

**Census fieldwork – the bedrock for
a decade of social analysis**

Ludi Simpson

Occasional Paper 22

Acknowledgements

Thanks to the 2001 Census fieldworkers, all of whom gave much more than can be reported here. In the text, enumerators (EN), team leaders (TL), District Managers (DM) and Census Area Managers (CAM) are identified by a number. Those with the same number worked in the same area.

ISBN: 1 899 00524 2

Price: £3.00. Further copies available from:

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October 2001

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Box 1. How the UK Census 2001 differs from previous censuses

The major procedural changes in the 2001 Census, compared with the 1991 census.

Content and design of the household questionnaire:

- New questions were asked on religion, health, lowest floor level, caring for others, and the relationship of each household resident to others in the household.
- A redesigned form offered all questions for one person before those for the next person.
- The instructions were changed to include students at their term-time address, to count explicitly those with 'no usual residence', and to prevent visitors from being included other than at their usual residence.

Fieldwork:

- Enumerators were given a pre-printed list of addresses compiled primarily from the Ordnance Survey's product Addresspoint.
- Householders were asked to post back their forms, reducing the number of enumerators by one third and enabling their efforts to be focused on households that had not returned a form.

Processing and validation:

- All forms will be scanned as images and interpreted electronically in an effort to reduce the time taken for processing.
- All responses from all forms were planned to be fully coded and processed.
- Major operations have been contracted to private companies, including the payment of enumerators and the scanning and processing of census forms.
- A wholly redesigned sample post enumeration survey, the Census Coverage Survey, will directly estimate census undercount in 100 areas of the UK.
- The census coverage analysis will be used to enhance the census database through imputation of new records, such that the census outputs are directly consistent with government population estimates for census day.

Output:

- Standard tables will not be based on the output from previous censuses but are restricted to simpler cross-tabulations, with priority for harmonisation across the UK.
- New finance will make all standard tables for local output areas available free on the Internet, and give easier access to most other output.

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1. Introduction

A population census provides multi-faceted 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 make data collection and processing suited to current social and technological conditions. These changes are summarised elsewhere in Box 1. Apart from its UK 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 to learn from the experience of census enumerators and their local managers – those recruited temporarily to ‘number the people’.

The UK Census of population and housing on 29th April 2001 completed its fieldwork in May amidst foot and mouth restrictions and a general election campaign. 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, should processing and coverage estimation be successful.

The fieldwork experiences described here highlight reasons why the fieldwork hit such snags as to push the Census £9million over its budget by mid-July 2001, but more importantly they highlight the ways in which the fieldwork organisation managed to respond to the difficulties and succeed in numbering the people. Fieldworkers raise serious questions regarding management of large parts of such a complex exercise through commercial contracts, and make positive suggestions for the design of future censuses. The experiences also provide indications of the quality of the data, and underline the need to report that quality to users of census data. They paint a picture of the commitment and labour that have filled the framework that was carefully constructed over the previous decade of planning.

The sections below describe: the method of interviews and focus groups that inform the paper and comprise a unique record in the UK; the Census fieldwork organisation; progress of the fieldwork before Census day; the response to the Census ‘on the street’; the collection of the data after Census day; management issues raised during the fieldwork; response rates and the One Number Census that is designed to improve the quality of the final census database. The paper ends with a summary and discussion of the issues raised.

2. Method and sources

During the fieldwork for the UK population census of April 29th 2001, face-to-face interviews, telephone interviews and two focus groups were recorded with temporary census staff in the rural areas of Haworth and Wetherby, the urban areas of Keighley, Shipley, Queensbury, Calderdale, Kirklees and Bramley in West Yorkshire, Chesterfield, Milton Keynes, Cambridge,

and Oxford, the inner city areas of Manningham and West Bowling in Bradford, and finally Hackney in Inner London. Sixty pages record experiences of more than two dozen individual fieldworkers (Bradford Council, 2001). They provide an approximation to an ethnographic account of the 2001 Census fieldwork. These interviews by the author were supplemented by reports from Camden, Redbridge and Lanarkshire which were partly already synthesised from various fieldworker experiences.

Each focus group and interview followed the same semi-structured pattern, asking for descriptions of:

- recruitment of field staff
- listing of addresses in the area to be enumerated
- response from the public to the census as a whole, then to the form and particular questions in it
- the collection by enumerators at addresses from which a form had not been received by post
- management support
- any other issues that those interviewed wished to raise.

The discussions were allowed to stray as the interviewees wished, but were prompted to come back to these headings. 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.

There are two limitations to this method of assessing 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 not being an exceptional 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. 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 isn't an 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, though this author claims 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 judgements.

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.

The issues raised in this paper are best seen as prompts for a more comprehensive review with access to all the planning documents and information held internally, and access to those centrally involved in the management of the Census. At the time of writing (August 2001) the

census office at ONS has not been able to estimate response for separate areas within England, nor do they expect to do so before the Autumn of 2002 when the coverage survey has been fully analysed. Nor have they shared the feedback gained from ONS interviews with Census Area Managers in June and July 2001, that will help put this report into a wider context, preferring to wait for their own 'overall evaluation'.

Perhaps the clearest role for this feedback from field staff is to help set an agenda for the review of the Census that the national Statistics Commission (2001) has announced, and for ONS' own internal review.

3. Census fieldwork organisation

Census Area Managers were the top level of fieldwork managers. They were not responsible for any direct collection of census forms, but recruited and supported the District Managers.

District managers recruited team leaders and enumerators to undertake the census in areas of four to ten thousand households, and gave them support and training prior to and during their work on the streets (see Figure 1). District Managers 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. They recruited one enumerator for each Enumeration District of 200-400 listed addresses. In all other Districts each enumerator covered two Enumeration Districts of this size.

Figure 2 shows the major landmarks in Census fieldwork and processing. Two features of the plan were to cause specific difficulties. First the separation of delivery into two phases meant that for a large part of April only residents who had been at home during the enumerator's first door-to-door tour of their area had received a census form. Concerned at mounting publicity about the compulsory census in the last week of April, which made no reassurance that forms would not necessarily be delivered until just before the census day, those still without forms understandably but needlessly deluged the national telephone helpline, attempting to request a form that should in any case be delivered within a few days. There was a total of 2.5 million calls to the help-line, far more than expected. Second, the ten-day gap between Census day and the

Figure 1: Temporary field staff for the 2001 Census in England and Wales

Extracted from Census Advisory Group paper (00)05, February 2000.

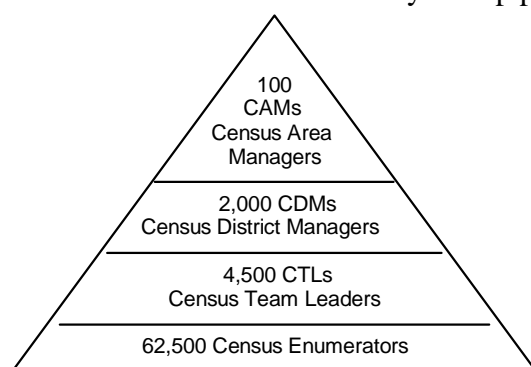


Figure 2: Major landmarks in the 2001 UK Census fieldwork and processing

Dates as planned. Source: fieldworker manuals and Census News.

August 2000	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.
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.
August 2001	Processing of Census and Census Coverage Survey begins.
September 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.

return of enumerators to the field proved to be seriously insufficient in most parts of Britain. The Royal Mail did not deliver forms back to Census District Managers in that timescale. Enumerators were sent back to 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.

4. Before census day

Recruitment, address listing and delivery all highlighted problems with the management of such a large operation. Delivery was achieved successfully but entailed considerable unpredicted effort in some areas. There are fears that the new procedure of pre-printed address lists led to some households being missed by enumerators who did not thoroughly verify the lists.

4.1 Recruitment

For such a vast operation taking place only once in ten years, an effective temporary workforce was required, as in Figure 1, amounting to 80,000 staff to enumerate the UK. All jobs were advertised nationally and within local authorities, while enumerator and team leader jobs were also advertised and recruited from Job Centres. Pay was to be for completing specific tasks, which if completed within the time suggested in ONS guidelines would be approximately £6 per hour for enumerators, £7 per hour for Team Leaders and £9 per hour for District Managers. Recruitment of Area Managers and District Managers proceeded albeit with difficulties and

delays in some areas, particularly within London. Closer to census day, advertising for enumerators and team leaders was insufficient in many areas to give CDMs a good field to select from. In many areas the enumerator posts were not all filled by the required date so that training had to be rescheduled. In the quotes that follow, numbers distinguish different Enumerators (EN), Team Leaders (TL), District Managers (DM) and Area Managers (CAM).

Recruitment of Enumerators was a problem. Were supposed to interview 60 for 27 enumerators' posts, but nowhere near that number applied who could be suitable – some applications were with illegible writing. (DM14)

The amount of time in recruiting enumerators was far more than anybody expected. (DM5)

I had half the applications I needed to fill 41 enumerator posts. We were appointing people who really were not people one would have appointed had we had more to interview. Then they went to Radio Capital and other places, and a second tranche of people came through who were better, but by that time we had filled the posts. (DM12)

Most of my 31 staff came from personal contacts. Most didn't live in the area. (DM6)

Using just the Job Centres was not enough, and meant we weren't in control of that aspect of the job. We were told we had to interview everyone suitable and could only appoint after interviewing everyone, but that was a waste of time, and meant enumerators weren't appointed in time to do a good job. (DM4)

During the rehearsal in Chapeltown in Leeds, we got good contacts and enumerators who live in the area and so aren't afraid of the area. The recruitment process [for the census] didn't lend itself to that happening. (CAM2)

The tension between common and quality-assured employment practices on the one hand and the need quickly to recruit a local temporary workforce on the other, gave rise to some resentment of ONS 'control' mentioned by DM4 in this context. While the ten-page application form for enumerators was quoted as overkill, another CDM was surprised that he was expected to conduct interviews alone, from an equal opportunities point of view as well as expecting two heads to be better than one. Prescriptive rules 'to go through all the hoops' appeared to work against successful recruitment, and this was the first occasion that local census managers felt their hands too tied, an issue that will be returned to.

CAMs and CDMs tended to have some management experience, and their motivation for applying for the job was often to extend that experience. Enumerators on the other hand, were more likely to be attracted by an opportunity to get to know a local area, or simply the cash.

4.2 Training

The three-week training of CAMs focused on team building, which some felt was inappropriate to their experience, while the nitty gritty of running the census was not a major part of their or the 9-hour CDM training.

In a future census, if you take people on short term contracts you need to tell the basic things up front – the amount of work they'll have to put in. There is a complete lack of any information up front on what it is you are dealing with – the first time I saw a census form was when they were delivered to my house. (DM11)

Enumerator training was itself a team building exercise but also gave clear guidance on the procedures of census taking. It was to provide knowledge of the procedures for the census but also aimed to encourage commitment to getting as close as possible to 100% enumeration, and in general the training and the written enumerator manuals were welcomed.

It were all right, it made for animation and debate, a chance to talk things through. What we said wasn't important, it was more a trigger for questions, which worked (DM7). I agree with that. It did help the team to form, and picked up on early platforms (DM8). Because I'd met the other enumerators I'd sometimes meet them on street corners and have a chat about how it was going. That was nice. (EN10)

4.3 Listing addresses

The first task for enumerators was to check the households in their area. Enumerators were provided with a map on which the boundary of their enumeration district was drawn, and were asked to check and amend a pre-printed list of addresses within it drawn from the Ordnance Survey product 'Addresspoint' as provided in 1999, supplemented by local authority lists of expected areas of new development. The pre-printed list was entered in their 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 it undoubtedly did speed the process and perhaps overall it did so. In some cases the quality of the pre-printed list was poor.

EN10. A lot of addresses were repeated, so while I had 375 to begin with and I added some, in the end I did less than that, 365.

DM3 One ED 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.

EN12. I had a lot of properties to add, maybe one in each three had been divided into flats but were only down on the list once.

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 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).

I don't think it would have been better to have no listing, but I'm sure the books listing could have been more up to date. When I rang census HQ for a new map, they said they wouldn't do it, that they couldn't keep reproducing maps each time there was a change. I felt that for new estates they should have done that. (DM5)

Diligent enumerators and CDMs often found that the electoral register gave them a fuller list of addresses.

DM2. This [ERB address listing] was poor. I got hold of the electoral list because I know the people involved, and used it to supplement the ERB. The electoral list was 99.9% right.

EN10. The postman helped, or later on I got a copy of the electoral list and that helped.

DM12: 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.

Clearly a better address list could gain a lot of time for enumerators in future exercises. But the most dangerous impact of a pre-printed address list was that enumerators had little incentive to find households omitted from it.

I had a whole estate that wasn't in the ERB, 40 odd houses. The Enumerator hadn't bothered to report it – the trigger was when someone on the site complained. It's Lime Tree Court (DM8. Oh I know that, its important – there's children in there). That enumerator was sacked and in the end I and my wife had to do it. (DM7)

In my opinion because the enumerators were given a list of addresses they assumed these were accurate and despite being warned that it was the maps which were the true definition of their areas and that they had to check they covered all properties on the map I suspect it was easier for many to just use the ERBs. (TL13)

In summary, there were difficulties and delays to recruitment of enumerators and listing of households that tried and tired census fieldworkers in many areas but did not delay the whole process. For eventual census quality the possibility of missed households induced by the new but incomplete automatic listing of properties may prove to be a problem, particularly where house conversion to flats is common, and new housing developments. In the next stage, 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 and the quality of responses

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 enumerators 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 as usual were a problem for enumerators. Enumerators 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 a considerable number of 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 questions are unnecessarily complicated. I think quite a lot of information [from the respondents] was quite poor and that's because the form was badly designed. The questions were complex. (DM8)

One thing that was really annoying, was putting 3 pages for each person. It should have been two or four. It was really hard finding yourself in the form. (DM8)

In the very first batch, I got back 3 forms from the same street, I know the area and they are all the same sort of houses. The question that says are all rooms behind one outside door, one said yes, one said no and the other hadn't filled it in. You could tell they hadn't understood it. I found it very hard to fill in myself. (DM7)

Many forms had comments on about how many times was it necessary to complete the names of residents - in the case of the householder 4 times does seem a bit excessive! (TL13)

It needed clearer instructions as to when to fill in the form and when to send it back, they were not told to send it back promptly. (EN12)

The most complex question – 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 mis-coding according to fieldworkers; the only box labelled ‘British’ appeared near the top of the options and was ticked by residents of background other than White, not noticing or ignoring that it appeared as a sub-category of ‘White’. The question asking for religion, made voluntary in order to gain parliamentary approval, did not present any problems. Representatives of all major faiths organised in Britain made the argument for its inclusion in the census, and would have wished it to be compulsory as were all other census questions in Britain.

The employment questions, as perhaps to be expected, were highlighted by enumerators as likely to be the least well completed.

5.2 Checking responses

The quality of forms 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)

Illiteracy is more of a problem because of postback, and there’s a lot of it. (DM1)

The reference to postback highlights that the enumerator in 2001 had less opportunity to help householders fill in their forms. DM8 honestly declared “We didn’t have the contact to know if any of the questions were difficult to fill in.” All forms posted back were checked only for valid answers to the first questions for each person listed at the start of the questionnaire: date of birth, sex and marital status. Forms failing these checks were returned to enumerators 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 District Managers’ areas. Often the failed forms were missing date of birth, particularly for children.

When we went back, we knew that only questions 2, 3, and 4 were necessary as a last resort; these will be the only ones that are well filled in. (DM2)

There's no way of checking back for the questions once they have passed the first three, age sex and marital status. I was told to just make sure that those were filled in, and even to fill them in myself if I had to. I did that just for one form where they had listed seven people on the form but only given one form. When I went back and asked who were the names that weren't completed, the children told me it was the parents, and I knew enough to work out most of the answers, over 60, not working, born in Pakistan, Muslim, probably worked in textiles up to 15 years ago, so I could fill it in. (EN8) [There is no suggestion that this intelligent imputation of details was repeated by other enumerators, but it is not unlike the automated imputation during census processing, referred to in a later section.]

The three-question checking of posted-back forms undoubtedly greatly improved the quality of key questions on a significant number of forms. During processing the missingness and inconsistency for all questions will be measured and reported. The indications from fieldworkers suggest it may be much higher than the value of under 1% that was reported for most questions in 1991 (OPCS/GRO(S), 1994).

The only category of people that fieldworkers expected were missed off inadvertently was children. They were aware from their checking that many households felt they did not have to complete all details for children, and that there was no way they could identify forms where children had been missed off altogether. They suggested clearer specific instructions to include children.

5.3 Refusals

Complete refusal to fill 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 S Derbyshire. (EN10)

There's been quite a positive attitude among residents. Few refusals and all taken in the end. (TL9, Milton Keynes)

People were very pleasant; some people were gruff, but no problems at all. (EN19, Cambridge).

On the other hand, in areas of harder enumeration, other problems of retrieving forms meant that outright refusals were not high on fieldworkers' agenda, but were a problem.

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)

I had 2000 forms unaccounted for, and you don't mop up that number of forms. We were asked who should be prosecuted. One is so demotivated, one couldn't harass the elderly and asylum seekers to bring them to court. No way could I suggest anyone for prosecution. I'd probably still be in court next February given the ONS management skills shown up to then. I don't think anyone has done compliance work. (DM12)

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.

We didn't get our instructions on that until the end of April, and in the main we haven't had training to interview and give a caution. 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 household missed from the enumeration. Those refusing to be included on a returned form would not be so noticeable to the fieldworkers. The following is an exception.

I 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 enumerator 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 District Managers 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 7th 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 co-operation and effort by 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 enumerators would enumerate. While the enumeration may have been successful, indicators of the number of Leeds' households sharing amenities will need to be treated with some caution when compared to other cities where halls of residence would not be counted as households at all.

5.5 Community Liaison

This section finishes with reference to community liaison and in particular the response of Asian communities to the Census. The central census offices gathered contacts during the year 2000 using publicity and regional 'road-shows' about the census. This Community Liaison initiative had been 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 enumerators. The target groups included all those who might be hard to enumerate, including communities where the mother tongue was not English but also specific demographic groups including young adults. However the tasks of community contacts were not spelled out, and it is not clear that the contacts were passed to field staff and whether they used them effectively.

Local community organisations did help in a variety of ways, in some cases with clear success.

The Sanghit Centre was the best help to filling out the forms. People went to them and got help. (DM2)

The Bangladeshi Youth Organisation and Gurlington Centre and the Council of Mosques all helped people fill it in. One of my enumerators set up a desk in the BYO and helped people fill it in. I let him do it because he got quite a few forms back that way. (DM8)

The Council organised a help-day with the Council for Voluntary Services – but it was not well attended – it wasn't local enough. (TL9)

There was one community centre that charged people £25 a time to fill in forms for people, supposedly for them to avoid the £1,000 fine for non-completion. I tried to take it up, but the Local Authority didn't fund the centre and there was nothing I could do.

(CAM2)

I went to mosques and others in order to recruit Asian fieldworkers, and inevitably there talked mainly to males. They were interested but saw it was 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. It would be interesting to know how the Census is taken in Pakistan, what understanding people might have of it from there. (CAM2)

5.6 Family composition

The doubt about the completeness of the Census for the Pakistani population was repeated but was not universal. Concerns were raised about capturing the varied family arrangements encountered, which could also apply more widely than the South Asian communities from which these comments were derived.

If there's 13 people in a house, there's no way they'd all be got. (DM3)

People move a lot between family houses leaving some empty. (DM2)

One family I took a continuation form because he said there were seven of them. When I took it he wasn't there but the woman said there were eleven, the man didn't know, so I left two extra forms. But next time someone different was there and said there were just 10. So I've taken one blank form back and there's 10 filled in. (EN16)

There's one with 2 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, its not for me to question that kind of thing. (EN16)

Often its 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 – see later)

This evidence points to a likely under-coverage and poorer quality of data from extended families, and from other large households. The Census and more generally almost all 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. Nor is it the case for many dual households where children have shared care by parents living at different addresses.

6. After Census day: postback and collection by enumerators

While postal return of Census forms was taken up by a majority of households, delays in their return caused severe problems for the enumeration.

For the first time in the UK, householders were asked to post their completed forms in envelopes addressed to the District Manager, to whom Royal Mail was to deliver all forms received. The District Manager and Team Leaders were to check all forms and let enumerators know those that had been returned and checked, in time for the follow-up by enumerators of those not received, which was to begin on 9th May.

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. They should have started the process a bit earlier, but I had to wait for the Team Leader to give me the list of non-returns. I got the list two days after we were supposed to start. It meant that after that I was out every night, following it up and it took more time than I thought. (EN10)

One of the interviewed Census Area Managers had done the job during the 1999 Census Rehearsal, and summarised the experience of 'postback' then and in the Census itself.

The rehearsal 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, because that was what happened in the Rehearsal. There was a solution that we suggested at rehearsal – leave the collection to a later date. The enumerators could have had a three week rest and then concentrated on a smaller number of non-returns. [In the Census itself] ONS allowed one week and 2 days, to 9th May, for the forms to be received and sorted, returned to the District Manager, checked and then each enumerator to be informed of the forms that had been received. With a second class post contract, there was never any expectation that forms would come back on 30th April or 1st May. Added to that, the 5th, 6th, and 7th were out, the Post Office were not working Saturday or Bank Holiday Monday. So they were overwhelmed on the 8th May. (CAM2)

It appears that Royal Mail did not know of the importance of delivering posted forms to District Managers before the Bank Holiday weekend, and ONS did not foresee the financial implication described by this Census Area Manager, a very large one when multiplied across the country.

Imagine an average ERB 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)

The choice of day for the Census is an extremely difficult one, attempting to avoid Easter holidays, and later summer holidays, for the whole period of census fieldwork, including the follow up 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 postback strategy to be a success. Fieldworkers found it a “disaster” in ways that will impinge on coverage as well as the quality of results. The problem was not the number of postal returns – which exceeded the ONS expectation. Fieldworkers were not against postback 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 field worker interviewed without exception.

The postback 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 enumerators 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 only achieved by a tremendous (and expensive) effort by District Managers and their Team Leaders to sort and check the received mail, within a tightly squeezed time scale. The following are typical descriptions of the intensity of the work that postback created at this stage.

They delivered approximately 5400 forms which I was expected to check. This 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)! Some days I spent 12 hours plus opening, sorting and checking forms, obviously mistakes will have been made when it was necessary to spend such long periods on a task such as checking. Although approximately 40% of my forms were returned prior to Census Day it was unbelievable how long it took to process the returns after Census Day. It was essential that you kept up to date with which forms had been received, mainly to avoid enumerators chasing up forms unnecessarily. Making phone contact with 12 enumerators daily during follow up was also a very time consuming task! (TL13)

Post back meant me and 3 Team Leaders had to count 8,000 forms. It didn’t take long for one of them to say that if the average time to check one form is 3 minutes, this isn’t on unless the forms come swamping in straight after census day. In fact there was no meaningful delivery for 3 days. It was quite obvious that I needed a small army of enumerators coming in to sort forms, and even then we weren’t going to meet deadline. It became clear I could use enumerators for sessional hours to do this; by that method I got into follow up only 2 days late. (DM12)

When enumerators did return to the field, they found that many householders whose form had not been received insisted that they had already posted their forms. While some were clearly mistaken (“Next time you went back, it’s ‘Here you are.’”), more often the householder was convincing. A very great number of forms were ‘stuck in the post’. There were different approaches to this problem, and some concern at what enumerators were asked to do.

It was difficult because they went back accusing people for not doing something – not sending it back – which is quite challenging. ONS said we should ask people to fill in another form – 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)

We were supposed to ask them to fill in another form, but because we had been told that there was a delay in the post I felt that I couldn’t, I believed it would arrive. I didn’t see any point in them having to fill out another form. The impression I got from my Team Leader was that the forms did come in. (EN10)

Some people said they’d do another form if you want to, but we didn’t ask them to do that. 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 field workers had earmarked for census collection now had to be re-arranged because of the delay. Enumerators having developed an understanding of their Enumeration District, they 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 District Manager explained in a briefing note to his enumerators that “Your frustration is shared by those of us who have spent three weeks trying to prize postbacks out of Royal Mail.” (DM12). In many areas the Royal Mail were dealing with census forms only after all other mail, and in any case were not able to provide the quick turn round envisaged in the census planning. As a consequence, in many areas the enumerators were out in the field later than the planned 18th May, when they were supposed to finish all their paperwork and end their contract on 21st May. Some reported a few days extra, others worked until the 26th, and one until the 30th May. A mop-up of remaining households was then to take place, by Team Leaders and the most successful enumerators. Extra costs were incurred to pay the enumerators their later work, over and above the £1 per unreturned form referred to above (this rate as others was more in London, less in non-city areas). A further consequence was some interference with the Census Coverage Survey that went into the field on 24th May.

Postback 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 £9million overspend on the Census budget in 2001/2.

7. Management issues

This paper now turns to two general management issues raised by the census field staff. First, the extent to which contracting out of major parts of the census was appropriate. Second, how the leading role of ONS' own management might be improved for the future.

7.1 Subcontracting the census operation

Agencies and commercial companies were contracted to perform 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)
- recruitment of enumerators (adverts supplemented by Job Centres, and in later stages by recruitment agencies in some areas)
- the Census Helpline call centres (Cable and Wireless)
- the postal collection and delivery to District Managers of posted census forms (Royal Mail, aided in some cases by TNT)
- the pay of field staff (ADP Chessington, partly sub-contracted to LASON)
- the scanning, image recognition and coding of completed census forms, including manual coding where necessary (Lockheed Martin).

The pre-printed address lists, recruitment of enumerators, and postback have all been referred to already. The helpline, delivery of forms and the pay of field staff all suffered difficulties, which will be referred to in more general terms here.

Some doubted whether ONS have 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 were not dealt with in a re-assuring way but resulted in great frustration for callers and unnecessary ("and usually

duplicated”) requests to the census field staff. One hundred extra staff were recruited and given only one day’s training. Later, the help-line were sending requests to census field staff after the end of fieldwork, which they had no way of responding to. One District Manager 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 about the helpline that “if they couldn’t understand what the person was saying they just put it down as needing an interpreter” (DM7).

Pay of enumerators was contracted to the same company that deals with ONS staff pay. Their systems were seen by census district managers 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. There were some forms to put in a blue envelope, then inside that different forms had to go within the brown envelope, loosely referred to as the envelope for census offices. But this didn’t match up exactly with what was on the envelopes. (DM12)

Enumerators’ pay was frequently delayed, and details 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. It’s really difficult to get them paid. 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. There were so many forms. With 44 enumerators, well 2 went, but for the rest 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 15th June as stipulated in their contracts affected many thousands of enumerators. Their District Managers were upset at the lack of means to remedy the situation and even more at their perception that ONS was not only not sorting it out but did not see it as a major problem. ONS was clearly given assurances by the contractor but had no means of insisting that those promises be met: Len Cook (ONS Director) in a letter to all District Managers assured them that all enumerators would be paid by 29th June, but that did not happen. ONS ended by transferring over a hundred staff within their own offices from other work to sorting out field staff pay, at great expense to the organisation.

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 4,000 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. The return of forms from Royal Mail, was another case where a contractor could not respond to emergencies. In at least one area, the return was further complicated by the sub-contracting of delivery from Royal Mail to a TNT office:

The TNT was driving in his own Range Rover; he'd turn up with 12 bags, you'd wait from 12 midday when told he might arrive until 3.30 staring into space. 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)

Field staff clearly got the impression that ONS did not have the means to sort out these problems. It was field staff themselves who suffered as a result. Pay delays caused extreme hardship in some cases, where the pay was needed for essential expenditure, and any delay in pay was demoralising for a field staff working very hard to make up for the difficulties that postback 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.

7.2 ONS management

Census Area Managers were trained to expect the census operation to involve more teamwork with themselves as key players, but were disappointed.

ONS made a decision to change the role and training of CAMs since the last census. Previously it was extremely hierarchical, like an army organisation. This time, the CAM was to have complete flexibility as to how to use the resources, and was to be the public face of the census, to get media interest and so forth, also making links in the community, getting groups aware of the census. But like in local government, the right words are said but the actions are different. 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. In fairness, when issues were pointed out, they tried to alleviate it. For example, the budget read 14p per enumerator for paper, 3p for paperclips, and so on, it had a hundred headings. They did change that to an overall budget with fewer headings. (CAM2)

The operation was described as "bureaucratic", "paper heavy", "civil service", from particular things such as when sacking a non-working enumerator, or changed instructions to box labelling, to aspects that had a more general impact.

2001 was worse than 1991 and 1981. I don't remember those forms then. This time we were wrapped up in red tape and bureaucracy, plus the liaison with Royal Mail. I'd like to say I've enjoyed it but I haven't. (others – agreement). (DM1)
I have cut corners, for example written no diary, to keep it to the designated hours. The paperwork was crazy. (DM14)

They want the most amazing things back: 4 letter openers, one broken. I can understand the sensitivity to information, but empty forms – I don't know. (DM12)

There are certain other things that were missed. Among the refugees and asylum seekers in Kirklees and Calderdale, there are a significant number of Kurds. ONS produced census information in 18 languages but Kurdish was not one of them. In my own area, there was in the region of four hundred Kurds. You cannot easily get a Kurdish translator for love nor money. I found one and asked ONS if I could translate the notes. ONS said 'No', as it had to be done to their high standard. They said they would look at it. Nothing was done, except in Sheffield, they did something in-house and photocopied it, but it was too late to use here. Again, the director said things should be flexible, but half way down the chain they say no, that it's got to be done their way. (CAM2)

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. District Managers did manage to find ways of using willing enumerators 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 enumerators.

Such a large and short-term operation as the census, where standard procedures are important, would be hard to organise very flexibly, but the rigidity of the 2001 Census procedures, some induced by commercial contracts, was not the optimum. Information Technology was mentioned as an aid which was not made sufficient use of.

I think it would be cost effective to supply IT for all the District Managers to do a lot of the work. 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)

CAMs were linked by email to each other, and this was one of the successes of the Rehearsal. Our suggestion after the Rehearsal was that information should come from District Managers to CAMs, who would feed that information on to HQ. The District Managers should have an IT system. We even suggested that if this was too expensive, let's build into the DM job description the need to have a computer and willingness to upgrade. In the event most applications for DMs were made by the Internet so it would have been feasible. What was done was different. DMs reported by phone to HQ on recruitment and later on response rates, then CAMs had access to the data via the Internet. To be honest, it worked terribly. I set up a manual system myself to be aware of what was going on. If one had a system like Lotus Notes, that ONS itself uses, one could amend it as needed. But what was given us was a product of Lotus notes, one couldn't change anything about how information was given to you. For example, a report might be very wide for responses from each of 20 DMs, but there was no way of manipulating it to print it out on one page. (CAM2)

Feedback was insufficient for field staff to feel part of a census team; a suggestion that District Managers be encouraged with a competition to get the best response within a Census Area fell on deaf ears. A sense of poor management at ONS level was reinforced by significant events that field staff were aware of. For example, staff were laid off in reverse order of seniority – Area

Managers before District Managers – so that remaining issues (including unresolved pay) had to be handled without support. The head of census field work was promoted out of Census Division before the end of the fieldwork.

At my interview I was asked if I will leave the country at any stage in the procedure and had to negotiate with my wife to make sure we moved our holidays out of the period. So I was 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. (DM12)

It seems that Census operations could in theory be managed much more successfully than in 2001. Just to what extent and in what way should be the outcome of a deeper review such as that of the national Statistics Commission.

8. Response rates and the One Number Census

During the 2001 Census, one aim of Census planners has been to reduce the differences in coverage between areas and population groups. This aim was probably thwarted by the lack of flexibility to re-direct fieldwork resources between census Districts, and the difficulty of monitoring response caused by the postback delays. Responses have been relatively hard to gain from locked blocks of flats, student housing, and single-person households, and there are many more than ever before in each of these categories. However, with the effort made by fieldworkers, household response rates rose well above 90% even in most city areas, though across many Inner London Boroughs and in some other areas they remained well under 90%. Response rates here are measured through the interviews as the number of returned household forms divided by the sum of these and the number of dummy forms for other households reported by enumerators as containing residents.

These household response rates will rise further as the census offices receive forms posted back late. ONS were in summer 2001 expecting an overall response rate of 95% of household spaces, with the majority of the remainder being vacant properties (ONS/GRO(S)/NISRA, 2001:2) – thus an overall household response rate of 98% or higher. The final response rates may well be sufficiently high even if they turn out to be less than in 1991, if the ‘One Number Census’ procedures for validation and correction of census coverage are successful. In the 1991 Census it was not so much the level of non-response as the lack of effective measures of its location and characteristics that caused dispute.

For 2001 a Census Coverage Survey much larger than in 1991, involved interviews with 300,000 households in England and Wales, and was replicated in Scotland and Northern Ireland. It checked on the Census enumeration, with the aim of directly measuring age-sex specific non-response in 100 areas of the UK, and accurately modelling it for each Local Authority District. A series of quality assurance procedures that are being described to census data users ahead of their use are intended to cope in an agreed manner with larger non-response if that has unfortunately occurred.

The same coverage survey will measure the characteristics of those missed in the enumeration, both whole households and individuals missed from within enumerated households. Extra census

records with those characteristics will be created ('imputed') in appropriate places within the Census database. All tables of output will be based on this augmented database, corrected for undercount – thus the term One Number Census. In this way, 2001 census outputs due in late 2002 and in 2003 will be partially estimated but of better quality than could be gained from the Census enumeration alone (ONS 2001a, 2001b).

The One Number Census procedures are mainly new for 2001. As in 1991, a set of 'hot deck imputation' and validation procedures will also fill in gaps in census forms due to questions omitted by a respondent or not captured by scanning procedures.

So long as the coverage survey captures sufficient of those missed by the census to estimate the remainder successfully, the severe difficulties reported by fieldworkers will be lessons to learn from rather than represent a heavy spanner in the works of the census operation and the quality of the resulting data.

9. Summary and discussion

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

Along with other feedback, the interviews can be used to help identify, monitor and prepare for possible difficulties in the scanning of census forms and their processing through the One Number Census procedures. The likelihood of higher rates of missing households and missing items within forms than in the past, the difficulties with the relationship question and the likelihood of many households having completed more than one form after delays in Royal Mail processing, have been highlighted above. The observation that many forms were completed poorly, with answers outside boxes, suggests monitoring how such cases are dealt with during the scanning and coding of the census forms. The Census Office has a copy of the full transcripts of all the interviews.

Feedback from field staff has also highlighted issues that the current reviews of the Census could take on board. If the Census no longer gains commitment from a very high percentage of the public, the simplicity of the questions should have a premium. Field staff made a variety of suggestions, including removing difficult questions and ensuring that each person's questions are placed in the same format in the questionnaire. Postback should be reviewed on exactly the grounds it was rejected before the 1991 Census: expense, loss of control and reduced opportunity for fieldworkers to check and improve the census forms. In spite of its success in gaining a majority of returned forms in 2001, it requires a longer period and more resources for fieldworkers to know who has returned a form and then focus on those that have not.

Experienced census field managers felt that the 2001 Census resources and management were so inflexible as to frustrate the declared aim of reducing differential undercount, and to magnify the problems thrown up by new procedures of postback and pre-printed 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.

These are all issues that the ONS and the Statistics Commission could address both to enhance the 2001 Census and to improve future censuses.

The fieldwork suggests considerable variability in the coverage and quality of the data, which will concern users of census data. It is too early to know whether this variability will be greater than in the past. The Census Coverage Survey and the One Number Census procedures will measure this variability and go further than in the past to reduce it. If the One Number Census achieves an accurate correction for coverage, and if the editing procedures fill gaps in the questionnaire responses, then the picture we gain from the census will be on average correct, and not biased.

There will nonetheless be greater uncertainty in the census results for some groups than for others, including greater uncertainty for poor and socially excluded groups but also for young men generally, for the significant number of people living in locked blocks of flats, and for young children. Users of census data should expect that ONS make available for review records of the quality of census data, drawn from the fieldwork and processing.

ONS will maintain a full audit trail on the main census database of each invalid, inconsistent and missing item that is imputed on a returned form, and of all records for people and households imputed by the One Number Census procedures. A review of the quality of data and the fieldwork will also require records of the numbers of duplicated forms, and the number of households recorded by the enumerator as residential but not returning a form. The analysis of such records or summaries of them will give an understanding of the types of people hard to enumerate, the geographic variability in quality of census data, and the extent to which the One Number Census is successful for small geographical areas. The plausible creation of records by the One Number Census procedures may mislead in areas of particularly poor quality census response, which should therefore be highlighted.

In the UK, published feedback from census operations has in the past been limited to tests before the main census itself (eg. ONS, 1998; Moss, 1999). The transcripts of census fieldworker interviews in this paper are not a direct record of the views of those who were asked to fill the census forms. Ethnographic study (as summarised by de la Puente, 1993, for the United States) or interviews with the public close to the census date (as Angel de Lucas, 1992, for Spain) would identify the attitudes and circumstances that result in a successful completion of the census schedule, and could usefully be part of the next census.

Acknowledgements

Thanks to the 2001 Census fieldworkers, all of whom gave much more than can be reported here. In the text, enumerators (EN), team leaders (TL), District Managers (DM) and Census Area Managers (CAM) are identified by a number. Those with the same number worked in the same area.

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