent changes to electoral registration might have led some people to drop off the register”		x

Results

Opt-in and opt-out consent rates

The consent rate in the opt-out condition was much higher; 6% of those in the opt-out condition chose to refuse the data linkage. In the opt-in condition, 75% gave their consent. Respondents who refused to answer the question or responded ‘don’t know’ were coded as refusing consent, as this is what those responses mean in practice. As few respondents chose these options however (12), they do not change any results when omitted.

It should be noted that responses for the opt-out are still arriving, so the final proportion of people opting out will be slightly higher.

Different justifications for asking for data linkage consent.

The analysis of changing the question wording is subdivided between opt-in and opt-out, because only one question wording option is consistent across opt-in and opt-out conditions. Table 15 shows that there is no meaningful difference in response rates in the opt-out condition between the two versions of the consent question. The difference is small and not statistically significant ($p=0.8$).

Table 15. Difference in consent rates between two alternate motivations for linkage among opt-out respondents

Wording	Consented	N
New wording 1 – “some people who think they are registered to vote are actually not registered”	95%	623
New wording 2 – “recent changes to electoral registration might have led some people to drop off the register”	94%	625

Table 16 shows that there is no meaningful difference in response rates between those asked the current BES consent question and those asked for consent using an alternative question. The difference is small and not statistically significant ($p=0.6$). There is no significant difference in the proportion of ‘don’t know’ or refusal responses between conditions, and these responses (12) are counted as refusing consent. The alternative motivation for linkage was chosen because it better reflects the true intention of researchers, for whom the main purpose on linking to the electoral register is checking the accuracy of self-reported behaviour (both registration and turnout). The lack of a difference in consent rates suggests that it is not the question which leads to low consent rates – rather, respondents are considering the merits of linking to the register itself. This would be consistent with the idea that respondents are making an informed choice to consent to linkage.

Table 16. Difference in consent rates between BES and new motivation for linkage among opt-in responses

Wording	Consented	N
BES consent question wording	75%	589
New wording 1 – “some people who think they are registered to vote are actually not registered”	77%	631

It is noteworthy that the consent rate in the IP10 opt-in sample (76% across both conditions) is considerably higher than that achieved in the BES. This might be due to panel conditioning whereby IP respondents are accustomed to being asked for their consent to data linkage in general and therefore more willing to give it, or attrition from the panel before IP10 of those who are unhappy about data linkage in general. Alternatively, it might be that asking for consent to link to the electoral register in a politics-focussed survey produces lower levels of consent than asking for consent in a generalist survey.

Conclusions

Linking survey responses and the electoral register is a core part of data collection in political science. This experiment shows that there is no difference in consent rates if the motivation for data linkage is changed to a more truthful one. This is encouraging for researchers of registration and turnout; survey respondents do not object to their data being linked for checking potential errors in their reporting. It also is consistent with the idea that consent to link survey data to information from the electoral register is driven by a consideration of the linkage itself, rather than being overly reliant on question wording. This view is supported by the additional finding that there is also no difference in the rates of opt-out consent between two alternate motivations. The second finding at this stage is that far fewer people opt out of consent than refuse their consent when they are asked to opt in. In the second wave of data collection, people in the opt-out condition will be asked again whether they consent to this data linkage, and in addition how acceptable they found opt-out consent. Although opt-out data linkage would produce much higher levels of linkage – and therefore much more accurate data for research - it remains to be seen whether it is acceptable to respondents, and whether high levels of consent remain when respondents are given a further chance to opt-out more easily.

e. Comparing static and dynamic grids (Tim Hanson)

Background

Grid format questions have been widely used in self-completion questionnaires, both paper and online, for many years. Grids are seen as an ‘efficient’ format, allowing multiple items that share the same response scale to be presented on the same screen or page. However, the recent growth in the proportion of respondents who complete surveys using mobile devices, in particular smartphones, poses challenges for the traditional (‘static’) grid format. The grid format can appear squashed on a narrow smartphone screen, presenting usability challenges for respondents.

This experiment compared static grids with a potential alternative: dynamic grids. The dynamic grid format presents respondents with one item at a time, rather than presenting all items on a single screen. The item appears at the top of the screen, in a box or ‘tile’, and the

response options appear underneath this. Once a response is selected for the item, the interview script automatically moves to the next item. This next item appears in place of the previous item, with the same response scale in place underneath.

Figure 3 shows examples of the static and dynamic grids presented to respondents at IP10.

Figure 3: static and dynamic grids																																											
Static grid	Dynamic grid																																										
<p>Test - v43</p> <p>In general, how concerned would you be about the security of financial information, such as your income and expenditure, that may be asked to provide in the following ways?</p> <table border="1"> <thead> <tr> <th></th> <th>Not at all concerned</th> <th>A little concerned</th> <th>Somewhat concerned</th> <th>Very concerned</th> <th>Extremely concerned</th> </tr> </thead> <tbody> <tr> <td>Face-to-face with an interviewer</td> <td><input checked="" type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Over the telephone with an interviewer</td> <td><input type="radio"/></td> <td><input checked="" type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>In a postal questionnaire</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Using a desktop computer / laptop to complete an online questionnaire</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Using a smartphone to complete an online questionnaire</td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input checked="" type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> <tr> <td>Using a tablet to complete an online questionnaire</td> <td><input type="radio"/></td> <td><input checked="" type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> <td><input type="radio"/></td> </tr> </tbody> </table> <p>< ></p> <p>Under Society</p>		Not at all concerned	A little concerned	Somewhat concerned	Very concerned	Extremely concerned	Face-to-face with an interviewer	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Over the telephone with an interviewer	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	In a postal questionnaire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Using a desktop computer / laptop to complete an online questionnaire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Using a smartphone to complete an online questionnaire	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	Using a tablet to complete an online questionnaire	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<p>Test - v8</p> <p>In general, how concerned would you be about the security of financial information, such as your income and expenditure, that may be asked to provide in the following ways?</p> <p>Using a desktop computer / laptop to complete an online questionnaire</p> <p>Not at all concerned</p> <p>A little concerned</p> <p>Somewhat concerned</p> <p>Very concerned</p> <p>Extremely concerned</p> <p><input type="radio"/> Don't know</p> <p><input type="radio"/> Don't want to answer</p> <p>< ></p> <p>Under Society</p>
	Not at all concerned	A little concerned	Somewhat concerned	Very concerned	Extremely concerned																																						
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Using a desktop computer / laptop to complete an online questionnaire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>																																						
Using a smartphone to complete an online questionnaire	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>																																						
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The experiment was included in two self-completion modules in the IP10 questionnaire: SF12 and Mobile Device Use. All respondents completing the survey by CAWI or CAPI were included in the experiment. At the start of each module, the script randomly assigned respondents with equal probability to one of the two grid formats: static or dynamic. This determined which format they were presented with in each module. The two allocations were independent, so respondents could get the same format in both modules, or a different format in each. The experiment covered four sets of items in the SF12 module (each comprising 2-3 items), and one set in the Mobile Device Use module, comprising six items. At the end of each module, respondents were asked how easy or difficult they found it to answer the questions based on the format used. Those who said it was difficult were asked an open follow up question to provide information on any issues they faced.

In the SF12 module, 1,174 respondents were allocated static grids and 1,232 were allocated dynamic grids. In the Mobile Device Use module, 1,205 respondents were allocated static grids and 1,195 dynamic grids.

Research questions

The experiment sought to answer the following questions:

- Does the change in format result in any difference in responses to the questions included in the experiment?
- Do the differences hold across all modes or devices, or are they distinct to particular modes/devices?
- Which of the two formats do respondents find easier to answer?
- Are there any differences in ease-of-use between modes/devices?
- Which of the two formats is quicker to administer?
- Is there a greater level of straightlining (selecting the same response to all items in a ‘set’) for one of the two formats?

Results

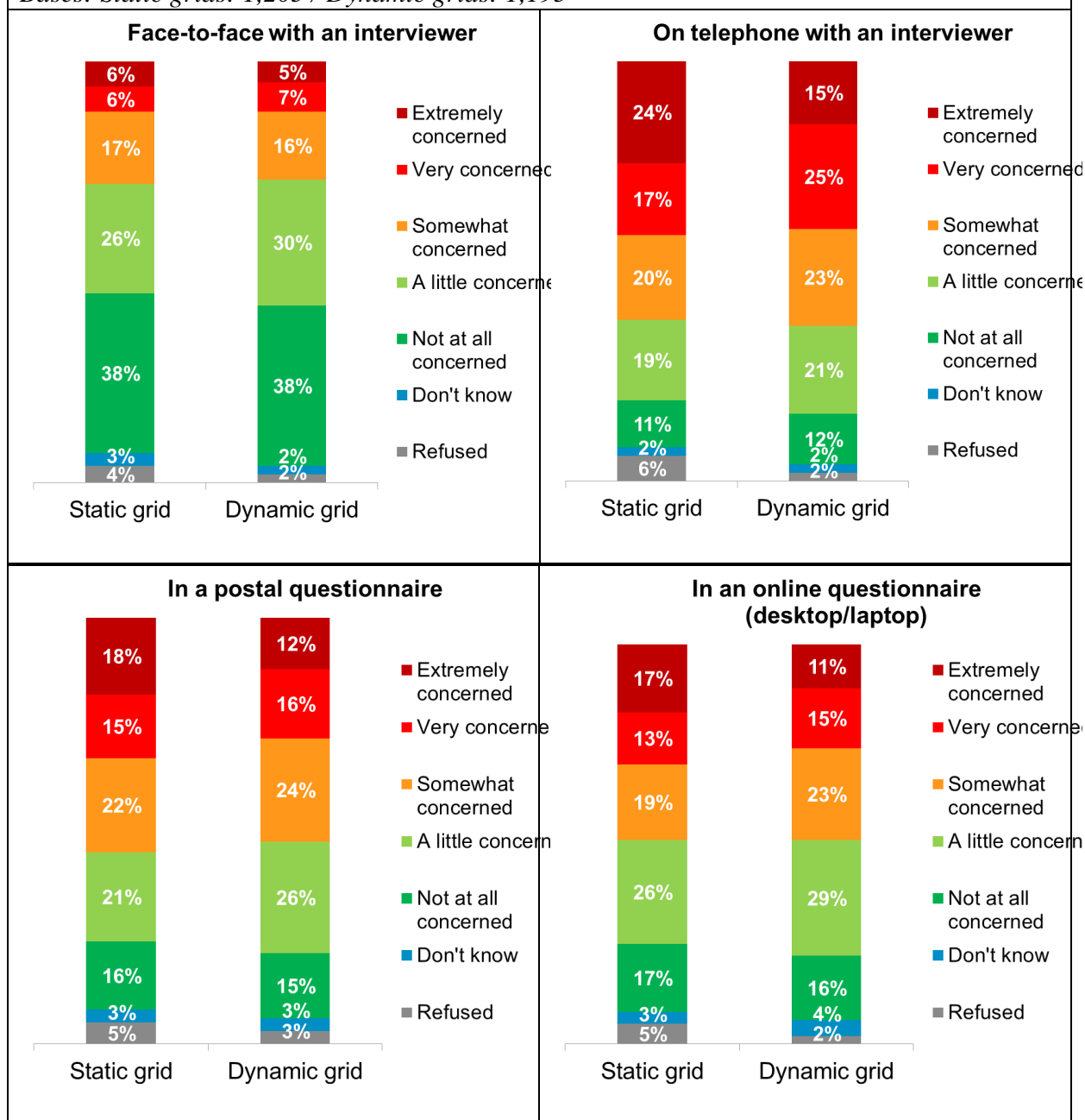
This initial analysis focuses just on the questions in the Mobile Device Use module. This comprised six statements to assess levels of concern with sharing financial information in surveys across different methods. We look at the following (for each, comparing the two grid formats):

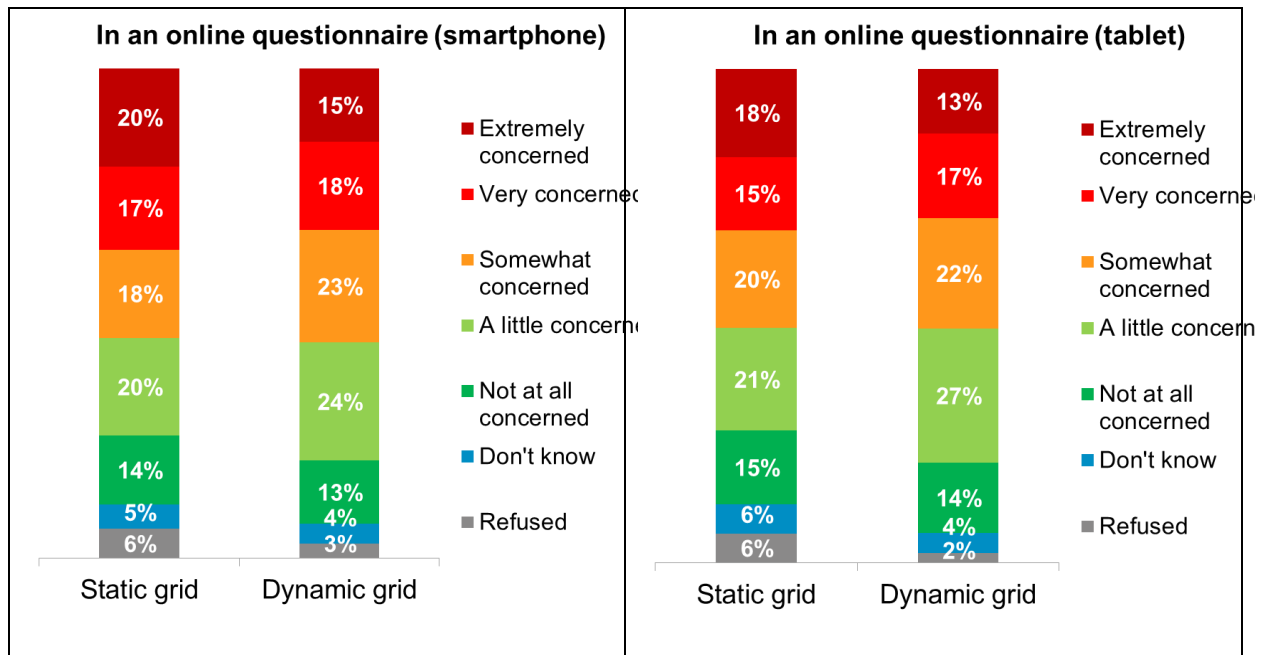
- Substantive responses to the items
- Reported ease of completion by respondents
- Levels of flatlining

Figure 4 shows responses to the six items broken down by the grid format.

Figure 4: Level of concern over sharing financial information in different ways

Bases: Static grids: 1,205 / Dynamic grids: 1,195



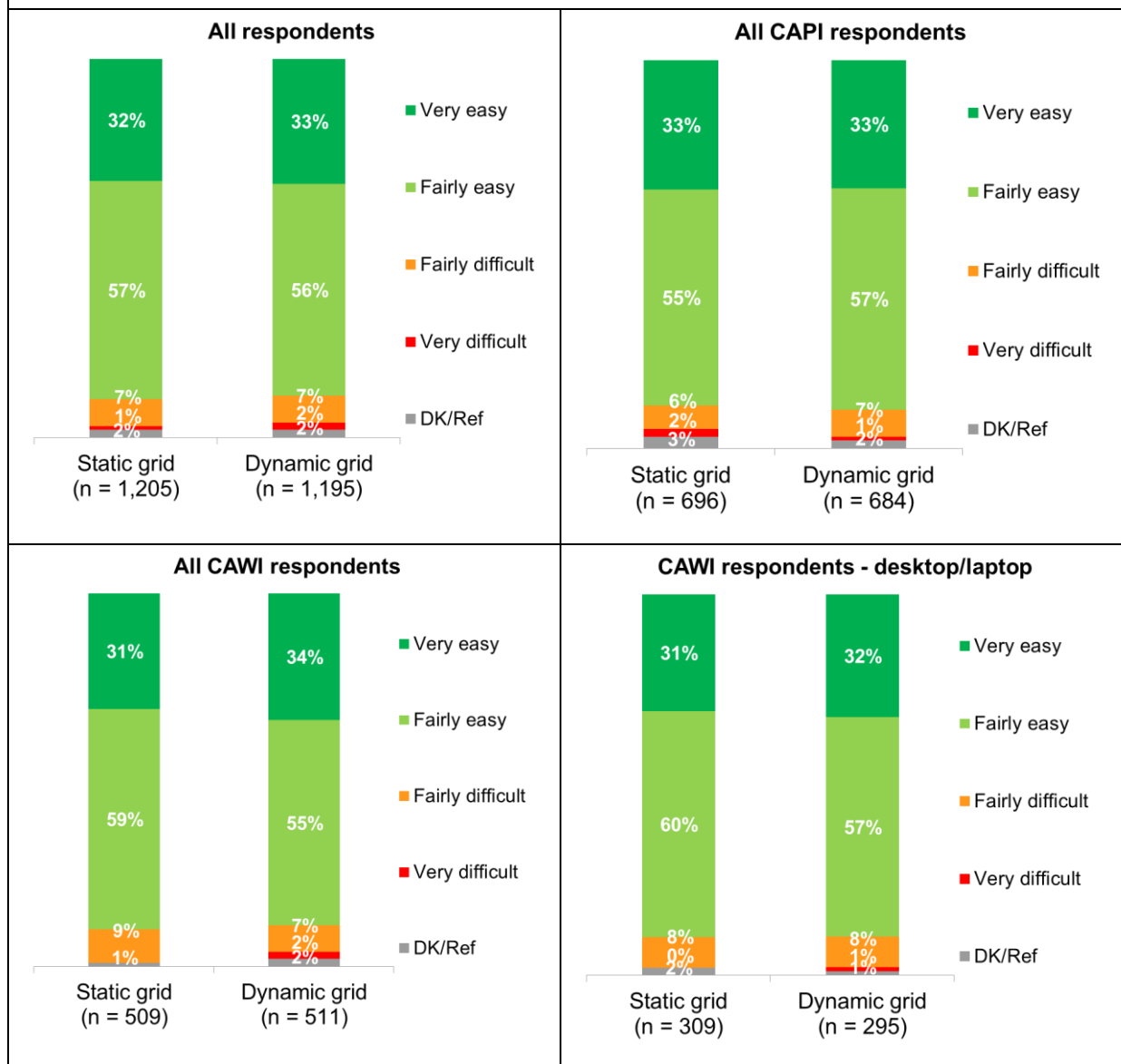


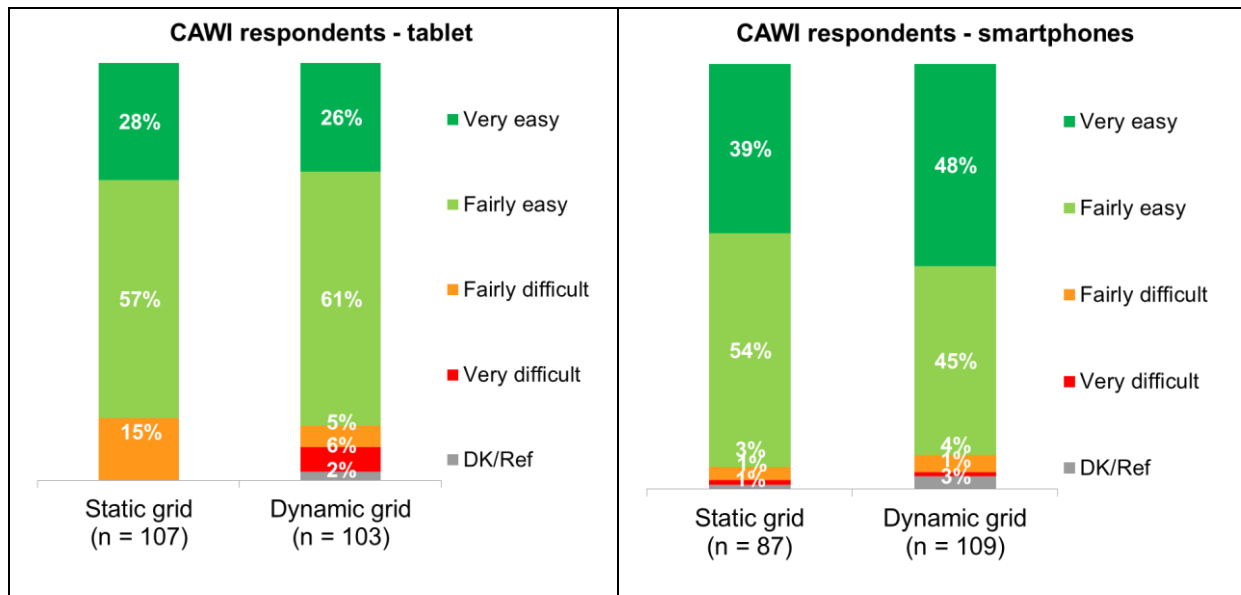
While the distribution of responses was fairly similar between the two formats, there were some differences. In particular, for five of the six items, a significantly greater proportion of respondents selected ‘extremely concerned’ when a static grid was used compared with a dynamic grid. The proportion selecting the ‘Refused’ option was also a little greater where static grids were used. These two response options were the ‘extreme’ options on the scale (i.e. the far left and far right hand responses for the static grid, and the top and bottom responses for the dynamic grid). This may suggest that the static format increases the likelihood of respondents selecting the extreme ends of scales. We would also note here that the orientation of response options differs between the two formats: horizontal for static grids and vertical for dynamic grids, and this may also have an effect. We will conduct further analysis but we will not be able to attribute these differences specifically to format or orientation. A follow-up experiment that attempts to separate this out is recommended.

Figure 5 compares the reported ease of completing these questions between those presented with the static and dynamic grids. Based on all respondents, responses were very similar, with around nine in ten finding each format very or fairly easy to use. Results were also similar when filtered on those completing on different modes or devices. Among smartphones users, a slightly greater proportion said that they found the dynamic grids very

easy to use compared with the static grids (48% versus 39%). However, the base size for smartphones was small, the difference is not significant, and it's clear that the vast majority of those presented with static grids also found this format easy to use, including on smartphones.

Figure 5: Ease of completing grids, broken down by mode and device





We also looked at the proportion of respondents to ‘straight-line’ at the battery of items in the Mobile Device Use module. By this we mean that they selected the same response to all six items. Straightlining is often seen as an indicator that respondents are less engaged in the survey and used as a measure of data quality.

Respondents completing the static grids were significantly more likely to straight-line (i.e. select the same response for all six items) than those completing dynamic grids (26% versus 18%). It may be reasonable to respond to all statements in this grid in the same way; if you are someone who is concerned with financial security you may be reluctant to share any financial information, regardless of the method. But of course this will be true for both formats, and so the higher level of straightlining for the static grid does seem notable. However, to more conclusively link straight-lining to data quality it would be useful to look at a broader set of attitude statements, with items indicating different and contradictory attitudes.

Next steps

In this document we have presented some initial findings from the IP11 experiment to compare static and dynamic grids. However, considerable further analysis is needed. This includes:

- Conducting the same analysis as included in this document for the grids in the SF12 module
- Looking in more detail at the number of significant differences between the formats and the direction of these differences
- Looking at any differences in substantive response to items by mode of completion and device used, while controlling for any characteristics that predict the response as well as device selection
- Looking at open responses among those judging each format difficult to complete to identify any specific issues
- Comparing the time taken to complete each grid between the two formats
- Looking at the straightlining results included here in more detail
- Looking for any evidence of ‘learning’: e.g. did respondents who used dynamic grids in both modules say they found them easier the second time around?
- Comparing the demographic profile of the static and dynamic grid groups at each module and considering whether weighting is required to minimise any differences within device.

f. Twitter Linkage Consent (Tarek Al Baghal, Curtis Jessop, Luke Sloan)

Surveys have suffered from a gradual decline in response rates (Groves et al. 2009). These problems affect longitudinal surveys as well, where initial response rates have fallen, although wave-on-wave response rates have generally remained relatively high (Schoeni et al. 2013). However, even when wave-on-wave response rates are relatively high, the cumulative attrition can increase the chance of nonresponse errors. In addition to the problem of unit nonresponse, those that do participate may not respond to all items, which can be particularly problematic in panel studies, where missing items cause breaks in trend data.

Methods to correct for both unit and item nonresponse use weighting and imputation relying on other obtained measures. These measures can include neighborhood characteristics, interviewer observations, and proxy measures for survey variables (Brick 2013). For successful adjustment, these measures must be correlated to the probability of non-response and the concepts measured. Usually only limited information is available for nonrespondents and the correlations with

measured concepts weak (Brick 2013). There is therefore a continuing need to find new data sources that could improve these methods.

In light of some of the issues surveys face, several studies argue that sources such as Twitter can substitute or supplement surveys in light of issues such as nonresponse (O'Connor et al. 2011; DiGrazia et al. 2013). However, social media data are frequently used at the macro-level, and do not provide the breadth of understanding supplied by micro-level data. This may be particularly problematic for longitudinal studies where understanding micro-level change is a key goal. Rather, given the increasing problems with nonresponse in surveys, and the popularity and potential uses of data from social networking sites, adding social media to survey data is an attractive, but to date, little used possibility (AAPOR 2014).

Obtaining and linking survey respondents' social media to their survey responses could add to the richness of the data available, and be used in improving measures and methods for non-response adjustment. For example, answers to survey questions can be predicted to an extent by social media data (Murphy et al. 2013). This ability to predict suggests the potential for non-response adjustment, as is being done with other linked administrative data such as health records (Gorman et al. 2014). Further, social media data can add information about nonrespondents and be used to understand the possible extent of nonresponse bias (AAPOR 2014). However, before any linkage between survey and social media data can be done, respondents must first consent to this linkage and provide their social media identifier.

This study explores the feasibility to link Twitter social media data to survey responses by analyzing the initial and crucial component, consent. Early in the survey, the IP asked respondents if they had a Twitter account. If they did, they were asked the following consent question:

We would like to know who uses Twitter, and how people use it. We are also interested in being able to add people's answers to this survey to publically available information from your Twitter account such as your profile information, tweet content, and information about how you use your account. Your Twitter information will be treated as confidential and given the same protections as your interview data. Your Twitter username, and any information that would allow you to be identified, will not be published without your explicit permission. Are you willing to tell me the name of your

personal Twitter account and for your Twitter information to be linked with your answers to this survey?

A number of help screens were linked such that interviewers had further information to respondents or web respondents could click a link so this information opened as a text box on the screen. Information about what will be collected from their Twitter accounts, how the data will be used, who will have access to the data, and information about data security were all provided.

If they indicated they consented to this linkage, respondents were then asked for their Twitter username. Given the possible differences in types of respondents across modes in regards to Twitter use and view towards security of data on the web, analyses are broken down by mode as well as overall. Due to data security processes, analyses of Twitter usernames and collecting actual Twitter data has not yet happened, so only having an account and consent to linkage are analyzed. Table 17 shows the percentage of respondents indicating having a Twitter account.

Table 17. Twitter Accounts by Mode and Overall.

	Has Twitter Account
CAPI	17.5% (n=252)
Web	25.3% (n=261)
Overall	20.7% (n=513)

Perhaps not surprisingly, web respondents are more likely to report having those responding via CAPI. However, Table 18 below shows that consent to linkage (only among those indicating having a Twitter account) is significantly higher among CAPI respondents. There is almost a 20% difference between the two modes. This mode difference is a novel finding in consent research, which has been suggested as a possible influence generally on consents, but little has been done empirically to date (Eisnecker & Kroh 2017).

Table 18. Twitter Consent by Mode and Overall.

	Consent to Link
CAPI	42.9% (n=108)
Web	24.1% (n=63)
Overall	33.3% (n=171)

Further work will also explore the ethics and practicalities of linking social media and survey data arising after consent has been granted. In particular, to link the survey data, the respondent needs to give their Twitter handle. Twitter handles or verbatim tweets linked to survey data make the survey data identifiable to the individual, removing anonymization. We will document these issues both for purposes of transparency in this project, but also to assist future research and contribute a new stream to a developing literature on the ethics and practicalities of conducting social media research in social science. We aim to address possible issues of consent, anonymity and confidentiality in a practical manner that protects respondents but enables research, for instance through ensuring ISO accreditation of data users, bespoke confidentiality agreements, non-networked data access, cut-down data sets and trusted third-party matching. Our conclusions will help to inform the wider research community in survey research, data-linkage, and social media research.

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Appendix: Table A1: Reasons for separation: full breakdown

	All	Mode (existing panel)		Existing or new to panel (CAPI)	
		CAPI	Web	New	Existing
	%	%	%	%	%
Don't know	3.0	0	5.8	0	0
Refused	6.3	8.1	7.1	2.8	8.1
Base: all separated parents	301	74	155	72	74
Never in a relationship	7.3	4.4	8.9	7.1	4.4
General dissatisfaction with relationship	45.1	48.5	43.7	44.3	48.5
Grown apart	33.0	41.2	28.9	32.9	41.2
Lack of communication/did not talk	18.0	29.4	14.1	14.3	29.4
Different expectations	19.4	30.9	15.6	15.7	30.9
Money or financial problems	8.4	13.2	5.9	8.6	13.2
Family/parenting-related issues	27.1	38.2	18.5	32.8	38.2
Pregnancy/birth of child	3.3	7.4	0.7	4.3	7.4
Disagreement over parenting issues	10.6	14.7	5.2	17.1	14.7
Ex-partner did not give enough time to family	17.2	27.9	14.8	11.4	27.9
Respondent did not give enough time to	0.7	1.5	0	1.4	1.5

family					
Abusive behaviour	38.3	36.8	38.5	31.4	36.8
Ex-partner found someone else/adultery	20.5	19.1	22.2	18.6	19.1
Respondent found someone else/adultery	1.5	0	2.2	1.4	0
Ex-partner's violent/abusive behaviour	9.2	11.8	11.1	2.9	11.8
Respondent's violent/abusive behaviour	0.7	0	0.7	1.4	0
Ex-partner's emotional abusive behaviour	13.2	19.1	10.4	12.9	19.1
Respondent's emotional abusive behaviour	0	0	0	0	0
Ex-partner's sexually abusive behaviour	1.8	1.5	2.2	1.4	1.5
Ex-partner's financially abusive behaviour	6.2	5.9	6.7	5.7	5.9
Respondent's sexually abusive behaviour	0	0	0	0	0
Respondent's financially abusive behaviour	0	0	0	0	0
Health and dependency issues	20.2	27.9	16.3	20.0	27.9
Respondent's alcohol/drug problems	0.7	1.5	0.7	0	1.5
Ex-partner's alcohol/drug problems	9.5	11.8	8.9	8.6	11.8
Respondent's mental health/emotional issues/depression	5.1	5.9	5.2	4.3	5.9
Ex-partner's mental health/emotional issues/depression	8.1	17.7	3.7	7.1	17.7
Issues over sex/sexuality	7.7	11.8	6.7	5.7	11.8
Lack of sexual relationship	7.3	10.3	6.7	5.7	10.3
Respondent is gay/lesbian	0.4	0	0.7	0	0
Ex-partner is gay/lesbian	0.4	1.5	0	0	1.5
Other reason	7.3	4.4	9.6	5.7	4.4
No reason	7.0	10.3	5.2	7.1	10.3
Reasons by perceived 'fault' (not mutually exclusive)					
Fault of the ex-partner	50.2	64.7	46.7	42.9	64.7
Fault of the respondent	8.4	7.4	8.9	8.6	7.4
Non-fault reason	75.1	73.5	74.1	78.6	73.5
Base: all separated parents who have 1+ reason	273	68	135	70	68

Numbers in **bold red** are $p < 0.05$ on chi-squared test.