
Census fieldwork in the UK: the bedrock for a decade of social analysis

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Abstract. Interviews with fieldworkers from the UK 2001 Census give voice to a unique, grounded view of the operational quality of census-taking. While the overall response to the census has been estimated at 94%, enumerators and their managers explain why differential undercount between social and geographical groups remained a problem. Fieldworkers subjected the census to criticism, from form design and quality checks to address-listing and management. Postal return of census forms caused unexpected difficulties for field staff and expense for the census offices. The subcontracting of various census operations and inflexible operational procedures made it difficult to find and implement timely solutions to problems that arose. A relatively high proportion of missing and inconsistent responses was expected by experienced fieldworkers and put extra burden on the editing and imputation procedures.

1 Introduction

A population census provides multifaceted data for every small area by targeting the whole population without sampling. It involves the design and management of a very large field operation. In the UK, planning the fieldwork starts soon after the previous ten-yearly census, and for the 2001 Census major changes were designed to adjust data collection and processing to current social and technological conditions. Apart from its complete coverage of small areas, the unique feature of the census is that the data are available to the public who provided them, in almost as equal measure as to the government that manages the census collection. The census is a representation of the people, with great democratic value. The main purpose of this paper is use the experience of enumerators and their local managers—those recruited temporarily to ‘number the people’—to identify strengths and weaknesses of census fieldwork.

The UK Census of Population and Housing on 29 April 2001 completed its fieldwork in May amidst a national election campaign and restrictions on access to rural areas due to a foot-and-mouth livestock disease. Neither turned out to be significant barriers to the collection. The census fieldwork in 2001 has been sufficiently successful to provide a census database with great power for social analysis.

Concern about the quality of UK census data prior to the 2001 Census stemmed from the 1991 Census failure to account for over a million residents (Simpson and Dorling, 1994), and fears that cooperation with the census would not have improved over the decade. The Office for National Statistics (ONS) designed 2001 Census procedures “to ensure that the maximum possible coverage is achieved, and in particular that the differential nature of any underenumeration is minimised” (1997, page 3). Studies since the 2001 Census have attempted to measure the quality of census collection from the results themselves (Haskey, 2004; ONS, 2003; Simpson, 2003; Williamson, 2007). It is more difficult to directly address the ways in which operational procedures have contributed to data quality.

In the UK, published feedback from census operations has in the past been limited to tests before the main census itself (eg Dixie, 1998; Moss, 1999; ONS, 1998). In the USA,

ethnographic study has focused on the individual, family, and community circumstances leading to underenumeration (as summarised by de la Puente, 1993). In Madrid interviews with the public after the census date suggested a relationship between attitudes to the census and the impact of government policy on different social classes (de Lucas, 1992). Research studying the interaction between interviewee and interviewer in large-scale surveys has highlighted strategies to engage interest and to make it easy for interviewees to agree to participate (for example, Groves and Couper, 1996). But there has been no parallel study of fieldwork strategy in the census context. This paper does what no previous account has attempted: to represent directly the views of those who take the census.

The fieldworkers' views are an important social record in themselves, which this paper gives voice to. They also provide data analysts with a greater understanding of the many sources of measurement error that may influence the accuracy of eventual census output, in ways that go beyond standard measures of quality assessment such as the Census Coverage Survey. An evaluation of census fieldwork also provides valuable lessons that can be drawn on to make improvements in management procedures for the next census, or, indeed, for any large social investigation for which timely interviewing and processing are of the essence. For example, evidence from fieldworkers' reports for the 2001 UK Census suggests that a lack of flexibility in management procedures and a reliance on imperfect commercial contracts removed the ability to respond appropriately to fieldwork difficulties, which proved a major factor in pushing the Census £9 million over its budget by mid-July 2001. Finally, fieldworkers correctly forecast a failure to minimise the large difference in undercount between areas and social groups that was a major aim of this census. Their explanations for this failure indicate a number of practical improvements that could be implemented for future censuses in the UK and elsewhere.

The paper begins with the method of interviews and focus groups that informs the paper and that led to a unique record of census fieldwork in the UK. We then provide an overview of the organisation of fieldwork, and identify the points at which specific difficulties arose. The subsequent account and discussion of emerging themes is then presented according to the chronology of the census process: in section 4, 'Before census day' we look at the recruitment of fieldworker staff and the derivation of address lists. In section 5, 'Response to the census', we examine form design; quality checks; refusals; students; community liaison; large households. In section 6, 'After census day', we look at post-back procedures and practice, and management issues including: subcontracting and ONS management. The paper ends with a discussion of response rates, and a summary of the issues raised in the paper and their implications for future censuses.

2 Method and sources

During the fieldwork for the UK Population Census of 29 April 2001, we recorded face-to-face interviews, telephone interviews, and two focus groups with temporary census staff, supplemented by written reports. These fieldworkers covered inner-city areas of Bradford, Manchester, and London (Camden and Stoke Newington), urban areas of Keighley, Shipley, Halifax, Cambridge, Oxford, Chesterfield, Milton Keynes, Redbridge in Outer London, and rural areas of Wirksworth in Derbyshire, Worth Valley in West Yorkshire, and Lanarkshire in Scotland.

Each focus group and interview followed the same semistructured pattern, prompted under headings of recruitment, address-listing, response from the public to the census as a whole as well as to the form and particular questions in it, collection of forms, and management support. Each interview lasted between 30 and 90 minutes, while the two focus groups lasted 90 and 150 minutes. All were recorded by hand at

the time the interviews took place, and transcribed shortly afterwards as verbatim accounts.

The nonrandom nature of this sample of fieldworkers, reached through informal professional networks, reflects the low-budget nature of the enquiry. As well as a spread of types of area, all ranks of fieldworker were included: six enumerators (EN); six team leaders (TL); twelve district managers (DM); and two census area managers (CAM). In the quotes that follow, the initials indicate the rank of fieldworker and a number identifies interviewees. The CAMs were primarily administrators. The DMs were directly responsible for the fieldworkers under them and often joined them in the enumeration.

There are two limitations to this method of reporting the census fieldwork. First, while covering a variety of circumstances, the interviews do not cover a purposefully representative sample of areas. For this reason, the comments reported in this paper are those that were repeated in spirit by more than one fieldworker, or were in other ways verified as a common experience. Second, fieldworkers have a tendency to blame the organisation for the ills they have to deal with, and to take credit for the solutions that they implement. Most fieldworkers are unaware of the research and consultation that preceded decisions about the census form, its content, and the fieldwork design referred to above. The heartfelt criticisms that fieldworkers make of some parts of the census operation must be interpreted with respect both for the personal effort that they expended and for the possibility that there is no easier way of undertaking a census. Where possible this paper highlights alternatives that may be feasible in the future.

A different author would have made a different selection of quotes and issues from the interviews. We accept responsibility for ensuring that the issues are the major ones clearly raised by fieldworkers. The full transcripts are available to all who wish to see them and make their own judgments (Bradford Council, 2001). Some mishaps are reported in the interviews, and others have been reported in the media. These incidents are less important in themselves than are the general lessons to be learned from them and from the fieldworkers about the census operations, which are the proper focus of those interested in better information. An official evaluation of census fieldwork has been published and is discussed at the end of the paper, but it relied on analysis of management system information and large meetings with CAMs, the top level of temporary management. The material reported here represents the unique voice of those who carried out the census.

3 Census fieldwork organisation

Conducting a national census requires the recruitment of a vast temporary fieldwork force, a process that begins a year ahead of census day itself. For the 2001 UK Census, this amounted to around 70 000 individuals, with a management structure summarised in figure 1. CAMs were the top level of temporary fieldwork staff. They were not responsible for any direct collection of census forms, but recruited and supported the DMs. DMs recruited TLs and ENs to undertake the census in areas of 4 000–10 000 households, and gave them support and training prior to and during their work on the ground. DMs have a good overview of census operations in the field, through their combination of hands-on involvement and responsibility for a substantial area. Some districts were categorised by the census offices as likely to be hard to enumerate. For these, one EN was recruited for each enumeration district of 200–400 listed addresses. In all other districts, each EN covered two enumeration districts of this size.

Table 1 shows the major landmarks in census fieldwork and processing. Two features of the plan caused specific difficulties. The first related to the separation of form delivery into two phases in April. Under this plan, only residents who were at home

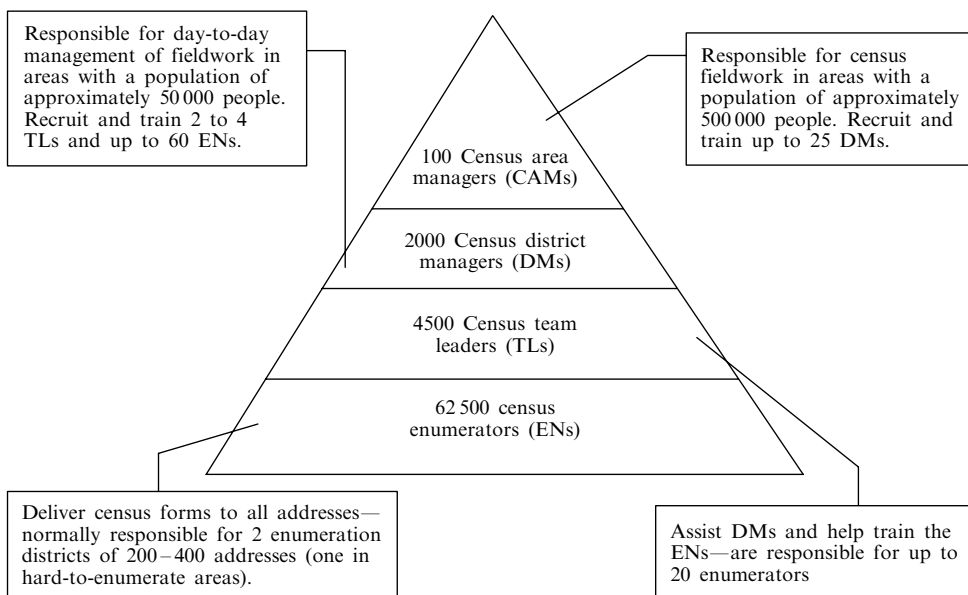


Figure 1. Temporary field staff for the 2001 Census in England and Wales (source: adapted from ONS, 2000).

Table 1. Major landmarks in the 2001 UK Census fieldwork and processing (source: fieldworker manuals and Census News).

Date	Fieldwork and processing
<i>Before census day</i>	
August 2000	Census area managers recruited and in post.
November 2000	District managers in post.
19 February 2000	Team leaders in post.
19 March 2001	Enumerators in post.
9–20 April 2001	Household list verified; forms left where personal contact made.
21–27 April 2001	Census forms left at all remaining households. All households asked to post back their form in an envelope provided.
29 April 2001, census day	
<i>After census day</i>	
April/May	Forms received via Royal Mail by district manager, checked for valid answers on date of birth, marital status, and sex for each person listed as usually resident in the household.
9–20 May 2001	Follow-up to households from which forms were not received by post or which failed validation.
24 May–17 June	Census Coverage Survey in the field.
<i>Processing and analysis</i>	
August 2001	Processing of census and Census Coverage Survey begins.
August 2002	Population estimates released for each local authority, by age and sex.
Dec 2002–June 2003	Detailed ‘standard tables’ released for each area of the UK.
Later in 2003	Other census output: migration, commuting, anonymised microdata, tables additional to the standard tables.

during the EN's first door-to-door tour of his or her area had initially received a census form. For the rest, forms would be delivered in the second phase. The fact that this phase would include delivery right up until just before census day was inadequately publicised. As a result, and amid mounting publicity about the compulsory nature of the census, many of those still without forms understandably but needlessly deluged the national telephone helpline, attempting to request a form that would in any case be delivered within a few days. There were a total of 2.5 million calls to the helpline, far more than expected, and it broke down for three days before extra call-centre staff could be installed (Select Committee on the Treasury, 2001).

Second, the ten-day gap between census day and the return of ENs to the field to chase unreceived forms proved to be seriously insufficient in most parts of Britain. Royal Mail did not deliver forms back to DMs in that timescale, and ENs were sent back to many addresses from which forms had already been posted. The result was a loss of focus on hard-to-count groups and further unexpected expenses for the census operation. This aspect will be discussed in some detail later. We now turn to the fieldworkers' reports of each stage of the census procedures.

4 Before census day

The recruitment of ENs, address-listing, and delivery of census forms each highlighted problems with the management of such a large operation. Delivery was achieved successfully but entailed considerable unpredicted effort in some areas. The new procedure of preprinted address lists led to some households being missed by ENs who did not thoroughly verify the lists. This section discusses each of these difficulties.

Recruitment of CAMs and DMs proceeded albeit with difficulties and delays in some areas, particularly within London. Closer to census day, advertising for ENs and TLs did not always give DMs a good field to select from. In many areas, the EN posts were not all filled by the required date so that training had to be rescheduled. While the ten-page application form for ENs was quoted as "overkill", another DM was surprised that he was expected to conduct interviews alone, both "from an equal opportunities point of view" and because "another head is helpful to discuss issues with" (DM12). Prescriptive rules "to go through all the hoops" appeared to work against speedy recruitment. This was the first occasion that local census managers felt their hands too tied by national prescription, an issue that will be returned to. CAMs and DMs tended to have some management experience, and their motivation for applying for the job was often to extend that experience. ENs on the other hand, were more likely to be attracted by an opportunity to get to know a local area, or simply to earn the income.

The first task for ENs was to check the households in their area. ENs were provided with a map on which the boundary of their enumeration district was drawn, and were asked to check and amend a list provided of addresses within the area. The list was drawn from the Ordnance Survey product 'Addresspoint' as provided in 1999, supplemented by local authority lists of expected areas of new development. The list was preprinted in the EN's green 'Enumeration Record Book' (ERB). The intention was to speed the listing of residential households that forms the framework for census enumeration.

In many cases the preprinted list undoubtedly did speed up the process, and perhaps overall it did so. In some cases the quality of the preprinted list was poor. A DM noted that, "One ED [enumeration district] went down from 440 listed addresses to 230. An industrial company was listed. I think a lot of houses with planning permission were listed though they weren't complete by the time of the census" (DM3). ENs also faced problems of fitting in unlisted addresses and taking duplicated addresses

out, so that “Maybe one in each three had been divided into flats but were only down on the list once” (EN12), and “While I had 375 to begin with and I added some, in the end I did less than that, 365” (EN10).

Where houses were named rather than numbered, including in most rural areas, the alphabetical listing of addresses was unhelpful, “when they discovered eventually that Farm A and Farm X were next to each other” (CAM2). Extra addresses were more difficult to cope with than the deletion of addresses, as “There was no space to put extra lines so I have to write them in at the end of the book. That means it’s crazy when I’m going back to them because I’m turning over the pages continuously from the front to the back” (EN12).

Some diligent ENs and DMs often found that the electoral register gave them a fuller list of addresses. “I was a Councillor ten years ago and I’m pretty sure some of the changes on the ground were known about then. We all wondered why they didn’t use electoral rolls—they are now up to date” (DM12). They generally welcomed the map and lists but wished for better ones, especially where there had been significant recent change: “They couldn’t keep reproducing maps each time there was a change. I felt that for new estates they should have done that” (DM5).

Clearly, a more accurate list of addresses could gain a lot of time for ENs in future exercises, especially if each was marked on a map. A DM highlighted one dangerous shortcoming of a preprinted address list. ENs who did not heed their training felt little incentive to find households omitted from the list. In his case, a whole estate had been missed, and the EN was sacked after a resident complained of not receiving a form. It was a general feeling that ENs assumed the list of addresses as accurate and, despite being warned that it was the maps which were the true definition of their areas and that they had to check that the list covered all properties on the map, it was easier for many to just use the list as printed.

In summary, there were difficulties and delays associated with the recruitment of ENs and the listing of households that tested and tired census fieldworkers in many areas, even if it did not ultimately delay the whole process. The possibility of missed households resulting from the new but incomplete automatic listing of properties may impact on census quality in two types of area: those where house conversion to flats is common, and those featuring new housing developments. In the next stage of the fieldwork, around census day itself, the response of the public to the census would be all-important to the completeness and quality of the census information.

5 Response to the census

This section reviews the response of the public both to the census as a whole and, as far as can be told, to individual questions. Field staff voiced criticisms of the layout of the census form. Less checking of quality was done by ENs on the doorstep than in past censuses, which probably led to a reduction of completeness and quality of each form returned. Only date of birth, sex, and marital status were checked for valid responses. Students were a problem for ENs. ENs gave useful feedback on the enumeration of Asian communities. The census community liaison programme does not seem to have been carried through during the census fieldwork itself.

5.1 Form design

The census form itself aimed to ask 41 questions in a simple manner, and to route children and those aged 75 or older quickly past the questions they did not have to answer. The form is inevitably more difficult for some than for others, and drew criticism from most field staff.

The most complex question—comprising a new series of tick box columns on relationships between each person in the household—was felt to be a major problem by many field staff. “They didn’t do it; you haven’t got a cat in hell’s chance of telling relationships from that question” (DM6). Particular problems may be encountered during processing when matching the relationship question to individuals’ answers later in the form: “Yes, if there’s five or six people, they’ll be listed in the first table, but in a different order on the form. So long as they were all there I just left them” (DM6); “I had loads like that” (DM8); and the same issue was raised with concern “in many cases” (TL13).

The question on ethnic group will give rise to some miscoding according to fieldworkers; the only box labelled ‘British’ appeared near the top of the options and was ticked by residents of a background other than White, who did not notice or ignored that it appeared as a subcategory of ‘White’. This is a probable source of some of the changes between White and other groups found in longitudinal analysis of census records (Simpson and Akinwale, 2007). The question asking about religion, made voluntary in order to gain parliamentary approval, did not present any problems. The employment questions, as perhaps to be expected, were highlighted by ENs as likely to be the least well completed. That each person’s questions took three pages rather than an even number caused problems: “It was really hard finding yourself in the form” (DM8) because the same question appeared on the left or the right for different people in the same household.

5.2 Checking responses

The quality of form-filling was generally considered a problem. “In general I would say the forms were badly filled in, particularly where text was required in boxes, many ignored the boxes so I wonder how well these will scan in” (TL13). While enabling a reduction of the field force by one third relative to 1991, the introduction of post-back reduced the opportunity for ENs to check and help with responses on the doorstep. All forms posted back were checked by TLs and DMs for valid answers to the first questions for each person listed at the start of the questionnaire: date of birth, sex, and marital status. These questions are important for imputation of other missing items, and only forms failing these checks were returned to ENs for follow-up. The rate of failure of the ‘three questions test’ among posted-back forms varied a great deal, often around 10%, but over 50% in some DMs’ areas. Often, the failed forms were missing the date of birth for children.

The checks on age, sex, and marital status undoubtedly greatly improved the quality of these key questions on a significant number of forms. The ONS later reported that these were the only questions with response rates greater than 99%. Nonresponse for all other questions was considerably higher than in 1991, usually between 5% and 10% [ONS, 2005a, page 41; OPCS/GRO(S), 1995, page 124].

Fieldworkers were aware from their checking that many households felt they did not have to complete all details for children, and that they could not identify forms where children had been missed off altogether. They suggested the need for clearer and more specific instructions to include children.

5.3 Refusals

Complete refusal to fill in a questionnaire was also encountered. In areas of relatively easy enumeration, it was not a big problem: “I had no refusals. There was only one refusal in South Derbyshire” (EN10). In Milton Keynes, a TL reported “quite a positive attitude among residents” and no refusals (TL9), while in Cambridge “People were very pleasant; some people were gruff, but no problem at all” (EN19).

On the other hand, in areas of harder enumeration, refusals were less tractable. In central Bradford, “I had 20 refusals in the end, out of 50 in the beginning. I’m going to suggest they all get prosecuted. They were nasty, very aggressive and they threatened enumerators” (DM8), while in Stoke Newington in North London outright refusals were not high on the agenda when all effort was focused on reducing the thousands of forms unaccounted for. There was a feeling that this policing role was beyond the call of duty for census managers, and consequently there was a reluctance to suggest anyone for prosecution. “The District Manager has a requirement to interview people who refuse, up to and including giving a caution. This wasn’t mentioned in any of the three training sessions. For that you need basic training, role-play or whatever, and a separate body of people to interview refusals. It shouldn’t be the responsibility of District Managers” (DM11).

Open refusals would normally lead to a whole household being noticeably missed from the enumeration. A refusal to fully complete the form would not usually be noticed, but one DM “got a refusal from a man. Then a call from the woman in the house—you can tell because the call centre sends the forms to us, to take to the address. When it was sent back, it only had the woman on it. She had fulfilled the legal obligation to return a completed form but avoided a domestic argument” (DM3).

Inevitably, there are some circumstances where people could not be properly enumerated. One EN asked for advice after turning up on a doorstep as police were dealing with a murder *and* the fatal heart attack of an elderly neighbour who had gone to help. Tongue in cheek, DM8 had told her to go back to get the forms, as they had both been alive on census night.

5.4 Students

For the first time, students were counted as residents at their term-time address for the census, though they could be included at their vacation address too but not as residents. This is consistent with the treatment of students in government population statistics. The enumeration of people in communal establishments other than students was not a significant problem according to field staff.

Of the DMs interviewed, two dealt with what might be considered student areas, with mixed results. The main difficulty, as foreseen in the census planning, was the overlap of census fieldwork with vacation dates. For example, in Bradford the university term did not start until 7 May, so the delivery of forms was not relevant for those in halls of residence, which were closed. Enumeration of halls of residence was very dependent on the cooperation and effort of university managers. In one university, this was not forthcoming until a change of staff well after census date, when a well-organised last effort brought back over 90% of the forms expected. In Leeds, the Metropolitan University refused to do the work asked of managers of communal establishments, insisting that all flats in halls of residence be treated as households, which ordinary ENs would enumerate. It is for this reason that the census output for 19-year-old students who have left home shows Leeds with a very high percentage living alone in a household (35%, while no other district has more than 12%).

5.5 Community liaison

The central census offices gathered contacts during the year 2000, using publicity and regional ‘roadshows’ about the census in a ‘community liaison initiative’ recommended from the 1991 Census. The contacts were intended to be people outside the main statistical contacts in local government, people who could help raise awareness of the census in communities that may be otherwise hard to reach, and help to advertise the jobs of ENs. The target groups included all those who might be hard to enumerate, including communities where the mother tongue was not English and also specific

demographic groups including young adults. However, the tasks of community contacts were not spelled out to them, and the census fieldworkers interviewed could not recall that lists of those contacts were passed to them.

Local community organisations did help in a variety of ways, in some cases with clear success. Community centres, churches, and mosques, for example, helped residents to fill out forms. One EN “set up a desk in the Bangladeshi Youth Organisation, helped people fill it in. He got quite a few forms back that way” (DM8). Only very local initiatives worked well. A local government officer “organised a help-day with the Council for Voluntary Services—but it was not well attended—it wasn’t local enough” (TL9). Some community workers may have taken advantage of the lack of confidence of residents. One community centre is reported to have been charging people £25 to fill in forms, supposedly for them to avoid the £1000 fine for noncompletion.

One CAM pointed out that a new approach was needed to enumeration of the growing Muslim populations of the UK.

“I went to mosques in order to recruit Asian fieldworkers, and inevitably there talked mainly to males. They were interested but saw it as a ‘female job’, and weren’t going to encourage women to do it, so there was little return from those efforts. It was very important that we got good data from these communities but it wasn’t good, there were many gaps. They didn’t understand the *raison d’être* of the Census. This was a failure” (CAM2).

5.6 Enumerating extended families

Concerns were raised about capturing the varied family arrangements encountered in South Asian communities where large households are common and in themselves present a challenge, such that “If there’s thirteen people in a house, there’s no way they’d all be got” (DM3). Sometimes people would move between houses on a regular basis, and extended families were particularly hard to fit into the census mould of households contained within a single dwelling. “Often it’s almost like there is a house that they sleep in and a house that they live in during the day. My advice was to divide the family into two and put some in each house. That way they didn’t need a continuation form” (DM8, who had insufficient continuation forms). The living arrangement sometimes changed during enumeration. An EN found one house “with two adults but three children born within three months, well that’s not possible, or maybe there’s grandchildren and they’re cousins, well I can’t ask can I? It’s not for me to question that kind of thing” (EN16).

This evidence points to poor quality of data from extended families, and from other large households. The census and most household surveys assume that households are complete units that live within a single dwelling. This is not the case for many extended families in the British South Asian communities. Moreover, the same lack of congruence of families, households, and dwellings increasingly occurs for many ‘dual households’ where children have shared care by parents living at different addresses.

6 After census day

6.1 Post-back procedures and practice

While postal return of census forms was taken up by a majority of households, delays in their processing by the Royal Mail postal service caused expense and severe problems for the enumeration, described in this section.

For the first time in the UK, householders were asked to post their completed forms in envelopes addressed to the DM, to whom Royal Mail was to deliver all forms received. The DM and TLs were to check all forms and let ENs know which forms had been returned and checked, in time for the follow-up by ENs of those not received,

which was to begin on 9 May. Implementation of this strategy was impossible in most areas of Britain, causing frustration eloquently expressed by this EN from Derbyshire:

“I got the list of non-return forms quite late, the Post Office had problems with the envelopes, with the forms. It meant that when I was going round they said ‘I sent it back 10 days ago’, or ‘two weeks ago’. Some people get a little shirty. Really you just had to believe them. That was a problem. And because you then had a short time left to get round, you had to put one leaflet in saying you haven’t posted back, and only a couple of days later you gave the one ‘You have a legal duty’ and so on. So that wasn’t very good” (EN10).

One of the interviewed CAMs had done the job during the 1999 Census Rehearsal, and had “recommended that the deadline be extended before returning enumerators to the field. In particular we said not to put the day for Post Office returns as the day after a bank holiday. The enumerators could have had a three week rest and then concentrated on a smaller number of non-returns” (CAM2). The advice was not taken. Nine days were allowed for the forms to be received and sorted, returned to the DM, and checked, and for each EN to be informed of the forms that had been received, including a bank holiday on 7 May.

It appears that, in spite of lacking a specific census contract with Royal Mail, as confirmed by the National Statistician to the Select Committee on the Treasury (2001), the ONS foresaw neither the postal backlog nor the financial implication. “Imagine an average ERB [Enumeration Record Book] with 400 addresses. In my own area, less than 50% were ticked as returned by the District Managers. So the enumerator got an average £200 extra—£1 for each not returned” (CAM2). This was a very large overspend when the observation here is multiplied across the country.

The choice of day for the census is an extremely difficult one, and involves an attempt to avoid Easter and summer holidays, for the whole period of census fieldwork, including the follow-up Census Coverage Survey. The experience of both the rehearsal and the census suggests that a more expensive contract with Royal Mail, or an extended collection period, was needed for the post-back strategy to be a success. Fieldworkers found it a ‘disaster’ in ways that will impinge on coverage as well as on the quality of results. The problem was not the number of postal returns—which exceeded the ONS’s expectation. Fieldworkers were not against post-back of itself, but felt it could not be done in the hurry they experienced. The main problem was the delay before fieldworkers received forms that had been posted back, which affected every fieldworker interviewed without exception.

The post-back was “really, really slow, terrible”, “a big disaster”, “a complete fiasco”; “The Royal Mail made a thorough pig’s ear of it.” “It was a massive disappointment. Follow-up consisted of turning up on the doorstep to say ‘We haven’t got your form’, to be told ‘We already sent it back mate’.”

The first impact was to delay the return of ENs to the field in many districts, wherever significant numbers of envelopes had not yet been received from Royal Mail. In many areas, this was a delay of two, three, or four days. Even this was achieved only by a tremendous (and expensive) effort by DMs and their TLs to sort and check the received mail within a tightly squeezed timescale. The intensity of the work that post-back created “was, in my opinion, an unbelievable task given the timescale and the pay involved (I think my hourly rate worked out less than that of some of my enumerators). Making phone contact with 12 enumerators daily during follow up was also a very time consuming task” (TL13).

A very great number of forms were ‘stuck in the post’. There were different approaches to this problem, and some concern at what ENs were asked to do. In Bradford, ENs asked people to fill in another form, further burdening the public.

The DM felt that “it was only at the mopping up stage with team leaders that ONS said not to chase those who’ve said they’ve sent them back” (DM8). In Cambridge, “We decided early on to take the word of anyone you felt you could” (EN19).

The effects on fieldworker morale and effectiveness were a serious problem. Time that fieldworkers had earmarked for census collection now had to be rearranged because of the delay. ENs, having developed an understanding of their enumeration district, never had a final sense of how well they had done as there were still forms ‘in the post’ at the end of their contract. Apart from the difficulties of dealing with the unexpected delays in Royal Mail work, the ambiguity in the field may have led to more refusals. “They cottoned on they could just say ‘I’ve posted it’ and there was nothing you could do. You are unable to prove whether they have” (DM2).

There were continuing delays in receiving forms. One DM explained in a briefing note to his ENs that “Your frustration is shared by those of us who have spent three weeks trying to prize post-backs out of Royal Mail” (DM12). In some areas Royal Mail were dealing with census forms only after they had dealt with all other mail, and in any case were not able to provide the quick turnaround envisaged in the census planning. As a consequence, in many areas the ENs were out in the field later than the planned 18 May, when they were supposed to finish all their paperwork and end their contract on 21 May. Some reported for a few days extra, others worked until the 26 May, and one of those interviewed worked until the 30 May. A mop-up of remaining households was then to take place by TLs and the most successful ENs. Extra costs were incurred to pay the ENs their later work, over and above the £1 per unreturned form referred to above (this rate as others was more in London, and less in noncity areas). A further consequence was some interference with the Census Coverage Survey that went into the field on 24 May.

Post-back may have been a success if measured by the percentage of forms eventually received through the post. But the unexpected delays led to ambiguities in the collection procedures, intense pressure on field staff with detrimental impact on census coverage and quality assurance, and a very significant financial contribution to the £9 million overspend on the census budget in 2001/02 [Cook (2001a); the National Audit Office (2002) suggests a total avoidable expenditure of £11 million].

6.2 Management issues

Two general management issues raised consistently by the census field staff are reported here: first, the extent to which contracting out of major parts of the census was appropriate; second, how the leading role of ONS’s own management might be improved for the future.

6.2.1 *Subcontracting the census operation*

Agencies and commercial companies were contracted to perform many parts of the census operation, as follows:

- the printing of census forms (Lockheed Martin, subcontracted to Polestar) and all other stationery (Central Office for Information);
- the delivery of all forms and stationery (TNT);
- the recruitment of ENs (adverts supplemented by job centres, and in later stages by recruitment agencies in some areas);
- the census helpline call centres (Cable and Wireless);
- the collection and delivery to DMs of posted census forms (Royal Mail, aided in some cases by TNT);
- the pay of field staff (ADP Chessington, partly subcontracted to LASON);

- the scanning, image recognition, and coding of completed census forms, including manual coding where necessary (Lockheed Martin, partly subcontracted to ICL, Adecco, and Evolva).

The preprinted address lists, recruitment of ENs, and post-back have all been referred to already. The helpline, delivery of forms, and the pay of field staff all suffered difficulties.

Some doubted whether the ONS has the experience to set successful contracts for a major operation for which timeliness was essential.

“Previously it had all been in-house: pay roll, production, and distribution of forms, co-ordination and delivery of all the myriad items of stationery; collection of forms, scanning. ONS was a naïve and inexperienced contract organiser. As soon as things went wrong, the contractors, who were not naïve, said ‘you asked for something, which we have done; you can’t change it now’. So the service was less than was required, or ONS had to pay more” (CAM2).

It is difficult to design a contract for a complex process where timeliness is essential. Unexpected problems with the census must be resolved quickly, with the main aims of the census in mind, and not be seen as an opportunity for extra expenses. The operation of the helpline appears to have worked contrary to these needs. The early deluge of unnecessary calls was not dealt with in a reassuring way but resulted in great frustration for callers and unnecessary (“and usually duplicated”) requests to the census field staff. It was necessary to recruit 100 extra staff to the helpline, who started after one day’s training. Later, the helpline staff sent requests to census field staff after the end of fieldwork, which they had no way of responding to. One DM expressed lack of confidence in the helpline staff’s awareness of the census with reference to four helpline requests for interpreters. When it turned out that all four had English as a first language, he reasoned that “if they couldn’t understand what the person was saying they just put it down as needing an interpreter” (DM7).

Pay of ENs was contracted to the same company that deals with ONS staff pay. DMs saw their systems as inappropriately bureaucratic for a large temporary workforce. “Pay has been the most total disaster, I’ve never met a bureaucracy as bad as that in 40 years of management. In the middle of recruitment when working 14 hours a day, I was told I had to send details of Team Leaders for pay purposes and found there were 36 different forms that had to be sent” (DM12).

ENs’ pay was frequently delayed, and details were questioned or transcribed wrongly.

“One enumerator hasn’t got stage 1 payment yet. He’s threatened to take me to court. He still hasn’t got it, and he’s not the only one. I’ve followed it up and the details they have for him are completely wrong. What upsets me is I put a lot of effort into those forms because it was to do with their payment, not so much into others. With 44 enumerators, each had four forms—mileage, hours, additional payments, and the claim form itself. The enumerators hadn’t filled them in well—I had to correct mistakes for all of them” (DM8).

The delay in pay beyond the 15 June as stipulated in their contracts affected many thousands of ENs and was “arguably the biggest problem encountered in the Census” according to the ONS itself (ONS, 2001a, page 4). Their DMs were upset at the lack of means to remedy the situation and even more at their perception that the ONS not only was not sorting it out but did not see it as a major problem. The ONS was given assurances by the contractor but had no means of insisting that those promises be met. Len Cook (the UK National Statistician and Director of the ONS) in a letter dated 12 June to all DMs assured them that all ENs would be paid by 29 June, but that did not happen. The ONS ended by using more than 100 staff within its own offices to sort

out field staff pay, a major expense to the organisation which should have been focused on processing and quality assuring census forms (Cook, 2001b).

The timely delivery of census forms to census field staff was essential, but, in one district of large households, the continuation forms needed for households of more than five residents ran out with 4000 short and none were forthcoming for over a week. In another area, the household forms themselves ran out and were not available for several days. What should have been emergencies that could be resolved in hours, simply could not be responded to as emergencies by the contractors. In at least one area the return of forms was complicated by the subcontracting of delivery from Royal Mail to a TNT office. One can imagine gritted teeth behind the humour in the following account.

“With TNT I had one conversation when I tried to find out when I was going to get a delivery, she said ‘How do you spell census?’ I told her. She said ‘Is it a company?’ ‘It’s this thing that’s going on all around you.’ This was 3 days after census day. Then she said ‘That’s Bert you want, he’s off till 12.’ ‘But who does his work when he’s not there?’ and eventually the reply ‘We can’t work 24 hours a day you know.’ They just didn’t have the idea of responsibility for the work. They didn’t deliver in our area. We did the work. Generally the TNT delivery of supplies was OK, though they didn’t warn when they would come” (DM12).

Pay delays caused extreme hardship in some cases, where the pay was needed for essential expenditure, and any delay in pay was demoralising for field staff working very hard to make up for the difficulties that post back caused. In one census area, “At least half of the DMs were sufficiently demotivated to say ‘It’s keep your head down time from now on and do as little as possible.’” Any such demotivation would have an effect on the quality of the census enumeration.

6.2.2 *ONS management*

CAMs were trained to expect the census operation to involve more teamwork with themselves as key players, but some were disappointed. “We were supposed to organise our own work, but processes were set up so rigidly, it was hard to go outside them. Senior management at the very top said “It is totally flexible, they are your resources, you decide within the aim of 100% enumeration.” But you read the book—the CAM manual—and realise it doesn’t work that way” (CAM2). Examples of “bureaucratic”, “paper heavy”, and “civil service” management were often very specific, such as the highly detailed budgets for each CAM, the refusal of the ONS to provide a Kurdish translation of the census due to a requirement for standards that were impossible to assess, the barriers to sacking a nonworking EN, and changing instructions for box labelling. Other constraints had a more general impact: “I have cut corners, for example written no diary, to keep to the designated hours. The paperwork was crazy” (DM14).

More teamwork would seem to be required to meet the stated aim of reducing the variation of response rates, by transferring resources from areas that during enumeration encountered less difficulty into other areas struggling to attain an equal response. DMs did manage to find ways of using willing ENs to do additional work in the most difficult areas within their own district, but there was no way in which they could help each other out across districts. Districts were graded as a whole, difficult or not, and allocated a set number of ENs.

Information technology was not made sufficient use of, in spite of specific recommendations from the Census Rehearsal. One DM felt that it would have been cost effective to supply an Internet-ready computer and printer to do a lot of the work locally. “You could print off more forms straight from your machine. Or be linked to a

system where you could order them directly from ONS instead of through the Area Manager, and get them quickly” (DM8).

Feedback was insufficient for field staff to feel part of a census team; a suggestion that DMs be encouraged with a competition to get the best response within a census area fell on deaf ears. A sense of poor management at the ONS level was reinforced by significant events that field staff were aware of. The lack of responsibility in line management in particular upset one DM. “Since they lay off their staff in reverse order of seniority they clearly don’t believe in line management.” His reasoning was that, as CAM contracts ended on 30 June, two weeks before DM contracts, remaining issues (including unresolved pay) had to be handled without support. He was also aware that the head of census fieldwork had been promoted out of the Census Division before the end of the fieldwork. The same DM had negotiated with his family to move holidays out of the period as a consequence of demands made at his recruitment interview; he was therefore “surprised to hear that the head of census left for four weeks leave in June, then his deputy for four weeks from the end of June”, within the crucial fieldwork period (DM12).

7 Summary and discussion

The interviews and reports from field staff reported here provide an understanding of how the UK 2001 Census was taken. They will strike a chord with anyone who has been involved in survey or census fieldwork. How much value do they have for improved planning and processing of the census and survey research?

Along with other feedback, the interviews were passed to the ONS to help identify, monitor, and solve possible difficulties in the scanning of census forms and their processing. The likelihood of higher rates of missing households and missing items within forms than in the past, the difficulties with the relationship question, the likelihood of many households having completed more than one form after delays in Royal Mail processing, and the observation that many forms were completed poorly with answers entered outside boxes provided, have been highlighted above.

Many of the fieldworkers’ concerns are reflected in subsequent formal reviews of census quality. Census address-listing was found to be deficient, resulting in specific additions to the mid-2001 population estimates for fifteen local authorities including Manchester and Westminster (ONS, 2004a). The ONS acknowledges that over 1 million addresses did not appear in the listings given to ENs (ONS, 2005b, page 70). The relationship question perceived by many fieldworkers as unworkable was successful for small households but returned more than one quarter incomplete on average for households of three or more residents (Haskey, 2004). All variables other than basic age, sex, and marital status (which were checked by fieldworkers), suffered from more missing values on returned forms than in 1991 (ONS, 2003). Fieldworkers had predicted this as a result of less contact and quality assurance in the field. The ENs’ difficulty in recording large or multiple-household families has been one of the ONS’s concerns in investigating new ‘bases’ on which to define and measure the population (2004b). The delay in the field when post-back did not operate smoothly has been costed by the National Audit Office at £11 million (2005b, page 79). The late payment of field staff has been blamed on late procurement of contracts and overcomplex systems which led to “disappointment, disillusion and, in some cases, hardship for many field staff” (2005b, page 74). The level of pay itself was not an issue raised consistently by fieldworkers themselves, but, according to the official evaluation, “recruitment at all levels was, however, hindered by rates of pay that were widely regarded as being too low” (2005b, page 36).

Other feedback from field staff has highlighted issues that official reviews of the census have not fully addressed but that must inform the planning of future censuses. It is essential that the census retains the commitment of a very high percentage of the public. To this end, simplicity in question and form design should be made a premium. Post-back should be reviewed on the same grounds it was rejected before the 1991 Census: expense, loss of control, and reduced opportunity for fieldworkers to check and improve the completed census forms. The ONS blames the difficulties on a higher return rate than expected rather than on insufficient capacity in the postal system, which fieldworkers observed (2005b, page 72). In spite of its success in gaining a majority of returned forms in 2001, post-back requires a longer period and more resources to ensure that fieldworkers know who has returned a form and can then focus on those who have not. The failure of planned redirection of resources to difficult areas was attributed by fieldworkers to inflexible management and to the extra workload caused by late delivery of forms by Royal Mail. Although “a perception that unacceptable levels of bureaucracy existed which reduced autonomy” is accepted (ONS, 2005b, page 74), there remains a need to design flexible procedures and information technology facilities which maintain high quality while allowing unforeseen problems to be dealt with without delay.

To incorporate organisational flexibility in an operation as large and short term as the census would be very difficult, especially given the importance of standardised procedures. But experienced census field managers felt that the 2001 Census resources and management were so inflexible as to frustrate the declared aim of minimising differential undercount, and to magnify the problems thrown up by new procedures of post-back and preprinted address listing. They felt strongly that both the contracting of major parts of the census operation to agencies with little commitment to the census and the bureaucratic style of ONS management had negative effects on census coverage and quality.

The fieldwork suggests considerable variability in the coverage and quality of the data, which will concern users of census data. The Census Coverage Survey and its associated validation and correction procedures (Brown et al, 1999; ONS, 2001b; 2002) measured this variability and went further than in the past to compensate for it.

There will nonetheless be greater uncertainty in the census results for some groups than for others. Difficulties of enumeration are concentrated in areas where various languages are spoken, turnover of residents is relatively great, and working hours are irregular. Thus, groups that are poor and socially excluded have less certain census records (see also Simpson, 1999). But enumeration difficulties extend to young men generally, the significant and increasing number of people living in gated properties or locked blocks of flats, and young children.

In conclusion, there are several priority recommendations arising from fieldworkers' experiences which can maintain and improve the quality of census results.

- Postal delivery and return reduces the direct contact between fieldworkers and residents, requiring a census form with clearer layout of fewer questions. Fieldworker involvement improves both response rates and the quality of information returned.
- Postal return of census forms requires a rapid return of information to the field from every form returned, to identify and encourage return of the remaining forms.
- Differential response is likely to remain between areas and social groups, which demands successful imputation of missing residents and missing information.
- The success of such a large operation within a short time scale demands a management strategy that encourages local flexibility and responsibility.

- A significant resource is required to deal with eventualities unforeseen in commercial contracts.

This report pulls its punches in places in order not to overinterpret a large but nonrandom study; that it nonetheless leads to clear conclusions suggests that further research with fieldworkers and the public would be a fruitful planned exercise at the time of future censuses. There is no other source of feedback from field staff involved directly in the collection of the 2001 Census. The fieldworkers' rich picture of how the population has been numbered is testament to the effort involved in planning and executing a census. The severe difficulties reported by fieldworkers in the 2001 UK Census provide lessons to learn from and warnings for census users, within the context of a successfully completed exercise.

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