A Comparative Study of Field and Office Coding

Martin Collins and Gill Courtenay[1]

Abstract: This paper presents results from a comparative study of field and office coding of responses to open questions. The results illustrate the limitations of field-coding and suggest that the practice should be treated with caution. They do not, however, support some hypotheses and assumptions concerning the effects of the method on response distribution.

Key words: Coding; field-coding; open questions.

1. Introduction

The accepted approach to open questions is that the interviewer should record responses verbatim. The conversion of the responses into an analysable coded form is a subsequent clerical stage, conducted "in the office." We will refer to this approach as "office coding," despite the fact that, in some survey operations, the bulk of the work may be done in the coder's own home.

The distinguishing features of office coding are as follows. The coding frame – the list of codes and the responses assigned to them – is drawn up from an inspection of the responses actually received. The responses are also available as guides when coders are briefed on their task. The task of coding is carried out away from the stresses of the interview situation, and each coder has access to a supervisor and to other coders in order to solve problems. In the field, both interviewer and respondent are unaware of the frame into which responses will be coded. They are free

[1] Social & Community Planning Research, 35 Northampton Square, London, EC1V OAX England.

jointly to determine the type and detail of response to be given.

The alternative that we have examined is field-coding. The question is still asked in an open form and the respondent's task is not intended to be affected. But a check-list of pre-coded responses is provided for the interviewer. The coding process is thus transplanted in time and space: the frame and instruction in its use precede the availability of the data and the coding is conducted during the interview.

Field-coding has clear limitations arising from the need to prespecify the coding frame, usually on the basis of previous use of the question, but sometimes merely on the basis of hunch. There will be occasions when this can not be done, and others where the classification of responses will prove to be inappropriate. In principle, however, the approach should be less final than the fully closed question, in that interviewers are instructed to record verbatim answers outside the range of the frame or answers which they find difficult to assign to a code.

In commercial research surveys, field-coding is quite often adopted in attempts to save time or money. The technique is, however, dis-

missed as bad practice in many writings on survey methods. (See, for example, Sudman and Bradburn (1982, pp. 152–153)). This is consistently done in the absence of evidence. It is simply stated that field-coding will be error-prone and will disturb the pattern of responses.

The interviewer may – deliberately or unknowingly – affect the answers given or recorded. He or she may reveal the code categories to the respondent, so changing the nature of the stimulus involved in the question. The interviewer may over-interpret or distort a response in order to fit it to a precoded category, affecting the pattern of responses. Field-coding is thus expected to introduce either a constant bias or correlated variability into the survey estimate.

Against these unsubstantiated assertions, it might be argued that the task of field-coding could help the interviewer. Knowledge of the categories to which responses are to be coded may clarify the nature and detail of response sought by the researcher. And the respondent is present to answer any probing questions needed to assign a response to one of the categories. Such possible advantages are raised in the more reasoned discussion of field-coding in Moser and Kalton (1971, pp. 342–344). Again, however, empirical evidence is lacking.

2. The Experiment

For experimental purposes, seven questions were taken from past surveys and each was prepared for use in three different forms: an open question, field-coded or office-coded, and a closed alternative. The questions were:
1. "What would you say are the most serious problems facing Britain at the moment?"
2. "Why do you say the money is not enough to meet your needs?"
3. "What illnesses or health problems do you have?"
4. "What sort of thing do you try to do to im-

prove or maintain your health, apart from taking tablets or medicines prescribed by the doctor?"
5. "What effects do fumes from road traffic have on people, do you think?"
6. "What are the advantages of living here or the things you like about living in this area?"
7. "What are the disadvantages of living here or the things you dislike about living in this area?"

These experimental questions were embedded at appropriate points in a questionnaire concerning "Issues of Current Importance." The sample of about 550 respondents was systematically divided into three sub-samples, each exposed to a different form of each question as shown in Table 1.

Table 1. Allocation of Question Forms to Sub-Samples

FC = Field-coded
OC = Office-coded
C = Closed

	Sub-Sample		
	A	B	C
Question 1	FC	C	OC
» 2	OC	FC	C
» 3	C	OC	FC
» 4	FC	C	OC
» 5	OC	C	FC
» 6	OC	FC	C
» 7	OC	FC	C

In examining field-coding, we need to focus our attention on the interviewer. The technique makes explicit the function of a question as a moderating influence between interviewer and respondent, capable of influencing *either*. The experiment thus employed random pairing of respondent and interviewer within area – each of four areas being covered by six interviewers. This allows us to examine the contribution of interviewer variance to imprecision in the data, in addition to more familiar assessments of the effect of question form on response distributions.

In this paper, we focus on the comparison between field-coded and office-coded question forms, using the more marked contrast between open and closed forms only for occasional illustration. The latter results have been outlined in an earlier paper (Collins and Courtenay (1983)).

3. Effects on Response Distributions

In the experimental study, office-coding initially used the same frames as were given to the interviewer for field-coding. This was essential for the purposes of comparison, although, as will be discussed in a subsequent section, it does reveal the limitations of coding to a priori categories, even when these are based on previous use of the question.

At all seven questions the two coding approaches yielded remarkably similar distributions of responses. Over a total of 88 specific response categories, the incidence of the *average* code using field-coding was within three percentage points of its incidence using office-coding. And there was no *general* tendency for the incidence to be higher using one form rather than the other. Given our sub-sample sizes of about 200, and an average code incidence of about 10%, this broad pattern is consistent with a null hypothesis of there being no difference between the response distributions yielded by the two approaches.

Table 2 illustrates the general similarity of responses to the two question forms with results from Question 1. The results yielded by the closed question form are also given – a contrast which serves to emphasise the similarity of the office-coded and field-coded forms.

Table 2.   Office-coded, Field-coded and Closed Forms of Question 1

"What would you say are the most serious problems facing Britain at the moment?"

	Office-coded (O–C)	Field-coded (F–C)	Difference (OC-FC)	Closed question
Base for percentages	179	200		175
	%	%		%
Respondents mentioning:				
Unemployment	78	82	–4	79
Inflation	36	36	0	64
Violence	21	18	3	65
Racial conflict	16	18	–2	39
The economy	13	15	–2	31
Inadequate welfare	14	8	6	22
Industrial action	13	8	5	45
Immigration	8	7	1	43
Greed	8	8	0	39
Vandalism	6	8	–2	55
Lack of discipline	5	7	–2	52
Poor housing	3	8	–5	34
Abuse of benefits	5	5	0	37
Permissiveness	3	2	1	23
Extremism	2	3	–1	19
Breakdown of family	2	4	–2	33
Lack of religion	2	3	–1	22
Laziness	2	4	–2	27
Reduced rights	0	1	–1	16
Lack of patriotism	1	2	–1	18
Average	12	12	0	38

For a small number of response categories differences between the two questions were marked. Differences significant at the 5% level occurred at 10 of the 88 categories; differences significant at the 1% level occurred at 3. In all such cases, the code was used more frequently in office-coding than in field-coding.

The direction of those differences runs counter to the theory that interviewers will somehow force responses into the precoded categories (see below) and suggests that the problems arise in coding rather than in the process of question and answer. Table 3 illustrates this point with results from Question 6.

Table 3. Office-coded and Field-coded Forms of Question 6

"What are the advantages of living here or the things you like about living in this area?"

	Office-coded (O–C)	Field-coded (F–C)	Difference (OC-FC)
Base for percentages	200	175	
	%	%	
Respondents mentioning:			
Shopping facilities	57	57	0
Transport, access	54	46	8
Peace and quiet	29	24	5
Other residents	31	17	14
Entertainment	27	8	19
Schools	17	15	2
Appearance	16	15	1
Atmosphere	18	12	6
Convenience for work	15	14	1
Own house or flat	12	10	2
Country-side	11	7	4
Ties with area	11	4	7
No traffic	6	7	−1
Family live near	6	7	−1
Clean streets	4	3	1
Average	21	16	+5

3.1. Constraining Responses

One specific fear is that the use of field-coding may constrain responses to the given categories, through the reading of the question or the interpretation of answers. As the summary Table 4 shows, this did not occur with our experimental questions. First, the average number of codes used per respondent was about the same for the two different coding approaches. Second, the incidence of "other answers" (i.e. answers outside the predetermined categories) was usually markedly *higher* using the field-coded form. To some extent this reflects the greater difficulty of assigning a response to a category in the field, where

there is no access to a supervisor or researcher for clarification of the bounds intended to be applied to a category. But comparatively few of the "other answers" recorded by interviewers could subsequently be recoded to the existing response categories. A more important influence is a difference between interviewers and office-coders in their inclination to attach the "other answer" code to vague comments, especially when these are made in addition to other coded responses. (Earlier studies have shown substantial variation *between* office coders in this respect, e.g. Kalton and Stowell (1979), Collins and Kalton (1980), Collins (1981).)

Table 4. Average Number of Codes Used and Incidence of "Other Answers" at Each Question, for Office-Coding and Field-Coding

	Average number of codes used per respondent		% incidence of "other answers"	
	Office coded	Field coded	Office coded	Field coded
Ouestion 1	2.8	2.9	37	52
» 2	1.2	1.5	31	51
» 3	1.3	1.4	17	33
» 4	1.7	1.6	31	34
» 5	1.6	1.5	53	52
» 6	3.2	2.9	9	40
» 7	1.6	1.5	15	39
Average	1.9	1.9	28	43

3.2. Predetermining Categories of Response

Although the high incidence of "other answers" to the field-coded question form encourages us to think that the provision of pre-codes to the interviewer did not restrict the responses obtained it may be a matter for concern. It points clearly to the limitations inherent in the predetermination of response categories.

This predetermination – common also to closed question forms – has two potential limitations. First, it may lead to the omission of significant categories of response. This was not a problem with our field-coded questions. "Other answers" outside the precoded categories were satisfactorily recorded by interviewers and were thus available for the construction of additional categories. This is important, especially if answers to a question are likely to be influenced by topicality. For example, in both the office-coded and the field-coded forms of our question about "serious problems" three additional topics emerged from the "other answers" category: Northern Ireland, nuclear weapons and government economic policy. The limitation was more marked with closed questions, which tended to deter respondents from offering responses outside the predetermined categories although an "any other" prompt was always offered.

The second possible limitation of predetermined response categories is that they may impose an inappropriate *grouping* on responses. Office-coding, where the interviewer records the response verbatim, allows the researcher to reconsider the grouping of responses into code categories during the analysis. An example occurred at Question 6, concerning the advantages of living in a particular place. In both office and field coding about 50% of respondents mentioned "transport or access." Closer examination of the verbatim replies to the office-coded form allowed this category to be sub-divided into references to "public transport" (29%) and reference to "easy access to the town or city" (27%).

4. Effects on Precision

Within the limits imposed by predetermination of response categories and by the difficulty of coding in the field, field-coding has yielded results very similar to those obtained in office-coding. There is no evidence here that the provision of response categories to the interviewer had any appreciable biasing effect on the results.

There is, however, a potential loss of precision associated with use of interviewers to code responses. As Table 5 shows, between

Table 5. Interviewer Variance

Variance between interviewers expressed as a percentage of total variance, for the average response category at each question.

	Office coded %	Field coded %
Interviewer Variance at:		
Question 1	.0	2.8
» 2	3.4	2.7
» 3	.0	1.2
» 4	.0	5.7
» 5	.8	5.7
» 6	.0	.5
» 7	.1	1.7
Average	.6	2.9

interviewer variability accounts for about 3% of total variance using field-coding, compared with only .6% using office-coding. If interviewer workloads were large, this difference could be crucial. Even with an average workload of only 25, it would imply that a field-coded estimate would have a variance about 50% larger than a comparable office-coded estimate. Further, this is only the systematic part of any interviewer-induced variation. It suggests the possibility of further unsystematic errors, which could serve to cloud relationships in a data-set. (A small number of interviews were tape-recorded. Initial inspection of the transcripts shows some erratic coding in the field, but suggests that incorrect recording of verbatim answers for office-coding may be an even greater problem.)

The problem arises from the interviewer's additional role as coder in the field-coded form and must, of course, be balanced against the likelihood of unreliability in office-coding. But previous assessments of even unsupervised office-coding show it to have more reliability than we have found here for field-coding. And steps can be taken to improve the precision of

office-coding (supervision, double-coding) that would not be applicable to field-coding. Any cost-saving involved in the latter should therefore, be balanced against a probable loss of precision.

5. Conclusions

For our experimental questions, our results do not justify the usual unsubstantiated dismissal of the field-coding approach. Coding by interviewers of the answers to open questions *can* produce a pattern of responses very similar to that emerging from office-coding *to the same frame*. We have found no consistent evidence here that responses, as given or as recorded, are biased by the provision to the interviewer of a set of precoded response categories.

Nevertheless, field-coding has disadvantages. It is prone to interviewer variability reflecting the judgements involved in coding. Under some conditions, the resultant imprecision may be no greater than that arising from unreliable office-coding. But the latter is less final. The original answers are available to be check-coded, re-examined or summarised in different ways. And the reliability of office-coding can be increased through improved procedures. As a result, survey estimates based on field-coding will have less precision than *can* be obtained using high-quality office-coding.

The field-coding approach is partially dependent on the adequacy of the predetermined coding frame. While we do not find that answers outside the categories of the frame are discouraged, there is a risk that the grouping of responses imposed by the frame will have lost its relevance. This could arise from surveying a population different from that originally yielding the coding frame, or simply as a result of the passage of time.

The disadvantages inherent in field-coding – greater unreliability and a potential loss of

detail – have to be recognised by the researcher who opts for the more convenient and cheaper approach to coding. But the approach deserves further investigation, for example of other questions or different groups of interviewers, in an attempt to define conditions under which it could be a satisfactory alternative to an expensive and time-consuming process.

6.   References

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