

## REDUCING UNIT NON-RESPONSE IN INTERVIEW SURVEYS

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### INTRODUCTION

The topic of this paper is unit non-response in interview surveys, that is the failure to obtain any information at all from some members of the sample. Although I will concentrate upon face to face surveys some of what I have to say relates to mail and telephone surveys too.

Methodological work which has been carried out on non-response can be categorised as follows:

1. The effects of different aspects of the survey and its methodology upon the level and composition of non-response.
2. Patterns of non-response over time, space and between different 'General Survey Climates'.
3. Methods of maximising response e.g. by improved interviewer training, tighter control over interviewer calls, use of respondent incentives.
4. Examination of the differences between non-respondents and respondents using
  - a) external data sources such as the Census or Ratings Lists, or
  - b) data internal to the survey when several waves of the survey have taken place or when recalls are used.
5. The effects of the differences between non-respondents and respondents upon the survey results and analyses.
6. Modelling response with the aim of minimising and correcting for non-response e.g. probability models, imputation models, recall procedures.

Although we plan that, in the long term, our research should range over all these categories, initially we are concentrating upon ways of improving response rates. This encompasses research on the efficiency of interviewers' calling patterns, methods of increasing the productivity of 'reissues' and examination of the success of different types and style of doorstep introduction.

### DESIGN OF THE METHODOLOGICAL SURVEY

We began our current programme of methodological research on non-response by building several experiments into an attitude survey on "Issues which are important in Britain today". The survey sample consisted of 864 addresses drawn from the Electoral Register. Twenty-four of Social & Community Planning Research's interviewers were deliberately chosen to represent different levels of experience. The survey was conducted in 4 city areas. Within each of these areas 6 interviewers were assigned a sample of 36 addresses each, the 6 assignments being interpenetrated across 6 polling districts. The result is a balanced nested design with 4 groups of 6 interviewers each as shown in figure 1 below.

Figure 1: Design of Methodological Survey

864 Households in 4 areas -

in each area:-

6 interviewers each allocated  
6 households in each of  
6 polling districts

this is a nested design with 24 interviewers and 24 polling districts.

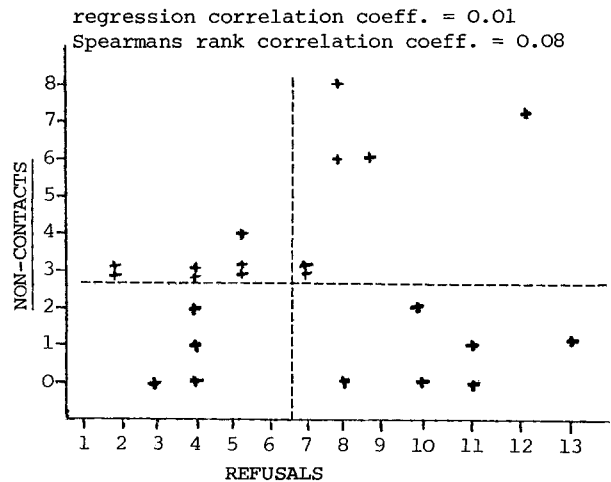
### RESPONSE RATES & PATTERNS

The overall response rate was 67% of the total issued sample. 72% if we discounted empty addresses and those people unable (through old age, language difficulties etc.) to take part. This is about par for the course for a survey in city areas on an unspecific topic.

Response rates varied considerably between interviewers - from 44% to 89%. We carried out a conventional analysis of response rates by interviewer characteristics but the results are not very surprising, for example the more experienced and older interviewers obtained higher response rates. What is surprising is the lack of a simple relationship between an interviewers' non-contact and refusal rates, as illustrated in the scattergram (Figure 2).

We are currently examining the relationship between interviewers' non-contact and refusal rates on a range of surveys to see if the lack of correlation between them is replicated. At the same time we are assessing the consistency of interviewers' response rates. Does it make sense to talk in terms of interviewers who are good at obtaining response? Are some interviewers better at obtaining response to some types of surveys? To attempt to answer these questions, and other

Figure 2: Relationship between the Interviewers' Refusals & Non-Contacts



similar ones, we have drawn up a file containing response information by individual interviewer for all surveys carried out by SCPR over the last five years. We have included in the file a profile of each individual interviewer (such as age, sex, interviewing experience) as well as details of each of the surveys, together with the relevant non-contact and refusal information.

IMPROVING CALLING STRATEGIES

In all surveys there is likely to be a small minority of very elusive households. If a sufficiently high priority and sufficient resources are assigned to the task it is possible to reduce the non-contacted part of the sample to a very tiny proportion of the total sample. However the effort devoted by fieldworkers to achieving contact with these people must be subject to the overall survey priorities. It may not be worth reducing non-contacts to the detriment of other important survey tasks which the interviewer ought to be carrying out. Similarly the marginal cost of reducing the proportion of non-contacts below a certain percentage is not justified. The costs of contacting the last few sample members will often be disproportionately high.

The residue of non-contacted sample members will generally consist of some who would normally be contactable but happen for particular reasons to be away from home during the period of the survey and others whose normal way of life makes them inherently hard to contact. However if the non-contacts consisted only of these two categories we would expect the non-contact rate to vary by area but not by interviewer. The nested sample design of our methodological survey enabled us to separate interviewer effects upon the non-contacts from area effects. In fact we found an interviewer effect as shown by table 1 below. Although the polling district effect is small, we have a polling district/interviewer interaction which is significant at the 1% level.

Table 1: Analysis of Variance for Non-Contacts

	Sum of Squares	Degrees of Freedom	Mean Square	F	% Significance
Between areas	0.4	3	.14	1.1	n.s
Between interviewers within areas	6.3	20	.31	2.4	0.1
Between polling dists. within areas	3.7	20	.18	1.4	n.s
Interviewer/polling dist. interaction	26.9	100	.27	2.1	0.1
Residual	94.4	720	.13		
TOTAL	131.6	863			

If we partition the polling districts and the interviewers on the basis of the non-contact rate we see that a 'bad' interviewer in a 'bad' area is five times as likely to get a non-contact as a 'good' interviewer in a 'good' area.

Figure 3: Average Non-Contact Rates

	GOOD INTERVIEWERS	BAD INTERVIEWERS
GOOD AREAS	6%	19%
BAD AREAS	16%	32%

Our first explanation for this was differences in diligence or persistence between interviewers. However there was no evidence to support this explanation - interviewers who had lower non-contact rates were not calling more frequently. Analysis of non-contact rates by interviewer characteristics indicated that interviewers who were employed in other full time jobs (i.e. in addition to interviewing) had the lowest non-contact rates. These results suggest that it is not maximum availability which is important but the times when the interviewer works. Those interviewers with no other work commitments made a large proportion of their calls during the day-time in the week, when only a small proportion of respondents were at home and consequently they had lower 'strike' rates. Interviewers with lower availability were calling at times when respondents were more likely to be at home, such as weekends and evenings. Perhaps an additional factor is that the latter interviewers were more aware of the need to make efficient use of their time so they planned their calls in a logical order and at times most likely to result in a productive outcome.

A major focus of our research is concerned with the efficiency of call back procedures. In our methodological survey, only one fifth of first calls resulted in an immediate interview. A paper by Weeks et al has shown that, in the USA, there has been a substantial downward trend in the proportion of adults at home during the week. Both this paper and one by Steeh show that this trend is particularly pronounced in inner city areas. The recent Market Research Society Co-operation Working Party in Great Britain found that although there may not be an overall increase in failure to make contact with preselected individuals, an increased effort is required to find people at home.

Weeks et al stated that, apart from a slight peak at noon, the odds at finding someone at home on a weekday were less than even before 3.00 pm and the best times were late afternoon and early evening.

These are very similar results to those obtained on our methodological survey as given in Table 2 overleaf.

However it may not be sufficient to estimate the probability of contacting a household at any particular time, it may also be necessary to be able to estimate the probability of an interview being given at that time. Obviously if everyone had a constant propensity to participate irrespective of when they were contacted then we would only need to use the 'contacting probabilities', but there are indications that the refusal rate per contact is variable - we have found it to vary from a negligible rate to over 40%. One of the difficulties in interpreting these data is that we know very little about the confounding variables - for example people who are contacted on Sunday afternoons probably differ from those who are contacted on Tuesday mornings. What we really wish to know is whether, for example, those people who were contacted on Tuesday morning would have responded had we contacted them on Sunday afternoon.

We are acutely aware of the limitations of our results since they are based on a small survey

conducted in only a few areas. We have, therefore, set up a system to collect, code and punch this information routinely on all surveys conducted by SCPR, and we hope very shortly to be able to calculate contact and refusal rates by time of call and number of calls for a range of surveys.

Table 2: Contact Rate for Sampled Household by Day of Week and Time of Day

	Mon	Tue	Wed	Thurs	Fri	Sat	Sun
	%	%	%	%	%	%	%
Morning (up to 11.59)	50	58	55	48	46	70	100
Lunchtime (12.00 - 13.59)	47	44	52	56	47	76	83
Afternoon (14.00 - 16.29)	74	56	53	39	56	56	70
Teatime (16.30 - 18.29)	78	59	67	80	55	100	83
Evening (18.30 - 20.00)	92	81	100	86	71	*	*

\*base too small to use the data

(The figures in this table should be used with some caution since the sample consisted of only 864 addresses and so the base figures are small)

In the longer term we plan to relate the characteristics of respondents to the number of calls made to achieve their response, in order to examine the use of the number of calls in weighting adjustments for non-response.

This research has two main aims: obviously we would be extremely pleased if we could reduce the non-contact rate, particularly by eliminating the interviewer effect on non-contact rates. The other satisfactory outcome would be a reduction in the number of calls required to obtain a contact.

There are a number of ways in which we might achieve these aims:

- We might alter the interviewer recruitment policy: conventional survey wisdom argues for recruiting interviewers with maximum availability but perhaps a better strategy is to require availability at specific times, especially evenings and weekends.
- We hope to devise methods of identifying interviewers who have inadequate calling patterns in order to give them further training.
- Classifying interviewers' calling patterns would also help in determining an efficient reissuing policy.
- Providing feedback to interviewers on the optimum times to find different types of people at home. Indications are that interviewers are very receptive to this type of information. They are aware of the fact that greater productivity raises morale. It can be very demoralising for an interviewer to have to keep returning to the same address and she may give up because she feels conspicuous or feels that she is pestering.

- The research may lead to greater control being exercised over the interviewers' calling patterns. Currently SCPR interviewers are instructed to call at addresses a minimum of 4 times on different days of the week and at different times of day, but to call more than 4 times if it does not involve a long journey. We hope to experiment with placing greater restrictions upon the interviewers' calls.

#### IMPROVING REISSUING PROCEDURES

One promising way of reducing the non-response on surveys is to increase the productivity of re-issued sample members (by 're-issued' I mean a non-response which is allocated to a second interviewer with the aim of converting it to a response).

The present procedure at SCPR is to reissue non-respondents on grounds of low cost (i.e. there is a second interviewer nearby who has been briefed on the survey) or because there are worries about the low quality of work of an individual interviewer. An analysis of over 40 projects conducted by SCPR in the 1970s shows that, of the addresses re-issued to a second interviewer, an average of half of the original non-contacts and 4 out of 10 of the original refusals were successfully reinterviewed. The overall response rate on some projects was raised by as much as 6 percentage points.

It has been suggested, above, that identification of interviewers with inadequate calling patterns could be useful in determining a re-issuing strategy. It would be useful to have a comparable method of assessing refusals in order to determine the ones most likely to be converted. The limited evidence available from other research has suggested that a large proportion of refusals are situational - the result of an interviewer calling at an inconvenient time rather than a reflection of an underlying anti-pathology towards surveys.

Since the usual reissuing policy at SCPR is selective, being concentrated in the weakest sampling points, and amongst those refusals thought to have the greatest chance of conversion, it was of limited methodological interest. So we decided to recall upon all the non-respondents on the methodological survey, in order to obtain a crude estimate of the level of situational non-response. Very experienced interviewers carried out the recalls within a few weeks of the original call. They obtained some information from 77% of original non-contacts and 82% of refusers. The majority (55%) of the non-contacts said they would have been happy to participate in the survey. A further 11% said that they might do so and the interviewers felt that a few of the remainder could have been persuaded to take part. Only a very tiny proportion of them voiced criticism of, or worries about, surveys.

The non-contacts were not necessarily people who are rarely at home. We asked whether, if an interviewer had called in the previous week she'd have found anyone in at a selection of four times. As many as 56% claimed that contact would have been made 3 or 4 of the selected times - a further indication of the need for optimal calling strategies.

A full follow up interview was obtained with

55% of those who had previously refused to take part in the survey. We can assign the refusers according to our assessment of their willingness to take part in future surveys.

Table 3: Follow-up of Refusers

22%	Yes, would participate
21%	Yes, might participate
9%	Follow-up interviewer thinks they could be persuaded
14%	Refusal was specific to this survey; might take part in another survey
20%	No, would not participate
13%	Insufficient information to classify

A surprisingly high proportion fall into the first group - 22%. Most of these people insisted that they had not refused to take part in our survey. A typical explanation was that the interviewer had simply called at an inconvenient time and that she did not indicate that she would be willing to call back at a more convenient time.

There was little incidence of refusal on principle. At the most there are various gradations of inclination not to reply. We have not found anything to bear out the view that there is a predominant refuser category - there seem to be a mass of different reasons often interacting, behind a refusal. Frequently, these refusals are bound up with the specific personal situations.

Roger Thomas writing of the experience of response rates at OPCS states that "experience suggests that, if they are adequately motivated, most individuals are able to find time to co-operate in interview surveys, though the small (but possibly increasing) proportion of individuals who refuse on principle to participate in surveys of any kind presents an intractable problem."

Our problem remains: how do we distinguish those people worth revisiting from those who are extremely unlikely to take part? Perhaps the most obvious way is to instruct the interviewers to record the reason for refusal and to make a subjective judgement regarding reissuing based upon this reason. We have taken this approach one step further; we are involving the interviewers in making this subjective assessment. Thus interviewers are asked to record, for each refuser, how likely it is that they would participate if a different interviewer called back in a few weeks. The first indications are that selective reissuing on the basis of interviewers' assessments is preferable to random reissuing and we plan to continue experimenting with this procedure.

#### DOORSTEP INTRODUCTIONS

The variety and mixture of factors operating when people make up their minds to co-operate or not in an interview survey shows how important it is that the interviewer should be able to adapt her introduction to the specific respondent. It is not easy however to investigate the relationship of doorstep introductions to the response rates.

The presence of an observer is likely to affect it.

After careful consideration and piloting we decided that the best method would be for the interviewers to use cassette recorders. In the course of our survey eight interviewers each recorded 12 introductions - of these introductions 20 led to a refusal and 76 to a successful interview. Members of the public were asked retrospectively if they had any objection to our retaining the recording but no one did. On one or two occasions the interviewer erased the tape recording as she was not able to ask permission.

Four of the eight interviewers felt that their behaviour had been modified mainly by becoming more formal but they also reported that they quickly lost awareness of the tape recorder. Certainly the variations in adherence to standard procedure suggest that the tape recording did not constrain interviewers too greatly!

Our analysis is focussing upon differences in the content and length of introductions. We have drawn up a list of the concepts an interviewer might use and have carried out a content analysis of the tape recorded introductions. We have found substantial variation between interviewers. Individual interviewers tend to follow consistent patterns. One interviewer will almost invariably use only two or three concepts whilst another will use nine or ten. There is no simple relationship between the number of concepts used and the response rate - those interviewers with markedly high response rates used very different numbers of concepts. We are surprised at how little an interviewer needs to say before the potential respondent decides whether to take part.

Interviewers were provided with a suggested introduction but were free to adapt it to their own requirements. None of them chose to use the introduction in the exact form given but all of them appeared to be using their own standard introduction at least initially. Thus the interviewers are fairly consistent in the particular concepts they choose to mention. For example only two of the interviewers explained the confidentiality procedures used on the survey and one of these interviewers did so in a large proportion of her introductions. There is some evidence that response is related to the flexibility of the interviewer's approach: the interviewers who adapted themselves more readily to the particular needs of the respondent obtained a higher response than those who always used the same introduction.

We have classified each of the introductions according to whether any reluctance was shown on behalf of the respondent and how firmly such reluctance was expressed. Interviewers with lower refusal rates encountered markedly less reluctance, indicating that their higher response was due not only to successfully countering reluctance but also to forestalling it.

There is some evidence that interviewers who offer, spontaneously, to recall at another time get higher response rates. The previous discussion about the situational element in non-response is relevant here: it may be easier to change negative motivation to positive motivation if one can identify potential non-respondents before they become effective non-respondents.

dents.

In addition to examining the length and content of introductions we are also assessing the interviewers' styles - their speed of talking, their coherence, their reaction to respondents' questions and their formality. Our aim is to identify the specific social skills required of an interviewer in this part of her job.

It was immediately apparent from the tape recordings that the interviewers need more guidance in their behaviour when someone first refuses. The tape recordings show that some interviewers are completely 'non-plussed' when this happens. There is an inherent conflict in the instructions we give to an interviewer regarding pressing for response - we instruct her that she should do her best to persuade reluctant respondents to take part (we may even reward her good response rate in the payment or interviewer grading systems). But at the same time we instill in her the principle that everyone has the right not to take part in the survey. Perhaps we should not be surprised that the interviewer sounds confused when someone refuses! We have held a discussion with a group of experienced interviewers on the issue of providing guidance to interviewers in countering refusals and we are using material from this discussion and from the tape recordings in order to develop strategies for interviewers to follow in specified circumstances.

I have described just a few of the ways in which the tape recordings of introductions have provided material for a useful analysis of an aspect of interviewers' work which has not previously been studied. It has already increased our understanding of the processes involved and is making a useful contribution to the techniques of training interviewers.

#### REFERENCES

- Bergman L., Hanve R., & Rapp J. "Why do some people refuse to participate in interview surveys". *Statistisk Tidskrift* 1978: 5.
- Steeh C.G., "Trends in non-response rates in 1952-1979". *Public Opinion Quarterly* Vol.45 1981
- Thomas R.K., "Non-response on household surveys". *OPCS Survey Methodology Bulletin* No.10, April 1980.
- Weeks, Jones, Folsom & Benrud "Optimal times to contact sample households". *Public Opinion Quarterly* 1980.
- Report of the second Working Party on respondent co-operation. *Journal of Market Research Society*, Vol. 23, No.1 January 1981.