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**Use of the Internet as a data collection tool:
a methodological investigation of
sampling and mode effect**

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**Thesis submitted for the degree of
Doctor of Philosophy**

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Volume 2

Table of contents

Volume 2

List of tables	5
List of figures	6

PART III –

MODE EFFECTS IN STUDIES OF SEXUAL BEHAVIOUR

7	Web and pen-and-paper survey item nonresponse	8
7.1	Introduction	8
7.1.1	Item nonresponse and its effects	9
7.1.2	Sensitive content	12
7.1.3	Respondent influences	14
	7.1.3.1 <i>Inadequate understanding or comprehension</i>	18
	7.1.3.2 <i>Low motivation or effort</i>	21
	7.1.3.3 <i>Retrieval of information</i>	23
	7.1.3.4 <i>Withholding available information</i>	25
	7.1.3.5 <i>Belief in the adequacy of response</i>	27
7.1.4	Interviewer influences	28
7.1.5	Questionnaire influences	30
	7.1.5.1 <i>Question routing</i>	34
	7.1.5.2 <i>Question order</i>	35
	7.1.5.3 <i>Data checking</i>	36
7.1.6	Mode influences	38
	7.1.6.1 <i>Computerisation and sensitive behaviour</i>	38
	7.1.6.2 <i>Use of the Internet</i>	42
7.2	Methods	46
7.2.1	Sample comparability	46
7.2.2	Questionnaire comparability	47
7.2.3	Defining item nonresponse	48

7.2.4	Data analysis	50
7.2.4.1	<i>Item nonresponse for each respondent</i>	50
7.2.4.2	<i>Item nonresponse for each question</i>	51
7.2.4.3	<i>Quantifying item nonresponse</i>	51
7.2.4.4	<i>Analysing item nonresponse</i>	52
7.3	Findings	55
7.3.1	Influence of respondent variables	55
7.3.2	Influence of questions and survey mode	68
7.4	Discussion of findings	85
7.4.1	Implications for researchers	91
8	Participating in online and offline qualitative interviews ..	92
8.1	Introduction	92
8.1.1	Interviews in social research	93
8.1.2	Internet-mediated communication	95
8.1.3	Online interviews	98
8.1.3.1	<i>What are online interviews?</i>	98
8.1.3.2	<i>What are the pros and cons of online interviews?</i>	99
8.1.3.3	<i>Features of synchronous and asynchronous interviews</i>	102
8.1.4	The online interview in context	106
8.1.4.1	<i>Respondent use of the online medium</i>	106
8.1.4.2	<i>Online identity and self-presentation</i>	108
8.1.4.3	<i>Online rapport and trust</i>	111
8.1.5	Interviews with sexual content	114
8.2	Methods	117
8.2.1	Interview procedure	119
8.2.2	Interview piloting and topic guide development	121
8.2.3	Ethics for methodological interviews	124
8.2.4	Analysis of methodological interviews	126

8.3	Findings	130
8.3.1	Respondent profile	130
8.3.2	Methodological interview duration and word count	133
8.3.3	Internet and HIV interview experience	135
8.3.3.1	<i>Freedom of expression</i>	135
8.3.3.2	<i>Nature of the interview interaction</i>	138
8.3.3.3	<i>Verbalising behaviour</i>	140
8.3.4	Respondent perspectives on personal privacy	141
8.3.4.1	<i>Anonymity and confidentiality in the interview</i>	141
8.3.4.2	<i>Perception of general online privacy</i>	142
8.3.5	Rapport from the interviewer's perspective	144
8.3.5.1	<i>Paralanguage in the methodological online interviews</i>	144
8.3.5.2	<i>Online speed of interaction and multi-tasking</i>	146
8.3.6	Practicalities of the methodological interview	148
8.3.6.1	<i>Interview arrangements</i>	148
8.3.6.2	<i>Use of technology in online and face-to-face interviews</i>	152
8.4	Discussion of findings	154
8.4.1	Implications for researchers	158

PART IV – CONCLUSION

9	Concluding discussion	160
9.1	Introduction	160
9.2	Researching the population of gay and bisexual men	160
9.3	Collecting data on sexual behaviour	167
9.4	Limitations and future directions	170
List of appendices		171
Appendices		172
References		239

List of tables

Volume 2

Table 7.1: Significant associations between subgroups and item nonresponse	59
Table 7.2: Significant associations between subgroups and number of questions	63
Table 7.3: Coefficients predicting item nonresponse for Internet respondents	66
Table 7.4: Coefficients predicting item nonresponse for gym respondents	67
Table 7.5: Item nonresponse associated with questions	69
Table 7.6: Item nonresponse for subsets of questions in web and pen-and-paper surveys	72
Table 7.7: Item nonresponse to equivalent questions in web and pen-and-paper surveys	80
Table 7.8: Questions with disproportionately high pen-and-paper item nonresponse	82
Table 8.1: Profile of respondents in methodological face-to-face interviews	131
Table 8.2: Profile of respondents in methodological online interviews	131
Table 8.3: Methodological interview duration and word count	133
Table 8.4: Use of paralanguage by respondents (and interviewer)	145
Table 8.5: Delay between interview with MD and initial contact by AE	150

List of figures

Volume 2

Figure 7.1: Beatty and Herrmann's decision model of item nonresponse	17
Figure 7.2: Radio button question format	32
Figure 7.3: Drop-down box question format	32
Figure 7.4: Unacceptable and acceptable survey instructions	34
Figure 7.5: Data checking pop-up	37
Figure 7.6: Proportion of questions skipped by respondents	56
Figure 7.7: Item nonresponse for the 78 matched questions	71
Figure 7.8: Proportion of item nonresponse for sensitive sexual questions	75
Figure 7.9: Proportion of item nonresponse for alcohol and drug use questions	76
Figure 7.10: Pen-and-paper survey format for questions about alcohol and drug use	77
Figure 7.11: Web survey format for questions about alcohol and drug use	77
Figure 7.12: Pen-and-paper survey format for question about HIV positive men	81
Figure 7.13: Format of question about number of sex partners in past 3 months	83
Figure 8.1: Extract from topic guide	123
Figure 8.2: Extract of framework used in analysis	127
Figure 9.1: Kinsey's heterosexual-homosexual rating scale	163

PART III
MODE EFFECTS IN STUDIES OF
SEXUAL BEHAVIOUR

7 Web and pen-and-paper survey item nonresponse

Synopsis

Secondary analysis was used to compare the item nonresponse in the Internet and HIV 2003 web survey with the 2003 pen-and-paper survey completed by the gym sample. Use of the web survey was associated with a significant reduction in item nonresponse, although it did not appear to reduce item nonresponse to sensitive questions over and above other questions.

7.1 Introduction

Part two of this thesis focussed on factors associated with generating self-selected Internet samples of gay and bisexual men. It examined the reasons why men may participate in web surveys of sexual behaviour, the impact of drop out and the men that we might expect to find in the final sample. Part three shifts the focus from the sample recruited to the data collected. Having established that the Internet provides a valuable new location for sampling gay and bisexual men, it is important to investigate the quality of the data that are likely to be generated. Part three of this thesis examines the influence of the Internet mode on the data collected using quantitative and qualitative methods.

Chapter 8 will explore the Internet mode in qualitative research. This chapter presents an examination of the individual's response to questions within the survey and addresses the question:

“What is the modal difference in item nonresponse when gay and bisexual men complete web and pen-and-paper surveys of sexual behaviour?”

This introductory section begins with a description of item nonresponse and its effects and goes on to discuss the impact of sensitive content. It continues with an

exploration of a range of influences on item nonresponse: the respondent, the interviewer, the questionnaire and the mode.

7.1.1 Item nonresponse and its effects

In the same way that unit nonresponse is a measure of how completely the selected sample responds to the survey, item nonresponse is a measure of how completely the selected items are answered. It may occur because a question is skipped on purpose or by mistake, because the respondent does not know the answer or is unable to give one, because the appropriate answer is not included among the response categories or because the response given is unreadable (de Leeuw 2001). It results in a failure to obtain the information required by particular questions (Groves 1989) and in this way is seen as introducing a gaps into the data matrix (de Leeuw 2001).

Such information gaps not only occur when a respondent refuses point blank to answer a question but are also said to occur if the respondent gives a “don’t know” response (Groves 1989), which may be a polite way of refusing to answer the question (de Leeuw 2001). The informational content of the “don’t know” response must be assessed, however, before it can be dismissed as item nonresponse. Thus when men are asked about their boyfriend’s HIV status in the Internet and HIV surveys, “don’t know” is an important response which carries a great deal information.

Differences have also been found to exist in how respondents use “don’t know” and refusal to answer. Thus, 7% of questions resulted in “don’t know” responses and 1.5% in refusals, with more sensitive questions resulting in more refusals and fewer “don’t knows” and questions requiring more cognitive effort resulting in more refusals *and* more “don’t knows” (Shoemaker *et al.* 2002). Although a number of studies incorporate “don’t knows” into item nonresponse, such differences have led to restricting the definition of item nonresponse to item refusal in the present study, as will be described in the methods section.

Item nonresponse may be described as “ignorable” where nonresponders and responders have similar distributions on the variables of interest and “non-ignorable” where this is not the case (Copas & Farewell 1998). When nonresponders and responders are similarly distributed, the effect of excluding cases containing item nonresponse from the analysis will reduce the sample size and, if extensive, result in less statistical power and create problems where multi-item scales or multivariate analysis are used (Dickinson & Kirzner 1985). When those who gave responses differing systematically from those who did not, item nonresponse will also lead to biased population estimates (de Leeuw 2001; Kupek 1999). In the context of research on sexual behaviour and HIV prevention, such measurement error may distort estimates of high risk behaviour and weaken epidemiological work (Catania *et al.* 1993). It is therefore important to encourage the respondent to provide a full response.

Although these effects of item nonresponse mirror those of unit nonresponse, Groves (1989) considers that the origins of item nonresponse have more in common with other types of measurement error:

“it is much more a part of the measurement process than is unit nonresponse, and the cognitive and affective psychological influences to item missing data resemble those involving measurement error” (Groves 1989: 156).

In the light of this, the following review of the literature will discuss item nonresponse in the context of measurement error.

The chapter will compare item nonresponse in the 2003 Internet and HIV web survey and the 2003 pen-and-paper survey that was completed by the gym respondents in order to examine whether there is a mode effect on this aspect of data quality. Couper (2001) recommends that, when comparing the data quality of web surveys with other survey modes, the researcher should be explicit about the type of web survey, the nature of the survey mode with which it is being compared and the source of error that is the focus of attention. The type of web survey adopted here and the nature of the pen-and-paper survey with which it is compared are described in detail

elsewhere (Volume 1, pp40-44). Item nonresponse was chosen as an indicator of data quality for the following reasons.

Item nonresponse is one of four sources of measurement error that may apply to questions of sexual behaviour. The other three are failure to report having participated in an activity, underreporting frequency of participation and overreporting frequency of participation (Catania *et al.* 1990). These other errors are difficult to detect, however, because of the absence of any reliable form of external validation (Catania *et al.* 1990; Saltzman *et al.* 1987). Although examination of concordance or divergence of reported sexual behaviour on a number of measures may prove insightful (Coxon 1999), methods of validating self-reported sexual behaviour are limited to test-retest studies, independent replications within the same population and comparison of reports by regular partners (Turner *et al.* 1997). A review of the literature from 1990 to 1995 found that reliability of self-reported sexual behaviour was most often examined using test-retest equivalence and internal consistency within the questionnaire and the authors suggest that congruent findings from different methods may also be used as an indicator of reliability (Weinhardt *et al.* 1998).

Whatever means are used to test reliability, however, replication does not necessarily confer validity upon the measures. Thus, the test-retest reliability of reported sexual behaviour might be partially attributed to memory of the estimates rather than memory of the actual behaviour.

Item nonresponse as a measure of data quality has the advantage of being easily quantifiable and has been used as a measure of data quality in a number of studies (eg Kwak & Radler 2002). Furthermore, refusal rates are the most frequently reported index of measurement error in sexuality surveys (Catania *et al.* 1993). While recognising that respondents may not always provide the optimal response and that “*lack of missing data does not necessarily imply better data quality*” (Couper & Rowe 1996: 97), it is certainly the case that an excess of item nonresponse is an indicator of poor data quality.

The source of item nonresponse may lie with the respondent, the interviewer, the questionnaire, the mode of data collection or an interaction between these influences (Catania *et al.* 1993; de Leeuw 2001). The following review will therefore examine how each of these influences has been found to impact item nonresponse in order to set the context for the modal comparison undertaken here. As the analysis is concerned with the web and pen-and-paper mode, the review will focus on item nonresponse and related issues of measurement error in the context of self-completion, although the broader differences between response to interviewer-administered and self-completion surveys will be identified.

7.1.2 Sensitive content

A key issue for the present analysis is that of response to questions of a sexual nature. Such questions are commonly labelled “sensitive” and are said to elicit socially desirable responses to the extent that they conform to the respondent’s concept of what is socially acceptable. Although Catania (1997) argues that questions of sexual behaviour may be considered to fall at one extreme of the sensitivity distribution, I have argued that question sensitivity is a more imprecise measure than is often assumed and depends on a number of factors. Even though at least some questions of sexual behaviour will be sensitive for at least some respondents, it does not mean that they will result in item nonresponse. Thus, 34% of respondents considered sexual behaviour to be an overly personal research subject but only 6% and 7% of respondents skipped questions about sexual intercourse and masturbation respectively in the same study (Bradburn *et al.* 1978). The authors concluded that the proportion of item nonresponse was a poor indicator of the potential threat of these questions.

Low levels of item nonresponse have been similarly found in a number of surveys of sexual behaviour. 90% of Natsal 1990 respondents omitted less than 6% of questions in this combined interviewer- and self-administered survey. This was considered to be ignorable (Kupek 1998) and led to the conclusion that,

“the vast majority of respondents to this survey complied with the questionnaire”
(Kupek 1998: 593).

Very little item nonresponse has been found in the National AIDS Behavioral Survey, an RDD survey of sexual behaviour (Catania *et al.* 1993; Peterson & Catania 1997). Only 1.5% of 18 to 29 year olds and 2.9% of 60 to 75 year olds refused to answer at least one question and it was concluded that once cooperation had been engaged, respondents were generally willing to answer the questions posed (Catania *et al.* 1993). Item nonresponse was also low for questions of sexual behaviour in an experiment investigating the impact of four survey modes (Jobe *et al.* 1997) and comparatively low in the self-completion section of a survey of sexual behaviour and attitudes (Johnson & Delamater 1976). The latter study found that item nonresponse was highest for questions about age at first masturbation (19%) and at first sexual intercourse (20%) and not meaningfully related to sociodemographic profile. The authors suggest that the sensitivity of respondents to questions of sexual behaviour may be overestimated and that of researchers and interviewers may be underestimated.

Singer (1978) found that most sensitive questions in an interviewer-administered questionnaire were skipped by less than 2% of respondents but questions on masturbation (10%) and income (11%) produced the highest item nonresponse. Indeed, questions on income commonly produce the highest levels of item nonresponse in surveys (Catania 1997; Shoemaker *et al.* 2002). Kalton (1983) also reports that simple sociodemographic questions are likely to produce little nonresponse, whereas questions about expenditure may result in item nonresponse of more than 10%. This is reflected in a postal survey of health issues which obtained low item nonresponse for age (2%), marital status (1%), ethnicity (1%) and education (1%) but a higher rate for annual household income (9%) (Gilbert *et al.* 1992).

The above has shown that we should not expect particularly high levels of item nonresponse because of the sexual content of the Internet and HIV surveys or in response to the sociodemographic questions. The surveys do not any contain

questions on income. The following will examine other factors that have been found to impact item nonresponse.

7.1.3 Respondent influences

As discussed earlier, item nonresponse may be influenced by the respondent, the interviewer, the questionnaire, the mode of data collection or an interaction between these influences (Catania *et al.* 1993; de Leeuw 2001). What follows is an exploration of the influence of the respondent beginning with a descriptive account of respondent influences before moving on to a cognitive model.

In an early investigation of item nonresponse in a postal survey, over one third of respondents filled out the questionnaire completely, one quarter failed to answer one question with the remainder missing at least two questions (Ferber 1966). Item nonresponse was higher for women than men, for older than younger and for the less educated. Indeed, age and education have been found to correlate consistently with item nonresponse (de Leeuw 2001). For example, despite the fairly low levels of item nonresponse reported in a postal survey of health issues, questions on sexual orientation and income were more likely to be skipped by females, older respondents and those with less education. Age was also associated with skipping one or more questions in another postal health survey where 58% of respondents provided a complete set of answers (Gilbert *et al.* 1992) and item nonresponse for questions on income was particularly marked among older white respondents (9%) compared to older black respondents (5%) (Peterson & Catania 1997).

Other respondent factors were also implicated in an interviewer-administered survey of elderly respondents which found that item nonresponse was associated with differences in engagement with the interview, interest in the topic, task-related commitment and the respondents' cognitive and physical capacities (Couper & Rowe 1996).

Age and education are also among respondent characteristics related to item nonresponse in surveys of sexual behaviour. A higher proportion of incomplete

responses in Natsal 1990 was associated with lower education, lower social class, non-white ethnicity and difficulties with literacy or language but was not associated with age, religion, marital status or gender. (Kupek 1998). Older age was, however, associated with refusal to complete the most detailed sensitive questions in the self-completion section, where ethnicity and comprehension problems were again implicated (Copas *et al.* 1997). Those who did not respond to one of the self-completion questions about lifetime sexual partners were likely to be older, of lower social class and education and of Asian extraction (Kupek 1999). They were also more likely to skip questions on STD clinic attendance and drug injecting.

Analysis of response to the nine self-completion sexual behaviour questions in the US General Social Survey over three years, found that 5 of these questions had at least 96% completion rates (Wiederman 1993). Although males were more likely than females to respond to 3 out of the 4 remaining questions, item nonresponse for both sexes was more common among older respondents, those on lower income and those with lower educational attainment. No differences were found in relation to religious affiliation or the size of the city where respondents lived but there was a tendency for nonresponders to be less sexually experienced than responders.

Peterson and Catania (1997) found that the effect of increasing age on item nonresponse to sexual questions in the National AIDS Behavioral Survey was more pronounced for white than black respondents and, in contrast to Wiederman, females were generally more likely to respond to sensitive questions. Ethnicity has also been associated with questions about sexual orientation which were more likely to be skipped by minority ethnic than white respondents (Gruskin *et al.* 2001).

The above studies indicate that older age, lower education, lower social class and non-white ethnicity are likely to be associated with item nonresponse in the Internet and HIV surveys. These studies are, however, of a descriptive nature and do not address the processes that underlie these associations. An attempt by Bosnjak (2001) to uncover the underlying process made little progress in the area. He tested whether Ajzen's Theory of Planned Behaviour (1985 cited in Bosnjak 2001) could be applied to item nonresponse in a web survey. According to this theory, the likelihood of

performing a particular behaviour depends on the individual's attitude towards doing so, the social pressure to do so and their ability to do so. These three elements impact upon the individual's intention to perform the behaviour which determines whether or not they will actually perform it. It was found, however, that self-reported measures of respondents' attitudes, social pressure and abilities did not predict the number of answers that they gave to closed questions, although they had limited predictive power for the number of open questions answered.

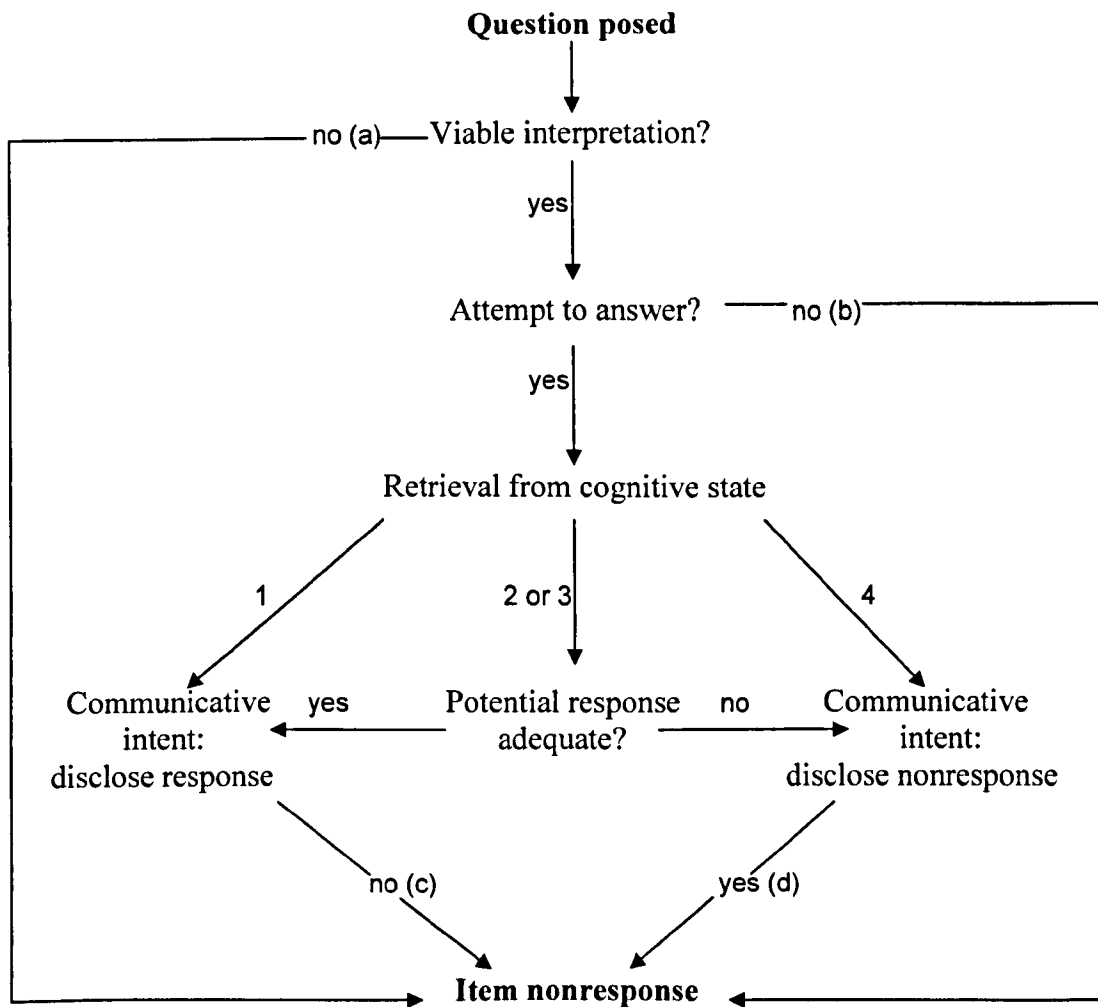
Work on the psychological aspects of response has also been undertaken by survey methodologists Roger Tourangeau and Kenneth Rasinski who defined a four-step cognition model of response to attitude questions (Tourangeau & Rasinski 1988). According to this model, the respondent first interprets the question, then seeks to retrieve the necessary information, which is followed by a process of judgement and finally reporting of the response. Tourangeau and Rasinski highlight the importance of context effects which may be complex and difficult to predict.

As described earlier in this chapter, Beatty and Herrmann (2002) found that the effects of item nonresponse had been well documented but that little work had been done on the psychological underpinnings. They therefore devised a decision model for item nonresponse (Figure 7.1 on the following page), which builds on the original response model proposed by Tourangeau and Rasinski.

According to this model, item nonresponse is the likely outcome of the following responses which occur at points (a) to (d) in the diagram:

- (a) inadequate understanding or comprehension of the question;
- (b) low motivation or effort;
- (c) withholding available information even though it would meet the objectives of the question;
- (d) belief that item nonresponse is the more accurate response given the precision required by the question.

Figure 7.1: Beatty and Herrmann's decision model of item nonresponse



Retrieving the information requested from the cognitive state is also an important part of the process. Cognitive states are classified into the following four categories, labelled 1 to 4 on the diagram, whereby the requested information is:

- 1 available and can be retrieved with minimal effort
- 2 accessible and can be retrieved with effort or prompts
- 3 generatable and not exactly known but may be estimated
- 4 inestimable and not known with virtually no basis for estimation

When respondents were asked to rate their cognitive states with regard to particular questions, the findings indicated that item nonresponse was associated with but not completely determined by cognitive state. It was also found that respondents were generally willing to estimate unknown information but not to the point where such estimations were clearly wild guesses.

Given the potential response burdens that the model implies, Beatty and Herrmann argue that respondents may be taxed to a point where cooperation with further requests for information is purely nominal. They argue that data quality varies along a continuum and researchers need to decide on the minimum level of response certainty that is acceptable to them.

The following uses Beatty and Herrmann's model as a framework for examining the empirical evidence with regard to respondent influence on item nonresponse. As previously described, this source of item nonresponse cannot be isolated from the influence of interviewer, questionnaire or survey mode, which will necessarily be included in the discussion. I will, however, return to the independent influence of questionnaire design, the interviewer and the computerised versus pen-and-paper mode later in this section.

7.1.3.1 Inadequate understanding or comprehension

Belson (1981) has shown a significant potential for respondents from all sectors of the population to misunderstand survey questions and Beatty and Herrmann suggest that this may result in item nonresponse. Although the following provides evidence that the understanding of questions of sexual behaviour may indeed be inadequate, there is little to support a hypothesis that this results in item nonresponse.

In addition to the words and phrases used, the respondent's understanding of the question is shaped by their impression of the purpose of the survey, the context of the question and, where interviewer-administered, the interviewer's delivery (Eisenhower *et al.* 1991). Understanding the terminology is clearly important, however, and the challenge of finding the appropriate words and phrases is likely to

be magnified for questions of sexual activity. This is not only because words used in the vernacular often double as terms of abuse which may give offence in the research setting but also because of the abundance of sexual terms – both formal and colloquial - with which respondents may not be familiar (Wellings *et al.* 1994).

Although the majority of respondents (95%) reported that the terms “anal intercourse” and “vaginal intercourse” were easily understood, one quarter of respondents with the lowest level of education said that they had difficulty understanding these terms (Binson & Catania 1998). This study also found that respondents who had difficulty with terminology may report “zero” when asked about incidence of such activity and the authors concluded that the provision of a response does not necessarily mean that the respondent understood the question.

Even where respondents are familiar with the terminology used, however, they may not interpret such terms uniformly or in the way intended by the researcher. The pilot work undertaken for Natsal 1990, revealed a number of differences in interpretations of sexual terminology (Spencer *et al.* 1988). A minority of respondents confused *oral sex* with *vaginal sex* because they understood the word “oral” to mean “ordinary”. A “sexual partner” might be considered too casual a description of a marriage partner whereas it might be considered as relating to steady partners rather than casual ones among the unmarried. The association of “partner” with long-term relationships was also found in cognitive interviews undertaken by Miller (2002).

Whereas heterosexual men and women are found to associate “having sex” with penetrative vaginal sex, it may be used as a more general term for acts of sexual arousal among gay men and lesbians (Spencer *et al.* 1988). Studies of young adults have found that men are also more likely to have a broader interpretation of “sexual intercourse”, “sleeping with” (Jeannin *et al.* 1998) or “having sex” (Pitts & Rahman 2001). Such differences between the sexes may contribute to the over-reporting and under-reporting by males and females respectively of sexual activity that were discussed earlier (Fenton *et al.* 2001).

Some interesting findings emerged from Miller's (2002) study which used cognitive interviews to explore respondent understanding of questions from a survey of sexual behaviour. Although a definition of sex as vaginal, oral or anal was provided, it failed to establish a consistent frame of reference for the following questions. Thus, respondents had "*preconceived narratives*" about their first sex that were not based on the definition. One of the gay male respondents exemplified the lack of consistency in his thoughts on the question about number of lifetime sexual partners:

"I thought of everyone I had anal sex with first, and then I thought okay, well, there's anal sex and there's oral sex, throw that in there. So, I did remember in that question, but I didn't in the previous" (Miller 2002: 17).

Miller's cognitive interviews also revealed that when questions become more conceptual, respondents may have additional difficulties. Thus, some respondents were unable to fully articulate a conceptualisation of "sexual attraction" when asked about this in relation to members of the same and opposite sex. She gives the following example from one of her female respondents:

"If you like ... when you're around him, you know, ... if you liked somebody when you're around them. It's just something that you ... I forgot what they call it ... something that you get inside you. I forgot what they call it though" (Miller 2002: 42).

The above findings tend to imply that respondents are generally able to interpret carefully worded questions about sexual behaviour although they may apply their own framework of interpretation. An examination of the effectiveness of standard survey pretest techniques however indicated that respondents were often confident about their interpretation of the questions even when these interpretations were mistaken (Oksenberg *et al.* 1991). It is therefore possible, indeed probable, that the Internet and HIV respondents did not interpret the questions in a uniform manner but the evidence indicates that it is unlikely that this was a major cause of item nonresponse.

7.1.3.2 *Low motivation or effort*

Beatty and Hermann's second cause of item nonresponse is low motivation or effort. The effort that the respondent may give to answering the question may be best understood in the context of the theory of satisficing (Krosnick 1991; Krosnick & Alwin 1987). This theory proposes a continuum of responding with optimising at one end, whereby respondents expend the necessary effort to provide an optimal answer, and strong satisficing at the opposite end, whereby respondents expend such little effort that their response may be arbitrary. In between are intermediate levels of satisficing where instead of seeking to generate the optimal answer, respondents may choose one that is merely satisfactory. The level of satisficing is believed to be a function of task difficulty, respondent ability and respondent motivation. Thus, a well-written introduction and interesting questions can motivate the respondent and lead to improved data quality (Dillman 1978), whereas respondents with low motivation may give less thoughtful answers or skip questions altogether (Catania *et al.* 1990).

Couper *et al.* (2004) agree that item nonresponse may be "*the ultimate form of satisficing*" (Couper *et al.* 2004: 119) but believe it is likely to be rare in view of the fact that those with extreme lack motivation would not have started the survey in the first place. In support of this, Martin (1994) found that manipulation of respondent motivation had only a minimal impact on item nonresponse. His study compared response to thirty identical questions that were placed in two surveys that were of high or low interest to respondents, with the high interest group providing marginally but significantly more answers than the low interest group (29.7 vs 28.8 responses).

A financial motivation for completing the survey seems to have even less of an effect on item nonresponse. An investigation of the effects of monetary incentives on response to postal surveys found that once respondents had made the decision to participate, they answered the same percentage of questions regardless of monetary incentives (James & Bolstein 1990).

Compliance techniques may, however, impact differentially on data quality (Groves & Couper 1998) and respondents motivated by more altruistic concerns may be less likely to skip questions. Thus, item response in both open and closed questions was related to perceptions of survey value as well as survey enjoyment (Rogelberg *et al.* 2001) and the presence of the researcher or appealing to altruism elicited lower levels of item nonresponse than egotistic or no appeals in a self-completion survey (Webster 1997). The most complete replies were also obtained in a postal survey when the social utility of the study and university sponsorship were highlighted (Houston & Nevin 1977).

Those who respond early to surveys or volunteer for them may do so because of a greater motivation to participate. They are also likely to provide a more complete response. Late respondents to a Danish postal survey of sexual behaviour were less likely to provide such complete data as early respondents, although they were also likely to be less educated (Biggar & Melbye 1992). Volunteers were less likely to give incomplete responses than randomly selected respondents in a computer network survey (5% vs 12%) although this may be confounded with a mode effect of replying electronically instead of by post (Walsh *et al.* 1992). The HIV positive participants who volunteered for an email survey about barebacking completed it thoroughly with less than 1% item nonresponse (Halkitis & Parsons 2003) and those who volunteered for a web survey supplied most of the personal sociodemographic information requested (Basi 1999).

An analysis of establishment questionnaires which are often completed out of duty, found that just 5% of respondents answered all the questions, although 90% skipped less than a quarter and only 1% skipped more than one half (Tomaskovic-Devey *et al.* 1995). By comparison, respondents who went to the trouble of manually logging in to a web survey supplied income data that was 10% more complete than those who were automatically connected to the survey (Heerwegh & Loosveldt 2002b).

Although the effects of motivation on item nonresponse do not appear to be large, they seem to be pervasive. The evidence indicates that the volunteers in the Internet

and HIV surveys are likely to provide reasonably complete data and that this may be increased among those who respond early to the survey request and who are motivated by more altruistic causes. Catania *et al.* (1993) have suggested that respondents who are at the highest risk for HIV transmission may be those who are most highly motivated to respond and somewhat more complete data might also be expected for this group.

7.1.3.3 Retrieval of information

Beatty and Herrmann (2002) found an association between cognitive state and item nonresponse which supports the proposition that respondents may fail to provide an answer if they are unable to retrieve an appropriate response. Thus, respondents' retrieval processes were aided when questions about particular websites were accompanied by the relevant logotypes, resulting in reduced item nonresponse (Lozar Manfreda *et al.* 2002a).

Although factors relating to retrieval of information are most likely to be implicated in response to non-threatening behavioural questions (Sudman & Bradburn 1974), questions of sexual behaviour are similarly subject to issues of memory. As with other information, the recall of past sexual behaviour is likely to be influenced by the length of the recall period, the vividness of the event, difficulty of recalling the event and motivation to do so (Catania *et al.* 1993). It is thereby subject to the malleability of memory (Croyle & Loftus 1993).

More distant sexual events are more difficult to recall unless they have high personal salience such as sexual milestones or negative experiences (Catania *et al.* 1990). When experiences have high personal salience they are also perceived as having occurred more recently and this may lead to erroneous inclusion of such events in responses which specify particular reference periods. This is known as forward telescoping (Sudman & Bradburn 1973) and it is also possible for backward telescoping to occur if the event is perceived as having occurred longer ago than was actually the case. More frequent acts, by comparison, are more difficult to retrieve. As the number of similar or related events increases, the likelihood of recalling any

one of these events decreases (Eisenhower *et al.* 1991). In the light of this, respondents who have larger numbers of lifetime sexual partners are unable to provide accurate responses when asked about them and report that they resort to estimation (Miller 2002). Such estimation is evident in studies which have found that reliability of reporting sexual behaviour decreases over longer recall periods and with more frequent behaviours (Catania *et al.* 1993; Fenton *et al.* 2001).

When HIV positive gay men were asked about sexual activity in the past two weeks, three months and twelve months, higher frequency of activity was reported over the shorter periods than over the twelve-month period (Kauth *et al.* 1991). The greatest consistency in reporting was for infrequent practices. Recall of sexual activities among a group comprising mainly of sex workers was also more reliable for infrequent practices such as receptive and insertive unprotected anal sex (0.95 and 0.98 respectively) and less reliable for more frequent practices such as masturbation of the partner (0.35) (McLaws *et al.* 1990). When HIV negative gay men were asked about sexual risk behaviour, their self-reported sexual behaviour was considered to be moderately reliable in a test-retest study although questions relating to the previous 5 years had the lowest reliability (Saltzman *et al.* 1987). The data also indicated that reports were less likely to be reliable where respondents had greater numbers of partners.

In Natsal 1990, item nonresponse on questions about dates when previous sexual encounters took place and numbers of paid sexual partners was 8% and 10% respectively (Wadsworth *et al.* 1993). The authors conclude,

“it seems more likely that item non-response in self-completion was associated with difficulty of recall or completion of a fairly complex form rather than unwillingness to disclose sensitive information” (Wadsworth *et al.* 1993: 412).

A more detailed investigation of item nonresponse in Natsal 1990, found that very few of the questions with high nonresponse were those that were considered to be of a more sensitive nature, whereas the highest levels of nonresponse were found for factual questions which may also be associated with recall difficulties (Kupek 1998).

Similarly, questions in a postal survey that required more thought were found to produce higher item nonresponse whereas the simpler questions used in respondent classification had few omissions (Ferber 1966).

Age is the key variable associated with memory (Sudman & Bradburn 1973) and respondents' abilities to perform the necessary information processing tasks required to respond to more complex questions may also decline with increasing age. Thus, as respondents got older they were more likely to provide incomplete data on questions that required ranking, rating and behavioural reporting (Kaldenberg *et al.* 1994).

The above findings suggest that respondents are willing to estimate responses but that item nonresponse may result if the task of recall becomes too burdensome. They also indicate that respondents in the Internet and HIV surveys are more likely to skip questions because of difficulties with recall rather than apparent sensitivity and that this is likely to increase as the salience of the experience decreases, its frequency increases and with increasing age. With this in mind, the following will examine the extent to which the respondent's sense of privacy is implicated in item nonresponse.

7.1.3.4 Withholding available information

One of the judgements that a respondent makes when faced with a question is an assessment of how their response might compare to a socially acceptable norm. In the light of such judgement,

“sometimes the respondents' censorship will result in responses that are edited to provide socially acceptable answers, but in many cases respondents will cope with sensitive questions by simply refusing to answer them” (Shoemaker *et al.* 2002: 194).

The issue, as discussed, is that of which questions are more or less sensitive to whom and under what circumstances. The literature has therefore tended to concentrate on how the question or survey mode may influence whether the respondent withholds available information which is covered elsewhere in this section.

One of the circumstances that may influence a respondent's likelihood of divulging information is that of privacy. Thus, a higher proportion of incomplete responses to Natsal 1990 was associated with the presence of others at the interview and apparent embarrassment (Kupek 1998) whereas telling respondents that their answers will remain completely confidential has been found to produce lower item nonresponse (Singer 1978).

A review of the experimental literature found that assurances of confidentiality affected item nonresponse to sensitive questions but not to questions of a more general nature (Singer *et al.* 1995) which indicates that there is an interaction between question sensitivity and the respondent's sense of privacy. Ong and Weiss (2000) suggest that a sensitive question is one for which a privacy manipulation yields a difference in response proportions. They administered a range of sensitive questions, including cheating at college work, to a student sample to examine the difference in response where respondents were completely anonymous compared to where confidentiality was assured. Respondents produced significantly more socially desirable responses in the confidential condition. Thus, the respondents' belief in their anonymity may be an important factor in divulging certain information.

Ong and Weiss' study shows that confidentiality assurances may not be sufficient to engender the optimal sense of privacy. Indeed, it has been shown that highlighting the issue of confidentiality may raise respondent concerns. When more detailed confidentiality assurances were given prior to survey administration, respondents were both less likely to agree to participate and more likely to consider that the survey would contain sensitive questions (Singer *et al.* 1992) and when a confidentiality reminder was given during the process of an interviewer-administered survey, it generated higher item nonresponse in the following questions (Frey 1986). Care must therefore be taken when forming confidentiality assurances.

Although computer mediated communication has been found to enhance respondents' sense of privacy and anonymity (Sproull & Kiesler 1986), respondents

may continue to withhold certain information in a computer environment. Thus, female students who completed online coital diaries generally provided complete responses whereas a question which asked them to provide partner initials produced more than 10% missing data (Baer *et al.* 2002). The issue of the extent to which use of Internet enables respondents to provide more complete answers in surveys of sexual behaviour will be examined below under mode influences on response, but the evidence here indicates that respondents in both the web and pen-and-paper Internet and HIV surveys are likely to provide more complete answers when they feel more assured of their privacy.

7.1.3.5 Belief in the adequacy of response

There appears to be little literature exploring respondent belief in the adequacy of response. This may be due to the apparently weak or negligible effect of such belief on item nonresponse, as described below. As we saw earlier, respondents are unlikely to doubt their interpretation of the questions (Oksenberg *et al.* 1991) and are willing to estimate if they do not have an exact response in mind (Miller 2002).

One of the strategies that may be adopted in estimating frequencies of particular behaviours is that of decomposing (Catania *et al.* 1990). Use of this strategy involves estimation of the frequency of occurrence of the behaviour over a short period of time followed by multiplication of this total to derive an estimation for the required, longer period of time. Where response options are available, respondents may also use these categories to help in their estimations, as described below under questionnaire influences on response. Although respondents may engage in similar inference strategies when attempting to recall sexual behaviours (Croyle & Loftus 1993), decomposing may be problematic where large numbers of sexual partners are involved (Catania *et al.* 1990).

Even if such strategies are problematic, however, it seems that respondents actively seek to generate answers, supporting the proposition that,

“when in doubt, the respondent prefers to give too much rather than too little information” (Sudman & Bradburn 1973: 806).

This desire to provide an answer may override any uncertainty about the adequacy of the response even when it falls short of what the researcher intended. It therefore seems that, having reached this point in the response process, respondents aim to provide an answer where at all possible. We can infer from this that the volunteers in the Internet and HIV surveys are unlikely to intentionally skip a large proportion of the questions.

7.1.4 Interviewer influences

Having considered the influence of the respondent on item nonresponse, we now turn to an examination of interviewer influences. Although there is an extensive literature on the differences between self-completion to interviewer administration, only a brief summary of the relevant issues is provided here because both of the Internet and HIV surveys analysed here were self-administered.

Both telephone and face-to-face interviewer-administered surveys typically have less item nonresponse than postal surveys (Dillman 1978). One of the most important reasons for this is the role that the interviewer plays in effecting the administration of the survey. He or she takes responsibility for reading the materials, following the instructions and recording the answers, leaving the respondent free to concentrate on the task of providing the answers. The issue of interviewer training is of key importance in this respect (Groves 1989).

In the context of Beatty and Herrmann’s framework, interviewers may help the respondent who has problems with understanding or comprehension and they may increase motivation through maintaining interest and giving positive feedback. They may also encourage responses that may be otherwise deemed inadequate because of the expectation of response that the personal interaction engenders. On the other hand, the respondent may withhold or modify information to the extent that the interviewer is viewed as an arbiter of social acceptability.

Given the extensive impact of the interviewer on data quality, it is important that he or she has the appropriate skills to fulfil this role. Whereas good interviewers may reduce item nonresponse through following instructions appropriately and recording responses accurately, bad interviewers may fail to follow instructions and make mistakes in recording responses. Good interviewers may turn “don’t know”s into substantive responses where appropriate, whereas bad interviewers may fail to probe adequately (de Leeuw 2001). The impact of interviewer probing on response can be seen in a comparison of responses to the American Nation Election Survey and the General Social Survey. The higher level of “don’t know” responses found in the former was attributed to interviewer instructions to acknowledge where respondents did not appear to have an opinion on the issue in question rather than pressing them for an answer (Smith 1982).

It has generally been found that the presence of the interviewer is likely to increase socially desirable reporting. As it is likely to compromise the validity of the response if the respondent is required to disclose personal information directly to an interviewer, the only way to ensure against this is to use the self-completion mode. Use of the self-completion mode may therefore represent a trade off between the greater likelihood of reporting socially censured behaviours and the likely increase in item nonresponse (Wadsworth *et al.* 1993).

The evidence with regard to the mode effect on item nonresponse in surveys of a sensitive nature is mixed. de Leeuw’s (1992 cited in de Leeuw 2001) meta-analysis of data quality across survey modes indicated that the trend for interview surveys to result in less item nonresponse than postal surveys was reversed for sensitive questions where more item nonresponse was found in interviews. However, another comparison of interviewer and self-completion modes found that item nonresponse was never greater than 3% per respondent but the proportion of respondents providing complete responses to questions about alcohol consumption was significantly less in the self-completion mode (82% vs 93%) (Mangione *et al.* 1982). In Natsal 1990, item nonresponse was no more than 2% for sensitive questions in the face-to-face interview but up to 5% for most of the more sensitive questions in the

self-completion booklet (Kupek 1998; Wadsworth *et al.* 1993). Although interviewer training may be implicated where disparities have been found in item nonresponse to sensitive questions, it should also be noted that the Natsal self-completion questions were those of the most sensitive nature which may have contributed to the higher level of nonresponse.

By comparison, the research clearly indicates that the presence of the interviewer tends to reduce the candour of reporting in surveys of sexual behaviour. Gay men were twice as likely to report unprotected anal sex with a non-primary partner when surveyed by postal questionnaire as opposed to telephone (Acree *et al.* 1999). The use of ACASI has been associated with reporting more HIV risk behaviour and less protective behaviour than in the face-to-face mode (Des Jarlais *et al.* 1999; Macalino *et al.* 2002) and T-ACASI was found to produce higher reports of a number of sexual behaviours in comparison to interviewer administration by telephone (Turner *et al.* 1996). In Natsal 1990, the two most common inconsistencies were greater reporting of multiple heterosexual partners and homosexual experiences in the self-completion section compared to the face-to-face (Fenton *et al.* 2001). The self-administration mode has also been associated with a reduction in the disparity between males and females on the number of sex partners reported (Tourangeau & Smith 1996).

Another aspect of the respondent-interviewer relationship was highlighted in an examination of response to open-ended questions. Although the mean number of responses to open-ended questions did not diminish over the course of the survey administration, the variance in the number of responses was found to increase (Burchell & Marsh 1992). This was attributed to the “*subtle process of negotiation, compromise and accommodation between two individuals*” (Burchell & Marsh 1992: 242) which occurs over the course of the survey interview and impacts differentially on respondent verbosity.

7.1.5 Questionnaire influences

Good questionnaire design is of key importance to data quality (Jenkins & Dillman 1997). What follows is an exploration of the impact of question routing, question

order and data checking on item nonresponse. Such features are likely to be particularly pertinent to this comparison of web and pen-and-paper surveys given that computer-assisted modes can reduce or eliminate routing errors, randomise presentation of questions or response options and check data at the time of inputting (de Leeuw *et al.* 1995). Before considering these influences, however, I will begin with consideration of some of the more general impacts of the questionnaire on item nonresponse.

As described earlier, under *7.1.3.1 Inadequate understanding or comprehension*, people may refer to their own conceptual framework in order to interpret the meaning of the question. They also seek clarification in the clues provided by the form and context of the question. In closed questions, therefore, the response options provide respondents with significant information on how to respond. This is because they are said to provide information about the underlying assumptions of the question and reflect the researcher's understanding of the distribution of responses (Schwarz & Hippler 1991). Respondents are thereby likely to use the categories provided as a frame of reference with which to assess their own behaviour, interpreting the middle alternative as representing that which is average or typical. Thus, respondents reported fewer sex partners when response categories emphasised the lower end of the distribution, an intermediate number in open questions and the highest number where response categories emphasised the higher end of the distribution (Tourangeau & Smith 1996).

It is possible that respondents may skip questions if the categories available do not match their intended response, especially in self-completion surveys (Bradburn & Sudman 1991). However, Schuman and Presser (1981) have argued that respondents not only utilise the framework provided by the question in formulating responses to attitude questions but they earnestly seek to work within it:

"If we do not provide a particular substantive alternative to a closed question, people rarely give it. If we omit a don't know category or a middle alternative, people ordinarily do not volunteer one ... for most questions people accept the "rules of the game", as they are conveyed by the form of the question"
(Schuman & Presser 1981: 299).

This supports the argument that respondents are unlikely to skip closed questions on purpose and item nonresponse is likely to be low when respondents are not explicitly told that they can skip questions (Couper *et al.* 2004).

Figure 7.2: Radio button question format

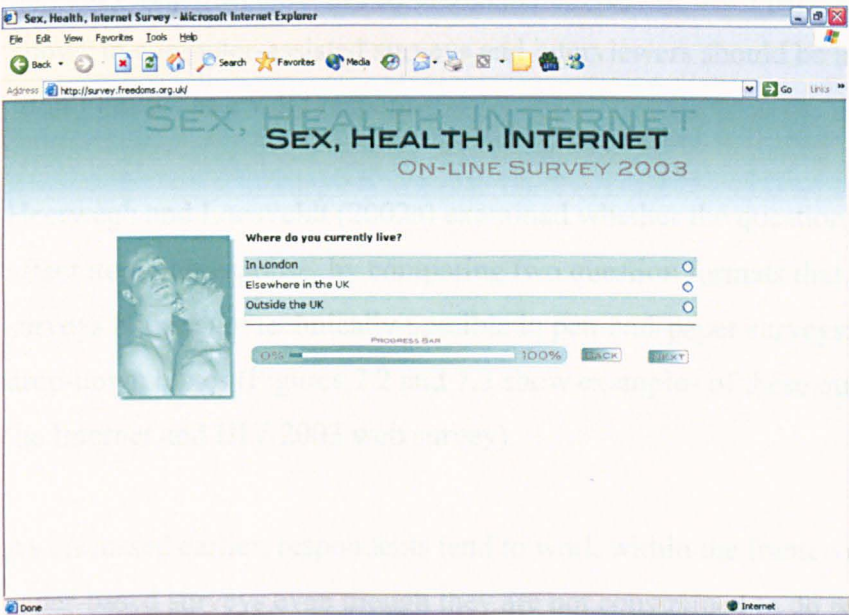
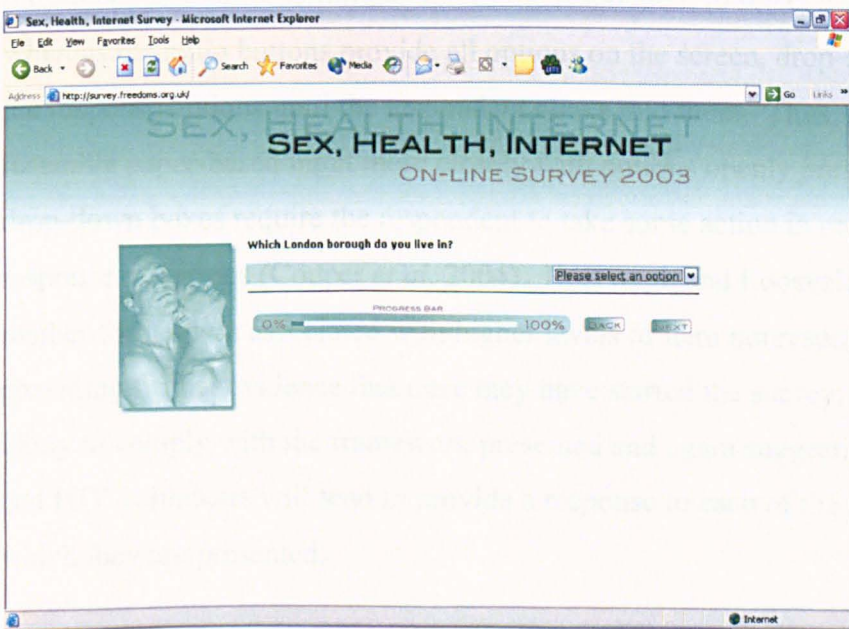


Figure 7.3: Drop-down box question format



Schuman and Presser's position also indicates that respondents are less likely to provide a "don't know" response if it is not explicitly provided. As previously discussed, a "don't know" response can be likened to item nonresponse (Groves 1989) and is often taken to be so in the analysis of item nonresponse. In order to reduce this type of nonresponse, de Leeuw (2001) suggests that a "don't know" response should not be explicitly offered but respondents should be instructed that they may skip questions in pen-and-paper surveys or use a particular key for "don't know" in computer-assisted surveys and interviewers should be instructed to accept "don't know" as a valid response.

Heerwegh and Loosveldt (2002a) examined whether the question format would affect item nonresponse, by comparing two question formats that are used in web surveys but are not technically possible in pen-and-paper surveys: radio buttons and drop-down boxes (Figures 7.2 and 7.3 show examples of these question formats from the Internet and HIV 2003 web survey).

As discussed earlier, respondents tend to work within the framework provided in paper-based surveys even though they are not constrained to do so. Radio buttons and drop-down boxes illustrate one of the constraints that the web survey may introduce. Use of these formats forces the respondent to select a single response but whereas the radio buttons provide all options on the screen, drop-down boxes hide the response options until the respondent clicks into them. Thus, radio buttons resemble paper-based input more closely with options openly presented whereas drop-down boxes require the respondent to take some action in order to view the response categories (Couper *et al.* 2004). Heerwegh and Loosveldt found that neither format was associated with higher levels of item nonresponse, however, providing further evidence that once they have started the survey, respondents are likely to comply with the framework presented and again suggesting that the Internet and HIV volunteers will tend to provide a response to each of the questions with which they are presented.

7.1.5.1 Question routing

One of the key influences of the questionnaire on item nonresponse is its capacity to guide respondents through it and direct them to the questions that they need to answer. The effect is especially notable where branching instructions are involved. Thus, Redline *et al.* (2004) have shown that modifications in the design of pen-and-paper questionnaires can reduce the likelihood that respondents will supply answers to questions which they should have skipped (errors of commission) and skip questions which they should have answered (errors of omission). Messmer and Seymour (1982) also found that item nonresponse was significantly higher in the questions immediately following branching instructions (4.38% vs 2.13%).

Dillman (1978) recommends the insertion of short, clear instructions in the appropriate place to reduce the effects of branching nonresponse. Figure 7.4 illustrates acceptable and unacceptable ways of instructing respondents in a one-page scrollable web survey in order to reduce item nonresponse where respondents do not have any children of 15 and under living with them.

Figure 7.4: Unacceptable and acceptable survey instructions

Unacceptable:

30. Do you have any children age 15 and under that currently live with you?
- Yes
 - No – If no, skip to question #42

Unacceptable:

30. Do you have any children age 15 and under that currently live with you?
- Yes
 - No – If no, click here to skip to question #42

A revision:

30. Do you have any children age 15 and under that currently live with you?
- Yes
 - No → After clicking “No,” CLICK HERE to skip to question #42

Source: “Mail and Internet surveys: the tailored design method” by D A Dillman (2000: 395)

Although Dillman and Bowker (2001) argue that single-page web surveys like the above produce the best results by echoing conventional questionnaire layout, appropriate use of computerisation can automate progression through the questionnaire, virtually eliminating the errors that occur when questions are inadvertently missed and substantially decreasing the overall amount of item nonresponse (de Leeuw 2001; Tourangeau *et al.* 2000). Surveys with more complex routing patterns are therefore likely to benefit from a page-by-page web survey design which enables researchers to ask highly contingent questions without confusing the respondent (Moon 1998). Such automatic skip and branch patterns have a similar effect to that of the interviewer described earlier in taking the responsibility away from the respondent. At the same time, self-completion has the additional benefit of allowing the respondent to stay in control and determine the pace of the completion (de Leeuw 2001).

The literature therefore suggests that the automatic routing of the Internet and HIV web survey is likely to reduce item nonresponse in comparison to the pen-and-paper survey.

7.1.5.2 Question order

Respondent motivation has been shown to have an impact on response behaviour and it is possible that such motivation may subside over the course of the survey leading to increased item nonresponse. For example, a lengthy survey conducted in the work place resulted in fewer “not applicable” responses when questions were placed towards the beginning of the questionnaire than when placed towards the end (Wang & Fan 2004). Another study found that the position of the question within the survey accounted for 44% of the variance in item nonresponse (Dickinson & Kirzner 1985) and a survey of elderly respondents found increased item nonresponse for later questions but no correlation between age and item nonresponse (Vance *et al.* 2003).

Less item nonresponse was found among demographic questions placed at the beginning of a pen-and-paper questionnaire (4.7%) compared to the end (7.2%) (Green *et al.* 2000) and 9.5% of respondents failed to provide an email address if it

was requested at the beginning of a web survey and 20.5% failed to do so if it was requested at the end (Frick *et al.* 2001). Respondent willingness to provide personal information at the beginning of the survey has been interpreted in terms of reciprocity:

“One might assume a give-and-take model: Participants are more likely to provide personal information if they are curious to see the experiment. After the experiment, when their curiosity has been satisfied, they are no longer willing to disclose the information” (Frick *et al.* 2001: 217).

In contrast to the above findings, the likelihood of answering a question did not appear to be influenced by its position within the survey in Ferber’s (1966) investigation of item nonresponse to a postal survey.

The issue arises as to whether measurement error, including item nonresponse, is reduced if question sensitivity is increased over the course of the survey, permitting respondent desensitisation, or whether it is increased due to weakening of respondent motivation towards the end of the survey (Catania *et al.* 1993). The two contrasting hypotheses state that (i) rapport develops over the course of the interview leading respondents to perform better or (ii) fatigue sets in leading to declining performance (Sudman & Bradburn 1973). In interviewer-administered surveys, respondents expressed a preference for beginning with more neutral questions leading to more intimate questions when rapport had been established (Spencer *et al.* 1988). Although it is not clear how modifying the question order will affect item nonresponse in self-completion surveys of sexual behaviour, it is possible that Internet and HIV respondents will skip more questions towards the end of the survey.

7.1.5.3 Data checking

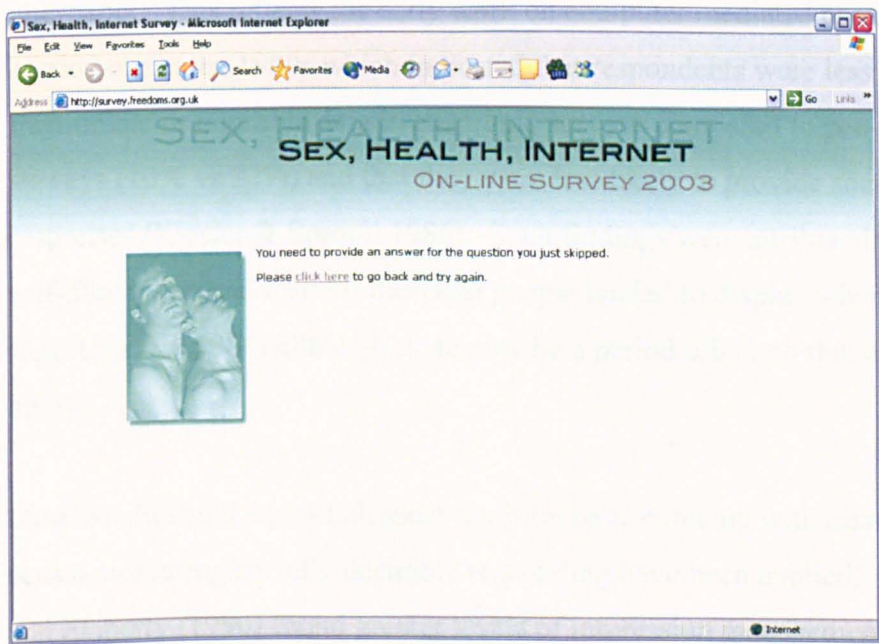
Traditional pen-and-paper self-completion surveys rely on clear instructions in an attempt to ensure that respondents complete the questions appropriately. The importance of clear routing instructions has been shown to be important in reducing item nonresponse (Redline *et al.* 2004) and other examples include instructing

respondents to insert “0” rather than skipping a question where the response consists of a number (de Leeuw 2001).

Instructions compete for space in the questionnaire, however, and respondents may fail to read them. Computerised surveys can check for inappropriate or missing responses as the time of completion, however, providing immediate feedback upon which the respondent can act. Web surveys can be designed to encourage respondents to provide an answer to each question, as illustrated in Figure 7.5, which shows the pop-up message that appeared when respondents failed to answer a routing question in the 2003 Internet and HIV web survey.

An experiment which manipulated provision of a “decline to answer” option and inclusion of a prompt to respond when answers were skipped, found that the lowest item nonresponse occurred where both the option to decline and the prompt were included (deRouvray & Couper 2002). The evidence thus indicates that the inclusion of such messages in the Internet and HIV web survey will reduce item nonresponse in comparison to the pen-and-paper survey.

Figure 7.5: Data checking pop-up



7.1.6 Mode influences

Mode effects are those which result from the use of one survey mode in the data collection process as opposed to another (Groves 1989). Although different modes encourage the use of different question formats which may impact response (Dillman & Christian 2003), respondents are believed to give different answers to what are ostensibly the same questions in relation to the level of privacy, legitimacy and cognitive burden associated with the mode (Tourangeau & Smith 1996). Because web surveys are both self-administered and computer-assisted, they will have attributes in common with other self-administered modes and other computer-assisted modes but they will also have attributes producing effects which are specific to the web mode (Lozar Manfreda & Vehovar 2002). In the comparison of web and pen-and-paper surveys undertaken here, both surveys should share the attributes associated with self-administration but may have contrasting attributes associated with the computer-assisted and web-administered mode in comparison to pen-and-paper administration.

7.1.6.1 Computerisation and sensitive behaviour

de Leeuw's (1992 cited in de Leeuw 2001) meta-analysis of data quality across survey modes found that CAPI and CASI generated less item nonresponse than pen-and-paper. This reflects the early work on computer mediated communication carried out in the 1980s which indicated that respondents were less likely to provide incomplete or unusable data in electronic surveys compared to pen-and-paper surveys (10% vs 22%) and that they were less likely to provide socially desirable responses (Kiesler & Sproull 1986). Such findings were attributed to the greater self-absorption and disinhibition that people tended to display when using computers (Kiesler *et al.* 1984) although there may be a period effect on this work, as described below.

Other studies in the psychological tradition have come up with mixed findings when scales measuring socially desirable responding have been applied. Lautenschlager and Flaherty (1990) found greater levels of impression management in an individually administered computer survey compared to an individually administered

pen-and-paper survey and group administered computer survey. They also found higher self-deception in both the individually administered modes compared to the group mode. Booth-Kewley *et al.* (1992) found that computerised administration yielded similar levels of socially desirable responding to pen-and-paper surveys. King and Miles (1995) found no difference in self-deception between pen-and-paper and computer administration but higher impression management for the pen-and-paper mode. Joinson (1999) also found lower levels on measures of social desirability and social anxiety when students were assigned to a web survey in comparison to a pen-and-paper survey whereas a similar comparison of web with pen-and-paper found no differences between the two in socially desirable responding (Hancock & Flowers 2001).

The accumulated evidence on mode effects from survey methodology indicates that self-administration increases reports of sensitive behaviours over interviewer-administration and computerisation maintains or increases this advantage (Tourangeau *et al.* 2003) with the latter effect held to be less convincing (Moon 1998). A meta-analysis of 61 studies of the impact of mode of administration also concluded that computers had no consistent effect on socially desirable reporting (Richman *et al.* 1999).

Tourangeau *et al.* (2003) discuss the differences in the two research traditions that may have contributed to different findings about the effects of computerisation. They describe how the psychological tradition has generally adopted small-scale experiments in the lab using samples of student volunteers and measures of social desirability whereas the survey methodology tradition is often based on large probability samples surveyed in the real world using questions about sensitive behaviour. The earliest psychological studies, which found that computerised communication was associated with reduced socially desirable responding, also took place at a time when different attitudes to computers may have contributed to the effect. In this way,

“As computers emerged from mysterious climate-controlled laboratories and became affordable, versatile, user-friendly devices ubiquitous in both the

workplace and home, their familiarity among more recent research participants may explain the trend, reflected in the mixed findings of the past decade, in which some studies reveal significant differences between pencil and paper vs. computer and others have found no such difference” (Knapp & Kirk 2003: 132-133).

The following provides a summary of studies that sought to explore the effects of survey computerisation on reporting sensitive behaviour. The findings show how computer administration in itself may not improve on the effects of self-administration in this way but that they have the advantage over paper-based surveys of reducing item nonresponse, as detailed in the above description of questionnaire influences.

An experimental manipulation of administrative conditions for the US National Survey of Family Growth, found that the use of a computer *per se* had little effect on levels of reporting sensitive data whereas the self-administration mode had a clear impact (Jobe *et al.* 1997; Tourangeau *et al.* 1997a). The advantage of computer administration was a marginal increase in the proportion of answers relative to pen-and-paper (98.6% vs 96.2%), although interviewer-administered surveys provided slightly more complete data than self-administered (98.5% vs 96.2%).

In a comparison of Natsal 1990 and Natsal 2000, item nonresponse in the pen-and-paper self-completion section of the survey was very low in 1990 and even lower for the computerised version used in 2000, which was partially ascribed to the automatic routing of questions using CASI (Copas *et al.* 2002). Although Johnson *et al.* (2001a) found no consistent evidence that use of the computer in Natsal 2000 increased reporting of sensitive behaviours in comparison to the 1990 pen-and-paper version, CASI was associated with improved internal consistency in reporting and lower item nonresponse. Thus, 12.8% of respondents failed to provide a substantive answer to at least one question in CASI compared to 65.7% of respondents in the pen-and-paper version.

An examination of socially desirable responding that randomly assigned students to the web or postal survey mode found that item nonresponse was not a problem in

either survey although marginally lower in the web mode (McCabe *et al.* 2002). Whereas there were no significant differences in responses to questions on alcohol, tobacco and marijuana where question format was identical, differences were found where the question format was different. These were therefore attributed to question format rather than survey mode. Another study where students were assigned to pen-and-paper, web or touchtone surveys found no differences in reporting of sensitive behaviours across modes (Knapp & Kirk 2003). The authors conclude that this may be the result of the complete anonymity that was guaranteed across modes and the familiarity of the respondents with all three forms of communication.

Exceptions to the lack of computerisation effect on socially desirable responding have been found among adolescents. Wright *et al.* (1998) found that adolescents (12-18 years) were more likely to report sensitive behaviours in CASI than pen-and-paper whereas the response of young adults (19-34 years) was not altered by mode. Adolescent males were also more likely to report sex with another male and behaviours including use of recreational drugs using ACASI rather than pen-and-paper although there were no differences in reporting sex with a female (Turner *et al.* 1998b). The increase in reporting sex with a male was found across all educational strata but was more pronounced for those who were behind at school.

These findings indicate that it is possible that certain groups are more susceptible to a computerisation effect for certain sensitive questions. Sudman and Bradburn (1974) have argued that questions which pose a greater threat to the respondent are more highly influenced by the survey mode and, as discussed earlier, the threat of such questions will vary from one group to another. Thus, the computerisation effect found in the above studies may arise because,

“method effects may be related to the degree of perceived social censure of particular behaviours and these vary between cultures and demographic groups” (Fenton *et al.* 2001: 89).

The above findings indicate a mode effect whereby the Internet respondents will be less likely to skip questions in the web survey than the gym respondents who

completed a pen-and-paper survey and this analysis will seek to examine whether the computerised mode will have an additional effect of reducing item nonresponse to questions of a more sensitive nature among this population of gay and bisexual men.

7.1.6.2 Use of the Internet

Having discussed the impact of computerisation on item nonresponse in studies of sensitive behaviour, what follows is an examination of the impact of use of the Internet on item nonresponse in more general research. It will explore the prevalence of item nonresponse in Internet surveys in comparison to traditional self-completion surveys, beginning with studies that have compared email and postal surveys before going on to look at comparisons involving web surveys.

Studies have tended to find little difference in item nonresponse for email and postal surveys, indicating that the email format does not benefit from the reduced item nonresponse that is normally associated with computerisation. This is likely to be because of the lack of interactive features of such surveys which might therefore be seen as online pen-and-paper surveys (MacElroy 1999). One study found that over 92% of surveys were fully completed in both modes, with mean item nonresponse of close to zero (Mehta & Sivasdas 1995). Couper *et al.* (1999) also found no significant difference between the low levels of item nonresponse to the main content of their email and postal surveys whereas Tse *et al.* (1995) found a mean of 3.0 missing items for the email survey and 1.2 for their postal survey. The latter showed a much lower standard deviation (3.8 vs 8.4) and a lack of respondent familiarity with email was implicated in the findings. This might have improved by the time of a subsequent study where question omission was similar for email and postal (1.7 vs 1.6) (Tse 1998). McDevitt and Small (2002) also found no significant differences between email and postal surveys in the omission of responses to open questions and extremely low levels of item nonresponse were found whether the survey was embedded in the email message or sent as an attachment, with just 0.07 and 0.00 questions skipped respectively (Dommeyer & Moriarty 2000).

By comparison, Shaefer and Dillman (1998) obtained a more complete response for their email survey, with 69% of respondents completing 95% of it compared to 57% of respondents completing 95% of the postal survey. A consumer survey that was sent to respondents in hard copy or on disk also produced significantly lower item nonresponse for the electronic survey (0.15% vs 1.76%) although there was little item nonresponse in either mode (Boyer *et al.* 2002).

A number of studies have compared quality of the response in web and other self-completion surveys. Where differences have been found they have generally indicated increased data quality for web surveys in line with the computerisation effect described earlier. A study which randomly assigned paediatrician respondents to a web, postal or fax mode, found the least amount of item nonresponse for the web survey (0.4%), with the postal (2.4%) and fax surveys (2.8%) fairly similar (McMahon *et al.* 2003). Other comparisons of web and postal surveys have also found less item nonresponse in the web survey (Kwak & Radler 2002; Stanton 1998), although differences are not always significant (Pettit 2002), and item nonresponse to the Norwegian 2001 census was much lower when respondents chose to respond via the web (Haraldsen *et al.* 2002). Another study where respondents could choose their mode of response found that the web sample also provided more complete data but were more likely to respond to questions that were not applicable to them (64%) than those who replied by email (50%) or pen-and-paper (39%) (Stangl 2004).

A survey of health risk behaviour which randomly assigned students to the web and postal mode found no overall significant differences in item completion but web respondents were significantly less likely to skip sensitive questions (Pealer *et al.* 2001). The authors attribute the low item nonresponse for these questions in both modes (web: 2.4% vs postal: 3.9%) to respondents' genuine interest in the survey topic but the importance of this study is that it provides evidence that certain respondents may be less likely to skip certain sensitive questions on the web.

A number of surveys within organisations have found more item nonresponse in the web mode which has been attributed to taking less care in responding (Lozar Manfreda & Vehovar 2002). Thus, the increased item nonresponse in one such web survey (17% vs 8%) was not found to vary across question types whereas the postal survey respondents appeared to skip questions with greater discrimination (Lozar Manfreda & Vehovar 2002). Church (2001) also found significantly more item nonresponse in the web version of a similar survey compared to pen-and-paper (14.4 vs 2.0) and another comparison of web and postal organisational surveys found the mean number of questions skipped was somewhat higher for the main survey questions in the web mode (3.0 vs 1.7 out of a total of 115) although it was somewhat lower for demographic questions (2.6 vs 2.9 out of a total of 15) (Bates 2001).

Web surveys share some of the features of other self-administered and computer-assisted modes as well as having properties that are specific to the web mode. Although self-administration is generally associated with higher item nonresponse and computerisation with lower item nonresponse, the use of the Internet may bring other influences to bear. Web surveys may, for example, be presented in a one-page scrollable design or in a multiple-page design with one question per page or use a combination of the two. The design chosen is likely to have an impact on response and the multiple-page design is recommended for surveys with more complex routing patterns (Moon 1998).

The presentation of questions in a one-by-one page design may also help respondents to focus on each individual question whereas presenting a group of related questions or “semantic partitioning” may provide context and allow for comparison (Norman *et al.* 2001). Use of the single-page design has been found to result in higher item nonresponse than the page-by-page design (Lozar Manfreda *et al.* 2002a), however, where the lack of distraction from irrelevant questions and the ease of navigation may militate against it.

Other features of the Internet may also influence response to this mode. Using the Internet has been associated with multi-tasking which may distract some respondents and increase item nonresponse (Lozar Manfreda & Vehovar 2002). In tests of website usability, people have been found to scan written material with their fingers on the mouse ready to proceed (Bauman *et al.* 2000) which may curtail examination of survey instructions and questions in the Internet mode. Internet responding has also been associated with disinhibited behaviour (Joinson 1998; Kiesler *et al.* 1984) which is believed to increase honesty but may have other impacts on response.

In summary, there are a multiplicity of potential influences on item nonresponse in web surveys and the mixed findings described above indicate that more work needs to be done on teasing out the impact of respondent, questionnaire and the Internet mode. The literature shows that the self-selected nature of the Internet and HIV samples is likely to engender low item nonresponse in both the web and pen-and-paper survey. The web survey is, however, likely to have less item nonresponse than the pen-and-paper survey because of design features such as automatic routing and messages encouraging respondents to answer routing questions. Although privacy is likely to be important issue, this cannot be tested as we do not know the circumstances of respondent completion in either survey.

7.2 Methods

Couper (2001) asserts that survey quality is not an absolute but should be evaluated against other features of the design and with reference to the goals of the survey. In the present case, the goals of the web and pen-and-paper gym surveys were very similar which enables the analysis to focus on how the design features impact upon survey quality. As the data were not collected as part of a methodological experiment, the two questionnaires were not designed to be absolutely identical. They were designed to optimise data collection in the context of the mode of delivery. Although the main variable of interest here is the impact of survey mode on item nonresponse, it is likely that other design features may influence this and the following will begin with a summary of the key confounding variables in this respect. This will be followed by an explanation of how item nonresponse was defined for the purposes of the analysis and a summary of the statistical techniques used.

7.2.1 Sample comparability

Web survey data from the Internet 2003 sample were compared to pen-and-paper survey data from the gym 2003 sample because both samples include men who are HIV positive, negative and untested, whereas the HIV positive clinic sample is limited HIV positive men and the HIV testing clinic sample is limited to those who have tested for HIV.

Comparisons made elsewhere (Elford *et al.* 2004b) between the 2002 Internet and HIV Internet and gym samples found that the Internet respondents were younger, less educated, less likely to have sex only with men, be in a relationship or have tested for HIV. Differences were less pronounced for HIV positive men and more pronounced for men who were HIV negative or never tested. Internet respondents were more likely to report high risk sex regardless of HIV status.

There are clearly differences between the characteristics of the Internet and gym samples, such that it is difficult to disentangle the impact of sample composition from the impact of survey mode on responses to the survey questions. The following

analysis compares item nonresponse by the 2003 Internet and gym samples in order to contribute to the debate around the impact of survey mode on item nonresponse, while acknowledging that it does not control for the influence of differences in sample composition. Sample comparability was enhanced by including only men who finished each survey (those who reached the last question in the web survey and those who returned a completed pen-and-paper survey), who said that they were living in London and had had sex with a man in the last year.

7.2.2 Questionnaire comparability

Although the two questionnaires were designed to gather commensurate data as part of the same study, the questions that they contained were not all identical. The web survey contained a total of 160⁶ questions and the pen-and-paper survey contained a total of 124 questions. The content of the majority of the questions was the same and questions followed the same order but the web survey included some more detailed questions, particularly about use of the Internet and sexual partners from the Internet. Both questionnaires contained routing patterns. The programming of these skip and branch patterns in the web survey necessitated inclusion of some compulsory questions in order to ensure correct routing. Account was taken of this in the analysis as described below.

Where questions in the web survey were compulsory, a response option was included to enable respondents to provide a “don’t know” or “rather not say” response. This option may not have been offered in the pen-and-paper survey. The possible effects of this are explored below in 7.2.3 *Defining item nonresponse*. In other questions, small differences in question format may have influenced response as differences in question wording and the inclusion or exclusion of response categories have been found to do so (Schuman & Presser 1981; Sudman & Bradburn 1974).

⁶ The small discrepancy between the number of questions used in the drop out and item nonresponse analyses results from including questions about non-London living in the former but not the latter and from coding certain questions as constituting a single drop out item in the former and a number of response items in the latter.

Another aspect that is not controlled in the present analysis is the visual layout of the questions in the web and pen-and-paper surveys. This has been found to influence respondents' navigation through a survey and their substantive responses (Christian & Dillman 2004). Furthermore, we cannot be sure that the web survey was presented in exactly the same way to all web respondents. The nature of such surveys is that they are subject to changes in presentation defined by the respondent's individual computer system and settings (Couper 2001) unless completed under experimental conditions where such variation can be controlled. Although such variables were not controlled for in the present analysis, it has the advantage of using real life data that were not influenced by an artificial lab setting.

7.2.3 Defining item nonresponse

Item nonresponse is defined here as occurring when respondents failed to provide an answer to questions to which they were directed. Although nonsubstantive responses such as "don't know" or "not sure" are often coded as missing data in studies investigating item nonresponse, only cases where the respondent left the response blank are counted here. In the majority of these questions, the "don't know" type response conveyed information and was included in both the web and pen-and-paper surveys. Appendix 8 contains a list of five questions where a nonsubstantive response option was included in the web survey because the question was compulsory but was not available in the pen-and-paper survey because none of the questions a self-completion pen-and-paper survey are compulsory.

Examination of responses to these five questions shows that in three of the questions, respondents chose the nonsubstantive response in the web survey to a greater extent than they skipped the same questions in the pen-and-paper survey. Thus, in answer to the question about whether the respondent had had an HIV test, 2.3% of Internet respondents said they would "rather not say" whereas 0.8% of gym respondents skipped the question. In answer to two questions about why the respondent had anal sex without a condom, 3.5% of Internet respondents said that they did not know why they had UAI with a partner from the Internet whereas 0.0% of gym respondents skipped the question and 7.5% of Internet respondents said they did not know why

they had UAI with a partner from another venue whereas 2.4% of gym respondents skipped the question. These findings are in accordance with the previously described theory of satisficing (Krosnick 1991; Krosnick & Alwin 1987) whereby respondents select a “don’t know” response rather than considering an optimal answer but if such an option is not given they are likely to work within the framework presented (Schuman & Presser 1981). Including a “don’t know” option is therefore likely to increase nonsubstantive answers but not including one does not necessarily incur item nonresponse. This implies that the two responses are not identical and in order to maintain consistency, only missing responses are counted as item nonresponse in the present analysis.

Furthermore, a nonsubstantive response is indicative of a purposeful response whereas we do not know whether the respondent skipped the question on purpose or by mistake in self-completion surveys. Respondents have been found to use “don’t know” and skipping in different ways (Shoemaker *et al.* 2002) and to equate the two responses may amount to second-guessing the respondent’s behaviour. In relation to this, Catania *et al.* (1993) recommend that missing data analysis should include “never” and “0” responses because respondents may find it more acceptable and less confrontational to report non-performance than to refuse to answer a question. Without having further information about the respondent’s intention in forming his response, however, it is considered safer not to do so here.

The web dataset represents the data exactly as input by the respondents during survey completion. The gym respondents filled in the pen-and-paper questionnaire and returned it to a member of the research team. The data provided by gym respondents therefore represents that which was input from the pen-and-paper questionnaires into Epi Info, a multipurpose computer package for epidemiologists developed by the US Centers for Disease Control and Prevention (<http://www.cdc.gov/epiinfo/about.htm>). At the time of inputting, certain preliminary consistency checks were made and the gym dataset is therefore an edited version of how respondents originally completed the questionnaire. The editing process involved a protocol for dealing with inconsistent answers which included adjusting reported behaviours and reported

numbers of partners for consistency, selecting the most plausible response where contradictory boxes were ticked and excluding responses which should have been skipped because of routing. All 526 questionnaires would need to be re-coded in order to reflect accurately how respondents actually completed the survey which was not considered to be an efficient use of resources because the process did not, on the whole, involve imputing missing data. The gym dataset may therefore contain more complete data than respondents provided in their original responses to particular questions.

During web survey completion, each question was presented to the respondent on the screen and his response automatically directed him to the next question which required an answer. Most of the questions were presented on separate web pages. It is therefore clear when respondents should have answered particular questions but failed to do so. The gym respondents had to follow the routing instructions in order to be directed to the next question. It is not always clear whether gym respondents skipped a particular question because they were following a route past that question and therefore did not read it or whether they read it and skipped it either deliberately or mistakenly.

7.2.4 Data analysis

7.2.4.1 Item nonresponse for each respondent

Responses were coded as missing in the web survey where the respondent failed to supply an answer to a question with which he was presented. The proportion of item nonresponse for each respondent is expressed as a percentage which was calculated as the total number of questions he skipped divided by the total number of questions with which he was presented (that is, the total number of questions ($n = 160$) minus those past which he was routed). For the pen-and-paper survey, responses were also coded as missing where the respondent failed to supply an answer to a question with which he was (to all appearances) presented. On the occasions where respondents missed a routing question and then skipped the following related questions, the original skip was included as item nonresponse but the following skips were treated as if the respondent had been routed past those questions. The proportion of item

nonresponse for each respondent is again expressed as a percentage which was calculated as the total number of questions he skipped divided by the total number of questions with which he was presented (that is, the total number of questions ($n = 124$) minus those past which he was routed or those that he did not answer having skipped a routing question).

7.2.4.2 Item nonresponse for each question

Item nonresponse for each question was calculated using the same principles. In the web survey, it was calculated as the total number of respondents who skipped the question divided by the total number of respondents who were presented with the question (that is, the total number of respondents ($n = 561$) minus those who were routed past the question). In the pen-and-paper survey, it was calculated as the total number of respondents who skipped the question divided by the total number of respondents who were presented with the question (that is, the total number of respondents ($n = 526$) minus those who were routed past the question and those who skipped a previous routing question). For both the web and pen-and-paper surveys, item nonresponse for each question was expressed as a percentage.

7.2.4.3 Quantifying item nonresponse

Item nonresponse calculated for respondents and questions as described above formed the basis of the analysis that is presented below. In the analysis of item nonresponse for respondents, mean item nonresponse for groups or subgroups of respondents was calculated and expressed as a percentage for that group or subgroup. For example, mean item nonresponse for gay respondents was 1.03% in the web survey and 6.01% in the pen-and-paper survey.

In the analysis of item nonresponse for questions, mean item nonresponse for individual questions or sets of questions was calculated and expressed as a percentage for that question or set of questions. For example, mean item nonresponse for the question about the respondent's number of years in post-16 education was 0.71% in the web survey and 1.90% in the pen-and-paper survey.

7.2.4.4 Analysing item nonresponse

The analysis began with a description of the total amount of item nonresponse generated by each respondent. *Linear regression* was used to examine its relationship with survey mode. The distribution of item nonresponse was highly skewed and its use therefore violates the assumption that variables included such analysis should be normally distributed. It was used here, however, to provide an estimation of the contribution of mode to item nonresponse which could not otherwise be derived.

An exploration of the impact of respondent variables on item nonresponse was undertaken in the same way that subgroup comparisons have been made in earlier chapters. Although the *t* test is robust to violations of its underlying mathematical assumptions, there were some relatively large differences in the sample sizes in the present analysis and the violation of the assumption of normality was extreme. It was therefore considered safer to use nonparametric tests and the *Mann-Whitney U test* and *Kruskal-Wallis test* were used to examine the differences in the amount of item nonresponse for subgroups with two or more categories, respectively.

The number of questions presented to subgroups was examined to investigate whether this was related to group differences in item nonresponse. If groups of respondents who were presented with a greater number of questions produced higher item nonresponse, inferences might be drawn about more questions presenting a greater opportunity to skip questions. Any such inferences are subject to ecological fallacy, however, and are therefore highly speculative. The number of questions presented conformed reasonably well to a normal distribution and parametric tests were therefore used. The *t test for independent groups* was used to make comparisons across two groups of respondents. *Oneway analysis of variance* was used in comparisons where subgroups of Internet and gym respondents contained more than two categories. The analysis of variance carries the same assumptions as the *t* test for independent groups and is similarly robust to their violation (Pagano 2001).

Stepwise multiple linear regression was used to explore predictors of item nonresponse in each survey. Examination of residual plots supported the earlier assertion that the statistical assumptions of the analysis were violated. Although the findings should be taken as highly tentative, therefore, the use of regression is defended on the basis that it was used to control for the effect of the number of questions in assessing the importance of respondent variables on item nonresponse and thus provides analysis at the individual level to complement the earlier group level analysis.

An examination was made of the amount of item nonresponse generated by each question. *Pearson's correlation* was used to explore the association between question number and item nonresponse in order to explore the hypothesis of increased item nonresponse later in the questionnaire.

Up to this point, analysis was based on all the questions presented to respondents in each of the surveys, even though some of them were presented under different conditions. The content of the Internet and HIV survey required complex routing and, for the web survey, the programming of the skip and branch patterns necessitated inclusion of compulsory questions at particular points in order to ensure correct routing. Thus, 22.5% of the questions in the web survey were compulsory and could not be skipped. Where they occurred in the pen-and-paper survey, such questions could be skipped. As this was not an experimental manipulation but an exploration of item nonresponse in two surveys which were designed to optimise collection of data from two samples, the above analysis was undertaken to compare the overall impact of web and paper-based self-completion modes on item nonresponse. It provides a practical insight into the mode effect that might be expected in other mixed mode studies where respondents are not randomly allocated to mode and data collection procedures, so are not exactly the same.

Although the lack of experimental control means that conclusions about mode effects drawn from this study are necessarily tentative, it is informative to compare item nonresponse for individual questions to add to the debate around the computerised

collection of data and sensitive data in particular. In order to do so, 78 questions that were not compulsory in the web survey were identified as being identical or near-identical in the two modes. Item nonresponse for matching questions was compared using the *Wilcoxon matched pairs test*, a nonparametric test that is used where the violation of normality precludes the t test for correlated groups (Pagano 2001), and the linear relationship between matching questions was examined using Pearson's correlation.

The 78 questions were divided into sub-sets of questions, using categories chosen on a pragmatic basis to describe sets of questions with similar content. These categories were based on those adopted in Chapter 4 and included sets of sociodemographic questions and those on sexual behaviour and orientation, drug use, health, HIV attitudes, survey behaviour, relationship, Internet use and emotional issues. Descriptive statistics were used to compare item nonresponse for these sets of questions and Pearson's correlation was applied where sets contained at least six matched questions.

The ratio of item nonresponse in the pen-and-paper survey compared to the web survey was also calculated for the matched questions and examination made of questions where a mode effect might not account for differences in item nonresponse.

7.3 Findings

The following section is divided into two. It begins with an examination of how the survey mode and respondent related variables influence the respondent's likelihood of skipping questions in the web and pen-and-paper surveys. This is followed by an examination of whether particular questions are disproportionately more or less likely to be skipped, over and above any general mode effect.

7.3.1 Influence of respondent variables

The following presents the findings on item nonresponse produced by respondents in comparable web and pen-and-paper surveys. In so doing it seeks to explore the existence of a mode effect on item nonresponse that affected the Internet and gym samples as a whole and whether certain subgroups of Internet and gym respondents had a propensity to skip questions in *both* surveys or were *differentially* affected by such a mode effect.

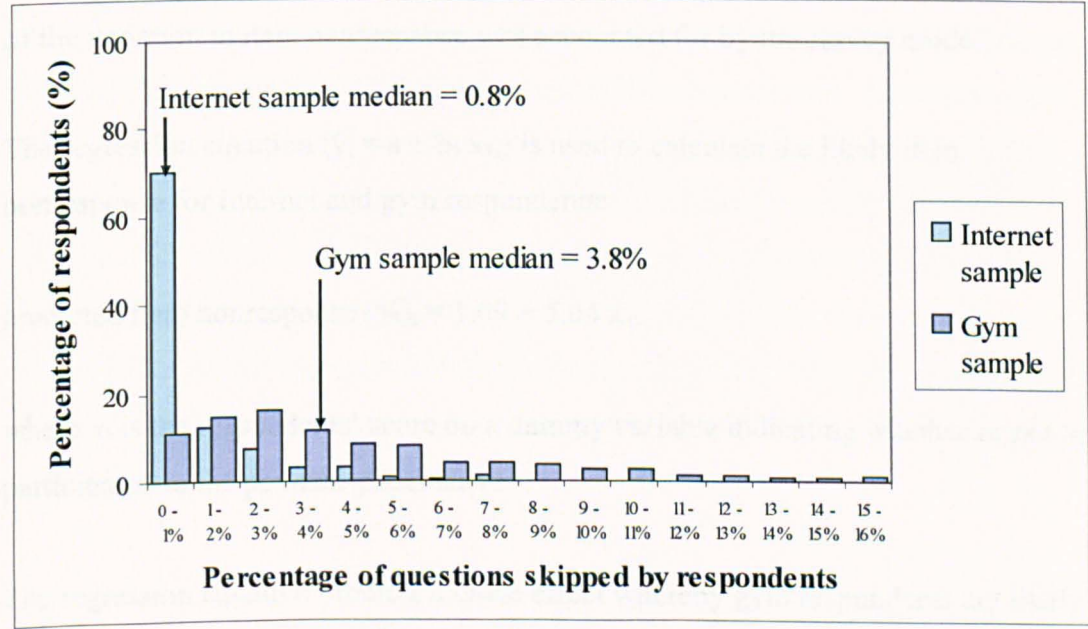
The 2003 Internet and HIV web survey contained a total of 160 questions and the 2003 pen-and-paper survey completed by gym respondents contained a total of 124 questions. Both questionnaires contained a similarly structured routing pattern. The result of these skips and branches is that some respondents took shorter routes through the questionnaires and some took longer routes. The minimum number of questions with which respondents were actually presented (including questions to which they failed to respond) was 87 for the web survey and 63 for the pen-and-paper survey. The maximum number was 143 for the web survey and 113 for the pen-and-paper survey. The mean number of questions actually presented was 113.8 (s.d. 11.5) for the web survey and 83.9 (s.d. 11.0) for the pen-and-paper survey. This difference is statistically significant, showing that Internet respondents were presented with an average of 20 more questions to complete than the gym respondents ($t = -43.8, p \leq 0.01$).

Because each respondent was presented with a different number of questions depending on his route through the questionnaire, the percentage item nonresponse is presented here rather than the absolute amount of item nonresponse in order to take

account of this variation. For each respondent this is computed as his total item nonresponse divided by the total number of questions presented to him, expressed as a percentage. Although the minimum item nonresponse for respondents was 0% in both surveys, 47.6% of Internet respondents skipped no questions compared to 9.3% of gym respondents. The maximum item nonresponse for respondents was 12.1% in the web survey and 72.9% in the pen-and-paper survey. The mean was 1.1% (s.d. 1.7%) in the web survey and 6.1% in the pen-and-paper survey (s.d. 8.6%). This shows that the gym respondents completed significantly fewer of the questions presented to them than the Internet respondents ($U = 46,430.5, p \leq 0.01$).

Figure 7.6 shows the proportion of Internet and gym respondents who skipped up to 1% of questions, 1 to 2% of questions and so on. 6.3% of gym respondents are not included in the figure because they skipped more than 16% of questions and were defined as extreme cases in an analysis of outliers, using a stem and leaf plot.

Figure 7.6: Proportion of questions skipped by respondents



The figure demonstrates the low mean and standard deviation in item nonresponse for the Internet respondents, with 70.0% skipping up to 1% of questions. The

median percentage of questions skipped (0.8%) provides further evidence of the low level of item nonresponse. The higher mean and comparatively high standard deviation for the gym respondents is reflected in the somewhat more evenly spread distribution, with 11.0% of respondents skipping up to 1% of questions and a median of 3.8%.

To summarise, the above has shown that there is a general mode effect on item nonresponse such that gym respondents were more likely to skip questions. There is also greater variation among gym respondents in the number of questions that they were likely to skip. The extent of this mode effect was further examined using regression analysis to predict the proportion of item nonresponse for each respondent by whether he completed the web or pen-and-paper survey. As discussed earlier, this analysis should be taken as an indication of the relationship between mode and item nonresponse, given that the data violate the assumption of normality.

The analysis shows that survey mode has good predictive power for item nonresponse ($F = 183.25$, $p \leq 0.01$) with an adjusted R^2 of 0.14, indicating that 14% of the variation in item nonresponse was accounted for by the survey mode.

The regression equation ($\hat{y}_i = a + b_1 x_{1i}$) is used to calculate the likely item nonresponse for Internet and gym respondents:

$$\text{predicted item nonresponse } (\%)_i = 1.09 + 5.04 x_{1i}$$

where x_i is the respondents' score on a dummy variable indicating whether or not he participated in the pen-and-paper survey.

The regression equation predicts a mode effect whereby gym respondents are likely to have 5.04% (s.e. = 0.37%) more item nonresponse than Internet respondents. This regression analysis only accounts for 14% of the variation in item nonresponse, however, and there are clearly other factors in operation which the following will examine.

Respondents' propensity to skip questions may also be influenced by respondent related variables and this possibility is explored through examination of the item nonresponse produced by subgroups of the sample. The subgroups selected were those that were used in previous chapters with the exception of characteristics that could not be defined for the gym respondents. Hours of online cruising was re-coded into a variable describing whether or not the respondent went online cruising in the last week in order to take account of the large proportion of gym respondents who had not done so (64.2%) in comparison to a much smaller proportion of Internet respondents (11.1%). Although place of birth and some of the survey behaviour questions were not available for the pen-and-paper survey, they were included here to provide comparison with data analysed for the Internet 2003 sample in earlier chapters. Speed of completion and altruistic motivation were included to explore a hypothesis of satisficing.

The variables that were used to define the respondent subgroups were inspected to see how much item nonresponse they contained (see Appendix 9). Item nonresponse for the questions upon which these variables were based was mostly low and generally less than the average item nonresponse for each survey (that is, less than 1.6% for the web survey and 6.7% for the pen-and-paper survey). The social class variable, which is derived from a number of questions, had a higher proportion of item nonresponse in both the web survey (16.0%) and the pen-and-paper survey (23.8%). HIV status, which is also a derived variable, had higher than average item nonresponse in the web survey (2.9%), as did questions about online cruising in the last week (2.1%) and taking part in the clinic survey (1.8%). The only other variable with higher than average item nonresponse for the gym survey was about knowing other men who were HIV positive (21.1%).

Table 7.1: Significant associations between subgroups and item nonresponse

	Web survey	Pen-and-paper survey
Sociodemographic profile		
Getting older ¹		
White (vs minority ethnic) ²	decrease	decrease
Being a student ²		
Being in work ²	decrease	decrease
Not working ²	increase	increase
Holding a degree / professional qualification ²		
Born in the UK ²	decrease	n/a
Higher social class ¹		
Sexual orientation and sexual behaviour		
<i>Sexual orientation</i>		
Identifying as gay (vs bisexual) ²	decrease	decrease
Being less open about orientation (vs more open) ²		
<i>Sexual behaviour</i>		
Having any UAI ²	increase	same
Having only concordant UAI ²	increase	decrease
Having non-concordant UAI ²	increase	increase
Health, social and emotional		
<i>Health</i>		
Being HIV positive ²	increase	increase
Being HIV negative ²		
Having tested for HIV ²		
Having better health ¹		
<i>Social</i>		
Having a male partner ²		
Knowing men with HIV ²		
<i>Emotional</i>		
Being depressed ¹		
Having suicidal thoughts ¹		
Being lonely ¹		
Survey behaviour and Internet use		
<i>Survey behaviour</i>		
Starting from gaydar (vs gay.com) ²		n/a
Having taken part a gym survey ²	increase	increase
Having taken part in 2002 web survey ²		
Having taken part in 2002 clinic survey ²		
Fast survey completion ²	decrease	n/a
Medium survey completion ²	increase	n/a
Slow survey completion ²		n/a
Taking part in the small hours ²		n/a
Taking part in the morning ²		n/a
Taking part in the afternoon ²		n/a
Taking part in the evening ²		n/a
Later survey participation (1st to 5th week) ¹		n/a
Altruistic motivation ¹		n/a
<i>Internet use</i>		
Increasing hours on Internet per week ¹	decrease	decrease
Whether went online cruising in last week ²		

 $p < \text{or} = 0.01$  $0.01 < p < \text{or} = 0.05$

 indicates whether independent variable is associated with increase or decrease in item nonresponse

 indicates variable was not available in gym survey

¹ Ordinal variable (Kruskal-Wallis test)

² Dichotomous variable (Mann-Whitney U test)

Table 7.1 is a summary of the significant associations between subgroups of respondents and the percentage of questions that they skipped. The first column headed “Web survey” indicates whether associations were found between the subgroups of web respondents and item nonresponse. The second column headed “Pen-and-paper survey” contains the same information for the gym respondents. Associations within each survey mode that are significant at the 0.01 level are shaded black and those at the 0.05 level are shaded grey. Where a significant association was found in one mode but not the other, the direction of the difference is shown for the second mode for comparative purposes.

The main finding from this analysis is that very few of the respondent related variables generated different proportions of item nonresponse. This was particularly evident for the gym respondents.

The table shows that the only three sociodemographic characteristics associated with item nonresponse were ethnicity, work status and place of birth. White respondents were significantly less likely to skip questions in the web survey (0.97% vs 1.80%, $p \leq 0.01$) and the trend was the same in the pen-and-paper survey although this finding was not significant (5.75% vs 8.96%). Internet respondents who were born in the UK were also less likely to skip questions (1.04% vs 1.21%). Respondents who were unemployed or retired were significantly more likely to skip questions in both the web (1.66% vs 1.03%, $p \leq 0.01$) and pen-and-paper surveys (9.58% vs 5.67%, $p \leq 0.05$), and gym respondents who were working were less likely to skip questions (5.70% vs 7.95%). Thus minority ethnic respondents and those who are not working were more likely to skip questions in both survey modes which indicates that the effect of these sociodemographic characteristics on item nonresponse is independent of the mode effect.

Sexual orientation and sexual behaviour were significantly associated with item nonresponse for the web survey. The findings for sexual orientation were mirrored for gym respondents although not significantly but the findings on sexual behaviour were not replicated in the pen-and-paper survey. Gay Internet respondents were less

likely to skip questions than bisexual Internet respondents (1.03% vs 1.62%, $p \leq 0.05$), as were gay gym respondents (6.01% vs 9.27%). Internet respondents who reported UAI were more likely to skip questions than those who did not (1.36% vs 0.83%, $p \leq 0.01$). This indicates that the mode effect on item nonresponse does not appear to interact with sexual identification but may interact with sexual risk behaviour, increasing item nonresponse for Internet respondents compared to a mixed and non-significant effect for gym respondents.

There was little association between independent variables describing health, social and emotional state and item nonresponse. The exception was HIV status, with HIV positive men significantly likely to skip more questions in both the web survey (1.86% vs 0.94%, $p \leq 0.01$) and the pen-and-paper survey (6.70% vs 5.92%, $p \leq 0.05$).

Gym respondents who had taken part in a previous gym survey were likely to skip more questions (5.44% vs 4.67%, $p \leq 0.05$) and there was a similar non-significant effect for web survey respondents (1.33% vs 1.08%). Item nonresponse was associated other survey behaviour variables that were recorded for the web survey but unavailable for the pen-and-paper survey. In these cases, the mode effect cannot be explored but the independent influence of these factors is examined. Speed of survey completion was divided into three categories: fast (up to 17 minutes), medium (18 to 27 minutes) and slow (28 to 41 minutes). Those taking 42 minutes or more were defined as outliers according to the stem-and-leaf plot and were removed from any further analysis. Fast respondents had the least item nonresponse (0.84%), followed by slow respondents (1.03%), with medium respondents having the most (1.27%). There were significant differences between fast and other respondents ($p \leq 0.01$) and medium and other respondents ($p \leq 0.05$). Although time of day and week of completion were not associated with item nonresponse, there was a non-significant but clear linear effect whereby those who completed the web survey in later days became increasingly more likely to skip questions. Item nonresponse was not significantly related to the respondents' score on the altruistic dimension described in Chapter 4.

Gym respondents who spent longer on the Internet were significantly less likely to skip questions (4.32% vs 5.99%, $p \leq 0.05$) and there was a similar but non-significant trend among web survey respondents (0.97% vs 1.18%).

The general lack of significant association between respondent variables and item nonresponse indicates that they had little impact on the likelihood that respondents would skip questions. Where differences were found they tended to be replicated across modes indicating that there was no interaction between survey mode and subgroup characteristics.

A respondent who is presented with more questions will also be presented with a greater opportunity to skip questions. This may contribute to the finding that certain subgroups were more likely to skip questions because these subgroups may have taken longer routes through the survey. The association between subgroup membership and total number of questions presented was therefore examined in order to investigate whether this was the real reason behind greater item nonresponse for certain subgroups.

As previously discussed, the mean number of questions presented was 113.8 (s.d. 11.5) for the web survey and 83.9 (s.d. 11.0) for the pen-and-paper survey. There was a significant positive correlation of 0.20 ($p \leq 0.01$) between the total number of questions and the proportion of item nonresponse for the web survey and a significant negative correlation of -0.17 for the pen-and-paper survey. Possible explanations for this discrepancy will be raised in the discussion of findings.

Table 7.2: Significant associations between subgroups and number of questions

Sociodemographic profile

Getting older ¹
 White (vs minority ethnic) ²
 Being a student ²
 Being in work ²
 Not working ²
 Holding a degree / professional qualification ²
 Born in the UK ²
 Higher social class ¹

Web survey

more questions
fewer questions
more questions
fewer questions

Pen-and-paper survey

no linear trend
more questions
n/a

Sexual orientation and sexual behaviour

Sexual orientation

Identifying as gay (vs bisexual) ²
 Being less open about orientation (vs more open) ²

more questions
fewer questions

more questions
fewer questions

Sexual behaviour

Having any uai ²
 Having only concordant uai ²
 Having non-concordant uai ²

more questions
more questions
more questions

more questions
more questions
more questions

Health, social and emotional

Health

Being HIV positive ²
 Being HIV negative ²
 Having tested for HIV ²
 Having better health ¹

more questions
more questions
fewer questions

more questions
more questions
fewer questions

Social

Having a male partner ²
 Knowing men with HIV ²

more questions
more questions

more questions

Emotional

Being depressed ¹
 Having suicidal thoughts ¹
 Being lonely ¹

Survey behaviour and Internet use

Survey behaviour

Starting from gaydar (vs gay.com) ²
 Having taken part a gym survey ²
 Having taken part in 2002 web survey ²
 Having taken part in 2002 clinic survey ²
 Fast survey completion ²
 Medium survey completion ²
 Slow survey completion ²
 Taking part in the small hours ²
 Taking part in the morning ²
 Taking part in the afternoon ²
 Taking part in the evening ²
 Later survey participation (1st to 5th week) ¹
 Altruistic motivation ¹

more questions
more questions
more questions
fewer questions
more questions
more questions
no linear trend

n/a
more questions
more questions
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a
n/a

Internet use

Increasing hours on Internet per week ¹
 Whether went online cruising in last week ²

more questions

more questions
more questions

 $p < \text{or} = 0.01$  $0.01 < p < \text{or} = 0.05$

 more indicates the total number of questions associated with the independent variable

 n/a indicates variable was not available in gym survey

¹ Ordinal variable (One-way analysis of variance)

² Dichotomous variable (t test)

The contrasting correlation coefficients for the web and pen-and-paper surveys indicate that the number of questions presented does not have a consistent impact across survey modes. It is therefore unlikely that the cross-modal associations that were found between particular subgroups and item nonresponse are related to the number of questions presented. The following analysis seeks to provide further evidence against the possibility that the number of questions presented is an intervening variable in the relationship between item nonresponse and ethnicity, whether the respondent is working, sexual identification, high risk sex and being HIV positive. Table 7.2 is a summary of the analysis which examined whether there was an association between subgroup membership and the total number of questions presented.

There were significant associations between subgroups and the total number of questions presented for 21 out of the 37 variables used in the web survey analysis and 15 out of the 26 variables used in the pen-and-paper survey analysis. In the web survey, the presentation of more questions was significantly associated with getting older, not working, identifying as gay, having UAI, being HIV positive, testing for HIV, having a male partner, knowing men with HIV, starting from gaydar, taking part in the 2003 pen-and-paper gym survey or the 2002 web survey, completing the survey slowly or at a medium pace and spending more time on the Internet. The presentation of fewer questions was significantly associated with being a student, being born in the UK, being less open about sexual orientation and fast survey completion. In the pen-and-paper survey, the presentation of more questions was significantly associated with not working, identifying as gay, having UAI, being HIV positive, testing for HIV, knowing men with HIV, taking part in the 2002 web or clinic surveys, spending more time on the Internet and use of online cruising. The presentation of fewer questions was significantly associated with being less open about sexual orientation and having better health.

Whereas white respondents in both surveys were less likely to skip questions, ethnicity was not associated with any differences in the number of questions

presented. Those who were not working were, however, more likely to skip questions and to be presented with more questions (web survey 118.6 vs 113.2; pen-and-paper survey 86.6 vs 83.6), as were Internet respondents who had had UAI (120.6 vs 107.7), men who were HIV positive (web survey 126.0 vs 112.2; pen-and-paper survey 92.9 vs 82.1) and Internet respondents who completed the survey at a medium pace (115.5 vs 111.9).

Fast survey completion was associated with a decrease in both number of questions and item nonresponse for Internet respondents (108.7 vs 116.4) and this was also the case for Internet respondents who were born in the UK (112.8 vs 116.5). Contrary to this pattern, an increased number of questions but decreased item nonresponse was associated with identifying as gay (web survey 114.5 vs 108.3; pen-and-paper survey 84.1 vs 78.4) and gym respondents spending more time on the Internet (86.8 vs 82.2). Although gym respondents were more likely to skip questions if they had participated in a previous pen-and-paper gym survey, this was not associated with any differences in the number of questions presented. As described above, there were a number of significant associations in the total number of questions presented for other subgroups where no difference in item nonresponse had been found.

These findings suggest that the higher propensity of certain subgroups to skip questions cannot be explained by the different number of questions with which these groups were presented, although the effect cannot be ruled out for all subgroups. This will be further examined in the following multivariate analysis.

Further examination was made of the combination of subgroup characteristics that would be the best predictor of increased item nonresponse, with the total number of questions included in order to control for its effects. This analysis was undertaken in the spirit of exploration and the findings are highly tentative given that the data violate the assumption of normality.

Subgroup variables that were significantly associated with item nonresponse were included in a stepwise multiple linear regression for Internet respondents and gym

respondents. The final model for the Internet respondents ($F = 19.2$, $p \leq 0.01$) had an adjusted R^2 of 0.07, indicating that 7% of the variation in item nonresponse was accounted for by the number of questions presented and whether or not the respondent was HIV positive (Table 7.3).

Table 7.3: Coefficients predicting item nonresponse for Internet respondents

	Regression coefficient	95% Confidence intervals
Constant (a)	-1.87 **	-3.23 – -0.50
Number of questions presented (b_1)	0.02 **	0.01 – 0.04
Being HIV positive (b_2)	0.63 **	0.19 – 1.06

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Using the regression equation ($\hat{y}_i = a + b_1 x_{1i} + b_2 x_{2i}$), the following can be used to calculate the likely proportion of item nonresponse for each Internet respondent:

$$\text{predicted item nonresponse } (\%)_i = -1.87 + 0.02 x_{1i} + 0.63 x_{2i}$$

where x_{bi} is the score for each respondent on each of the predictive variables.

Thus each additional question presented predicts an increased proportion of 0.02% in item nonresponse. As being HIV positive is coded (1,0), the proportion of item nonresponse for HIV positive respondents is likely to increase by a further 0.63%. The standardised beta coefficients take the different scales of the two predictive variables into account and tell us that the number of questions presented has a somewhat greater impact on the predicted item nonresponse (0.19) than being HIV positive (0.14).

Regression analysis was then undertaken to examine the combination of subgroup characteristics that would be the best predictor of increased item nonresponse in the pen-and-paper survey. Again, subgroup variables that were significantly associated with item nonresponse were included in the linear regression and the total number of questions was included to control for its effects. The final model for the gym respondents ($F = 5.79$, $p \leq 0.01$) had an adjusted R^2 of 0.03, indicating that just 3% of the variation in item nonresponse was accounted for by Internet usage, HIV status and the total number of questions presented (see Table 7.4).

Table 7.4: Coefficients predicting item nonresponse for gym respondents

	Regression coefficient	95% Confidence Intervals
Constant (a)	9.16 **	5.89 – 12.44
Hours on Internet per week (b_1)	-0.60 *	-1.09 – -0.12
HIV positive (b_2)	1.67 **	0.52 – 2.81
Number of questions presented (b_3)	-0.05 *	-0.09 – -0.01

Note: * $p \leq 0.05$, ** $p \leq 0.01$

The following can be used to calculate the likely proportion of item nonresponse for each gym respondent:

$$\text{predicted item nonresponse (\%)}_i = 9.16 - 0.60 x_{1i} + 1.67 x_{2i} - 0.05 x_{3i}$$

where x_{bi} is the respondent's score on each of the predictive variables.

The equation indicates that incremental increases in Internet use per week are associated with reduced item nonresponse whereas being HIV positive is associated with a 1.7% increase in item nonresponse. It also indicates that each additional question presented predicts a decreased proportion of 0.05% in item nonresponse.

The standardised beta coefficients are -0.12 for hours on the Internet, 0.14 for HIV status and -0.12 for the number of questions, telling us that these variables have a similar impact on item nonresponse. The standardised beta coefficient for the number of questions is somewhat smaller than the equivalent coefficient for the web survey (0.12 vs 0.19) indicating that it is less predictive of item nonresponse in the pen-and-paper survey, whereas being HIV positive was equally predictive in both surveys.

The lack of variance explained by either of the above models for predicting item nonresponse in the web and pen-and-paper surveys indicates that other variables may be more powerful predictors. In the light of this, the following seeks to examine the influence of the question on item nonresponse. It begins by exploring the evidence for a general mode effect on item nonresponse to questions in the web and pen-and-paper surveys before examining the impact of individual questions.

7.3.2 Influence of questions and survey mode

As previously described, item nonresponse for each question is calculated as the total amount of item nonresponse for that question divided by the total number of respondents who were presented with the question. 6.5% of questions in the pen-and-paper survey were never skipped compared to 36.9% of questions in the web survey. Table 7.5 (on the following page) shows the range of item nonresponse. The median level of item nonresponse was 0.5% for questions in the web survey and 3.6% for questions in the pen-and-paper survey. The maximum level of item nonresponse was 23.9% in the web survey for a question about partner HIV status and 40.4% in the pen-and-paper survey for a question about job description. The mean item nonresponse for all questions was 1.6% (s.d. 3.8%) in the web survey and 6.7% (s.d. 8.1%) in the pen-and-paper survey. This shows that questions in the pen-and-paper survey were significantly more likely to be skipped than those in the web survey ($U = 3,801.5$, $p \leq 0.01$). It is important to add that 22.5% of web survey questions were compulsory, as described previously, and this issue is dealt with in the following stage of the analysis.

Table 7.5: Item nonresponse associated with questions

	Web survey	Pen-and-paper survey
Minimum	0.0%	0.0%
Median	0.5%	3.6%
Maximum	23.9%	40.4%

The low item nonresponse for questions in the web survey is reflected in the finding that 70.0% of questions were skipped by no more than 1% of respondents. The median item nonreponse of 0.5% indicates that half of the questions in the web survey were skipped by no more than 0.5% of the Internet respondents. Although the vast majority of questions (91.9%) were skipped by no more than 4% of respondents, this is followed by a gradual levelling off in the distribution which ends with the maximum item nonresponse of 23.9% to the question about partner HIV status. This distribution is reflected in the comparatively high standard deviation.

The higher mean item nonresponse and comparatively high standard deviation for questions in the pen-and-paper survey is reflected in a more even distribution in the level of item nonresponse with which these questions were associated. This is illustrated by the finding that 21.8% of pen-and-paper questions were skipped by up to 1% of respondents, 58.1% were skipped by no more than 5% of respondents and 76.6% were skipped by no more than 10%, with a maximum item nonresponse of 40.4% of respondents for the question about job description. The median item nonresponse was 3.6%, indicating that half of the questions in the pen-and-paper survey were skipped by no more than 3.6% of the gym respondents.

These findings are consistent with a mode effect whereby questions in the pen-and-paper survey were more likely to be skipped than questions in the web survey. Before continuing with this investigation of the mode effect on a selected set of questions, an exploration of the impact of question order on item nonresponse was made in order to investigate that possibility that respondents may be more likely to

skip questions towards the end of the questionnaire. The question number was used as an indicator of the position of the question within the questionnaire. The correlation between question number and item nonresponse was calculated for each survey. There was no correlation between question number and item nonresponse for the web survey ($r = 0.01$) and the low correlation between question number and item nonresponse for the pen-and-paper survey ($r = 0.12$) was not significant. This indicates that question order has little or no impact on item nonresponse in either survey mode.

The above analysis was carried out on the full set of questions in each of the questionnaires but, as detailed earlier, some of the questions in the web survey could not be skipped and it is possible that this contributed to the reduced item nonresponse for this survey. The following analysis therefore excludes any questions that were compulsory in the web survey and includes only questions which could be matched across modes. The questions included are those where the wording and format were identical or nearly so, resulting in a total of 78 matched questions.

The minimum and maximum item nonresponse were the same as in the earlier analysis of all survey questions (minimum = 0% in both surveys; maximum = 23.9% in the web survey and 40.4% in the pen-and-paper survey). The exclusion of compulsory questions, however, means that only 14.1% of these questions were never skipped in the web survey (compared to 36.9% for all questions) and 5.1% were never skipped in the pen-and-paper survey (compared to 6.5% for all questions). The mean item nonresponse for the 78 matched questions was 2.8% (s.d. 5.0%) in the web survey and 7.5% (s.d. 8.7%) in the pen-and-paper survey. In both surveys there is higher item nonresponse for the matched questions than for the all the survey questions where there was 1.6% and 6.7% item nonresponse respectively. Although this would be expected for the web survey because of the removal of compulsory questions, there is no obvious explanation as to why this should be so for the pen-and-paper survey and it should be noted that these questions may not be representative of the full range of questions in this survey. However, the mode effect

remains for these questions which are significantly more likely to be skipped in the pen-and-paper survey than in the web survey ($z = -6.93, p \leq 0.01$).

There is a 0.82 correlation ($p \leq 0.01$) between item nonresponse for the matched web and pen-and-paper questions, indicating a high degree of similarity between the likelihood of missing particular questions in both the web and pen-and-paper surveys. The following analysis will seek to examine the extent to which all of the 78 matched questions conform to the overall relationship illustrated in Figure 7.7 and potential sources of nonconformity.

Figure 7.7: Item nonresponse for the 78 matched questions

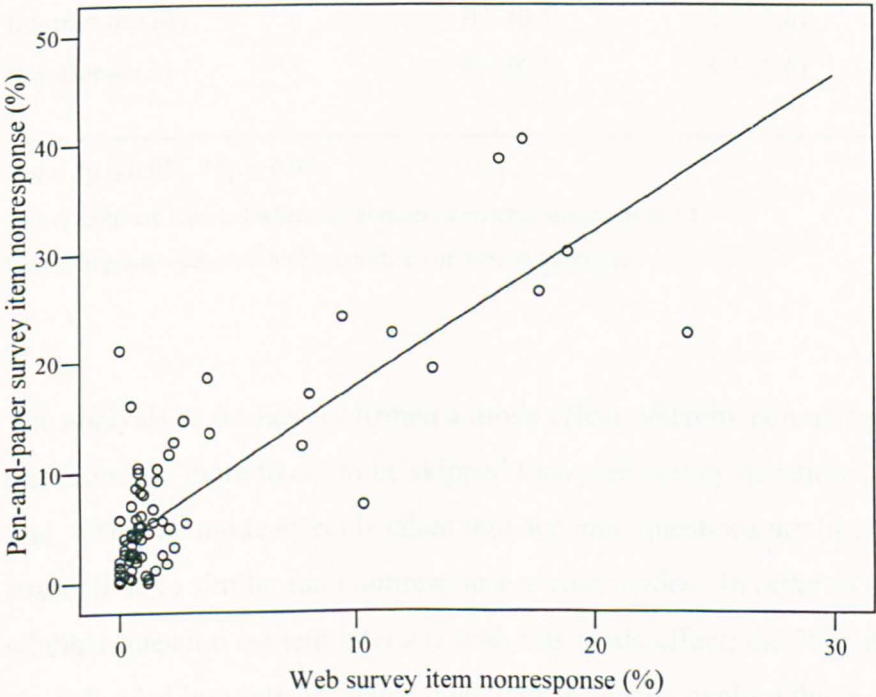


Table 7.6: Item nonresponse for subsets of questions in web and pen-and-paper surveys

Question topic (no of questions)	Web survey mean (s.d.)	Pen-and-paper survey mean (s.d.)	Correlation
Sociodemographic (6)	6.1 (6.4)	13.7 (14.8)	0.81 *
Sociodemographic (5) ¹	3.9 (3.8)	8.3 (7.6)	0.27
Sex and sexuality (32)	4.2 (6.7)	9.4 (10.1)	0.89 **
Sex and sexuality (24) ¹	0.7 (0.6)	4.2 (3.2)	0.47 *
Drug use (11)	1.5 (0.8)	9.2 (4.6)	0.30
Health (8)	1.5 (2.6)	2.4 (4.1)	0.95 **
HIV attitudes (6)	1.2 (0.8)	4.7 (0.7)	0.70
Survey behaviour (3)	0.9 (0.8)	2.6 (0.1)	-
Relationship (3)	0.8 (0.7)	0.6 (0.7)	-
Internet use (4)	0.5 (0.5)	2.3 (1.6)	-
Emotional (3)	0.4 (0.2)	5.1 (1.6)	-

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Correlations are reported where the number of matched questions is ≥ 5 .

¹ excluding questions with high proportions of item nonresponse

The analysis so far has confirmed a mode effect whereby pen-and-paper survey questions are more likely to be skipped than web survey questions. This suggests that, when the mode effect is taken into account, questions are likely to be susceptible to similar item nonresponse across modes. In order to investigate whether question content interacts with this mode effect, the 78 matching questions were divided into sets of related questions to further explore the impact of question content on item nonresponse.

The findings of this analysis are summarised in Table 7.6. It shows the mean item nonresponse for each set of questions by survey mode and the correlation between modes where the number of matched questions was greater than or equal to five. Two questions about whether the respondent knew any gay men who were HIV positive were not included because they did not fit into any of the question sets. The

sets of questions are ordered according to item nonresponse for the web respondents before adjustments, from highest to lowest. A full list of the content of the questions and item nonresponse by mode is provided in Appendix 10.

Table 7.6 shows that in all cases apart from the set of three questions about the respondent's current relationship, sets of questions in the pen-and-paper survey were more likely to result in higher item nonresponse. Table 7.6 shows that certain sets of questions are more likely to result in higher item nonresponse but this effect appears to operate consistently across modes. The following will examine each set of questions separately in order to weigh up the evidence for whether there is an interactive effect of question content and mode which operates over and above the general mode effect that has been identified.

The *sociodemographic* questions (ethnicity, work status and education) were the most likely questions to be skipped by both Internet and gym respondents (6.1% and 13.7% respectively). The question which asked for a description of the respondent's job generated the most item nonresponse in both surveys (17.0% and 40.4% respectively). This seems likely to be the result of the cognitive burden of this open question which asked respondents to briefly summarise their jobs and may also have amounted to a repetition of the previous question about job title. The high correlation ($r = 0.81$) between the modes on item nonresponse to these six questions was reduced to 0.27 when this question is removed and the mean item nonresponse fell to 3.9% for the web survey and 8.3% for the pen-and-paper survey.

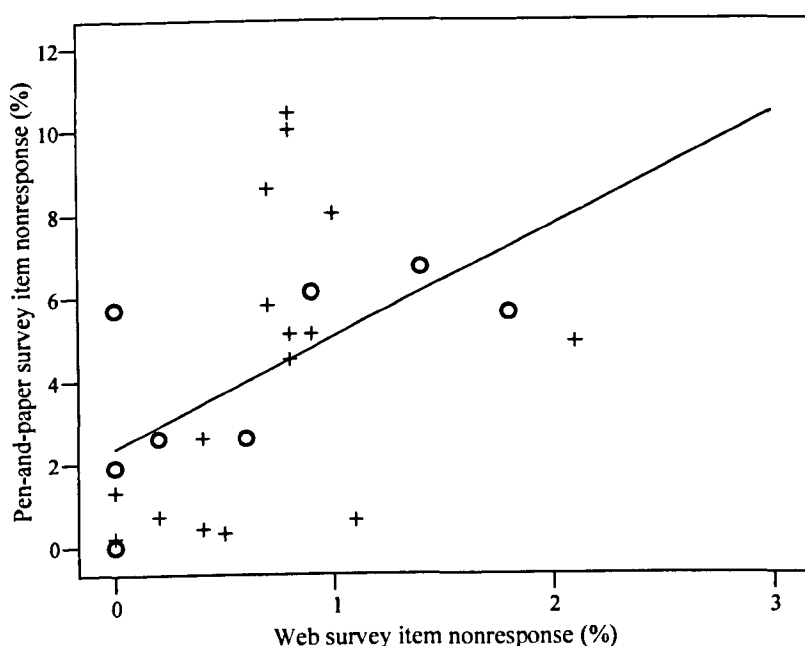
These findings indicate that the question format may be more highly implicated in item nonresponse than question content. Thus item nonresponse in both surveys was found to be particularly high where the question format was likely to be similarly burdensome for both Internet and gym respondents. Other sociodemographic questions generated lower levels of item nonresponse and were less likely to conform to an overall linear relationship between the proportions of item nonresponse for the web and pen-and-paper surveys.

Questions about *sex and sexuality* were the second most likely to be skipped by both Internet and gym respondents (4.2% and 9.4%). This set of questions includes eight questions for which respondents were required to enter the number of UAI partners who either lived in London or with whom they had discussed HIV status, with the same question format used in both the web and pen-and-paper surveys. These questions resulted in the highest proportions of item nonresponse among the sex and sexuality questions in both modes (8.0 to 23.9% for the web survey and 17.0 to 38.6% for the pen-and-paper survey). This is likely to be partially caused by respondents leaving a blank instead of entering “0” in answer to the question which is a recognised cause of item nonresponse (de Leeuw 2001). Removal of these questions, reduced item nonresponse for the remaining set of 24 questions to 0.7% for Internet respondents and 4.2% for the gym respondents. The correlation between the two modes is reduced from 0.89 to 0.47 when these questions are removed.

If there is an interactive effect of mode and question content whereby questions of a sensitive nature are more likely than other questions to be skipped in a pen-and-paper survey, we would expect item nonresponse to be disproportionately higher for sensitive questions in the pen-and-paper survey. On the basis of the literature review, questions about UAI were selected as the most likely sensitive sexual questions. The questions with high (and highly correlated) levels of item nonresponse were not included in this analysis because they may obscure the relationship between questions with lower proportions of item nonresponse.

Figure 7.8 (on the following page) is the scatterplot of item nonresponse for Internet and gym respondents in a reduced set of 24 questions of a sexual nature. Questions about UAI are represented by the highlighted circles and the remaining questions are represented by crosses.

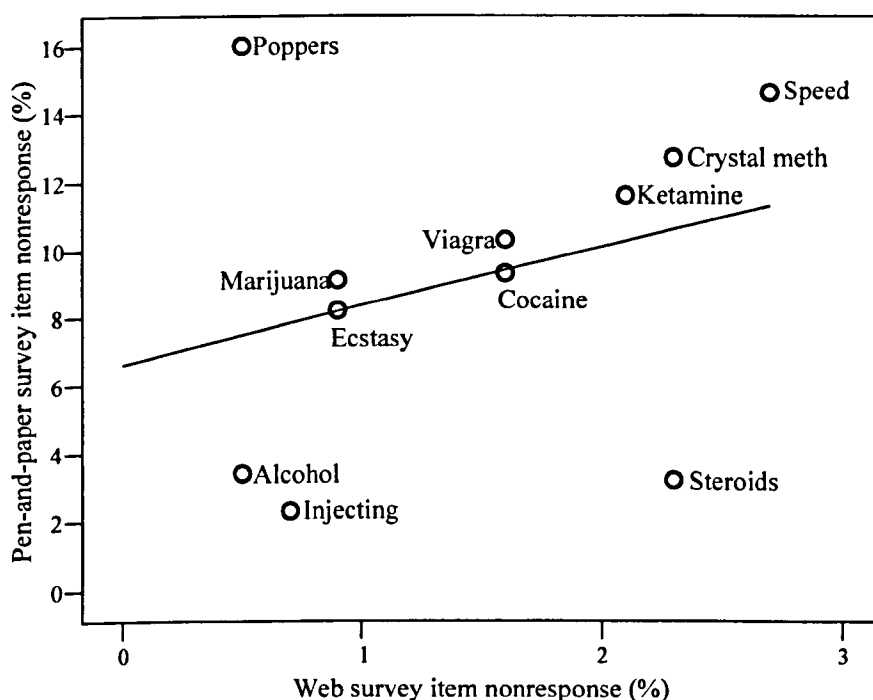
Figure 7.8: Proportion of item nonresponse for sensitive sexual questions



An interactive effect of mode and question content would predict that the questions about UAI would be more likely to fall above the regression line because they would be disproportionately more likely to be skipped by the gym respondents. The plot shows, however, that the questions conform reasonably well to a linear relationship between modes on questions of sex and sexuality. They are clustered relatively close to the regression line and fall on both sides of it, in a manner indicating that they are not systematically different from the other questions of sex and sexuality.

The next set of questions to be examined were those about *alcohol and drug use*. This set of questions was also more likely to be skipped in the pen-and-paper survey (9.2% vs 1.5%). As Figure 7.9 (on the following page) shows, the question about steroids is a poor fit for the linear pattern that describes the relationship between the modes for most of the questions. This may be because it was presented in somewhat different formats in the two surveys. It is furthermore it is of greater relevance to the gym respondents which may have encouraged them to answer this question. Its removal from the analysis increases the correlation between modes from 0.30 to 0.53.

Figure 7.9: Proportion of item nonresponse for alcohol and drug use questions



Again, an interactive effect of mode and question content would predict that expected item nonresponse would be disproportionately higher for sensitive questions in the pen-and-paper survey. Although questions of alcohol and drug use are commonly labelled as sensitive, the literature review did not reveal in what way different recreational drugs may be considered as more or less sensitive to the population of gay and bisexual men surveyed here. The legal status of the substance is therefore used as a measure of question sensitivity, given that the penalties for possession of an illegal substance depends on its status.

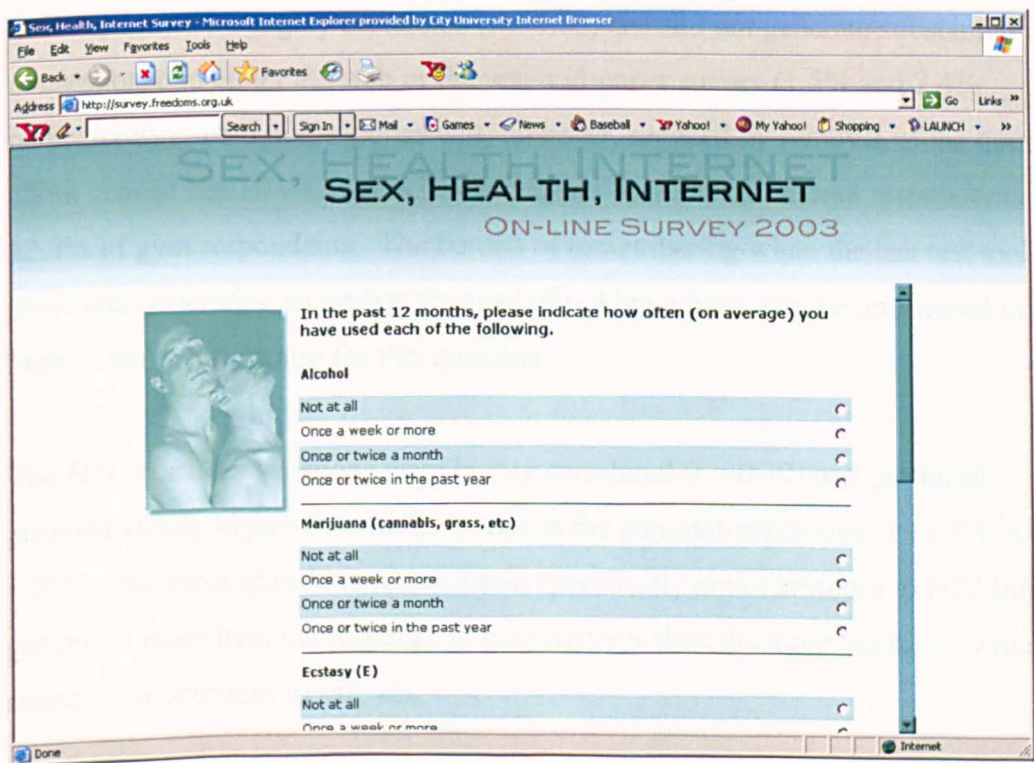
Cocaine and ecstasy are both class A drugs but were not more likely to be skipped in the pen-and-paper survey than marijuana, speed or crystal methamphetamine which are class B drugs. Alcohol is legally available to adults and the question was indeed less likely to be skipped in the pen-and-paper survey than expected by a linear relationship between modes. Amyl nitrate (poppers) is not a classified drug and yet was far more likely to be skipped than alcohol in the pen-and-paper survey (16.0% vs 3.4%), though not in the web survey (0.5% vs 0.5%).

Figure 7.10: Pen-and-paper survey format for questions about alcohol and drug use

IN THE *PAST 12 MONTHS* please indicate how often (on average) you have used each of the following:

	About once a week or more	About once or twice a month	Only once or twice in past year	Not at all
Alcohol	☐	☐	☐	☐
Marijuana (cannabis, grass, etc)	☐	☐	☐	☐
Ecstasy ('E')	☐	☐	☐	☐
Speed (amphetamine)	☐	☐	☐	☐
Cocaine ('coke')	☐	☐	☐	☐
Viagra	☐	☐	☐	☐
Ketamine ('K')	☐	☐	☐	☐
Crystal methamphetamine	☐	☐	☐	☐
Poppers (amyl nitrate)	☐	☐	☐	☐

Figure 7.11: Web survey format for questions about alcohol and drug use



SEX, HEALTH, INTERNET
ON-LINE SURVEY 2003

In the past 12 months, please indicate how often (on average) you have used each of the following.

Alcohol

Not at all ☐

Once a week or more ☐

Once or twice a month ☐

Once or twice in the past year ☐

Marijuana (cannabis, grass, etc)

Not at all ☐

Once a week or more ☐

Once or twice a month ☐

Once or twice in the past year ☐

Ecstasy (E)

Not at all ☐

Once a week or more ☐

It is possible that the grid-like format of the pen-and-paper survey (see Figure 7.10) contributed to the increased nonresponse to the poppers question if respondents got confused further down the list about which tick box referred to which substance. Questions in the web survey were presented in the same order as those in the pen-and-paper survey but separately as shown in Figure 7.11, which may have facilitated more accurate responding throughout the list of questions. The fact that the response categories were presented in different orders in the two surveys, may also have contributed to gym respondents being more likely to skip questions than tick the “not at all” box. These differences in format may have had an important impact on item nonresponse. Again, the question format appears to be implicated in the disproportionately high levels of item nonresponse for alcohol and drug questions in the pen-and-paper survey whereas the legal status of the drug does not increase the likelihood that it will be skipped in the pen-and-paper mode. Indeed, the legal status of the drug does not appear to have any bearing upon the likelihood that the question will be skipped in either survey.

The *health* questions (general health; HIV and STD testing, treatment and information) were highly correlated ($r = 0.95$) and did not generate substantial item nonresponse in either the web or the pen-and-paper survey (1.5% and 2.4% respectively). Item nonresponse was, however, reduced by removal of the question about year of last HIV test which was skipped by 7.7% of Internet respondents and 12.3% of gym respondents. The burden of remembering when the last test took place and generating an answer (instead of ticking a box) may be implicated in the higher item nonresponse for this question.

The *HIV attitudes* questions were highly correlated ($r = 0.70$) and produced proportionately higher item nonresponse in the pen-and-paper survey (4.7% vs 1.2%). The three questions which asked specifically about attitudes to HIV infection generated more item nonresponse in both surveys than the three questions which asked about attitudes to safe sex.

The remaining sets of questions produced generally low levels of item nonresponse and were represented by just three or four questions. It is not therefore possible to determine whether there is any reliable correlation between modes for these sets of questions. The disproportionately higher item nonresponse for the emotional questions in the pen-and-paper survey (5.1% vs 0.4%) may be an exception to the general lack of mode effect on reporting sensitive data and may merit further investigation.

To summarise, the above analysis has indicated that there is a consistent effect of survey mode on likelihood of item nonresponse to questions on a range of different topics. Although item nonresponse to equivalent sets of questions in the web and pen-and-paper surveys was not always highly correlated, particularly for questions which had low levels of item nonresponse in both surveys, the mode effect was pervasive. It was not found to be the case that sensitive questions were more likely to be skipped in the pen-and-paper survey over and above the general mode effect. The findings, however, indicate that question format is implicated in higher item nonresponse whether it occurs within or between modes.

In order to further explore the evidence for a generally linear relationship between item nonresponse in the web and pen-and-paper surveys, item nonresponse for each of the matched questions in the pen-and-paper survey was compared to the equivalent web survey question on a question-by-question basis. Table 7.7 (on the following page) contains the results of this analysis. The first column categorises the relationship between item nonresponse for individual questions in the pen-and-paper survey compared to the web survey, indicating whether it was less than one times that of the web survey, up to two times that of the web survey and so on. The frequency, percentage and cumulative percentage of questions conforming to each of these categories are listed in the next three columns.

Table 7.7: Item nonresponse to equivalent questions in web and pen-and-paper surveys

Item nonresponse in pen-and-paper survey	Frequency	Percentage	Cumulative percentage
Less than 1x web survey	9	11.5	11.5
Up to 2x web survey	12	15.4	26.9
Up to 3x web survey	9	11.5	38.5
Up to 4x web survey	6	7.7	46.2
Up to 5x web survey	4	5.1	51.3
Up to 6x web survey	10	12.8	64.1
Up to 7x web survey	6	7.7	71.8
Up to 8x web survey	1	1.3	73.1
Up to 9x web survey	3	3.8	76.9
Up to 10x web survey	1	1.3	78.2
More than 10x web survey	17	21.8	100.0
Total number of questions	78	100.0	

The first point to note is that, consistent with the general mode effect, only 11.5% of pen-and-paper survey questions had less item nonresponse than the equivalent question in the web survey. Item nonresponse in the pen-and-paper survey was up to 5 times that of the web survey for half of the questions and that it was greater than 10 times that of the web survey for one fifth of the questions. This indicates that there is a certain amount of variation around the linear relationship indicated by the 0.82 correlation described earlier. The following will therefore examine the seventeen questions where item nonresponse in the pen-and-paper survey was greater than 10 times that of the web survey, in order to explore whether this disproportionately high item nonresponse was the result of an interaction between mode effect and question content.

Item nonresponse for the seventeen questions was very low in the web survey. It ranged from 0.0% to 0.9% with a mean of 0.28% (s.d. 0.34%) which is much lower

than the overall mean item nonresponse for all the web survey matched questions (2.8%, s.d. 5.0%). Mean item nonresponse was also low for the pen-and-paper survey questions, ranging from 0.2% to 21.1% with a mean of 6.14% (s.d. 5.85%) which was also lower than the overall mean for all pen-and-paper survey matched questions (7.5%, s.d. 8.7%). This suggests that these questions may not fit the linear relationship because they had such low item nonresponse in both modes.

Eight of the seventeen questions are accounted for where item nonresponse in the web survey was 0.0%. In seven of these questions, item nonresponse in the equivalent pen-and-paper survey questions was less than the mean item nonresponse for all pen-and-paper survey questions. In the eighth question, item nonresponse was 21.1% in the pen-and-paper survey which bears exploration. This question (see Figure 7.12) asked respondents about whether they personally knew gay or bisexual men who were HIV positive.

Figure 7.12: Pen-and-paper survey format for question about HIV positive men

Do you personally know any gay/bisexual men with HIV infection?

YES ☐ If YES, were any of these men diagnosed with HIV in the last 12 months? YES ☐ NO ☐
 NO ☐

Inspection of the data revealed that 88.3% of the gym respondents who skipped the question about knowing men who were HIV positive went on to answer the following question about when these men were diagnosed. Figure 7.12 shows the format of the question in the pen-and-paper survey and illustrates how it is likely that the majority of men who skipped this question thought that they were answering it but ticked one of the boxes corresponding to the following question about whether these men were diagnosed in the last 12 months. It therefore appears that the greater likelihood of skipping this question in the pen-and-paper survey is related to the question format which was not controlled in this nonexperimental design.

Previous findings indicated that questions with the same problematic format may result in higher item nonresponse within both survey modes and the present finding indicates that the use of different question formats may similarly impact item nonresponse between surveys. It is an example of how the computerisation of a web survey can reduce item nonresponse when questions are presented on separate pages and automatic routing is used whereas pen-and-paper surveys may need to make trade offs between optimising question design and reducing questionnaire length.

The next three of the seventeen questions are accounted for where item nonresponse in the web survey was 0.2% and also low for the equivalent questions in the pen-and-paper survey, ranging from 2.6% to 4.0%. The remaining six questions are summarised in Table 7.8 and presented in order of increasing item nonresponse in the web survey.

Table 7.8: Questions with disproportionately high pen-and-paper item nonresponse

Question content	Item nonresponse (%)	
	Web	Pen-and-paper
Whether respondent has had suicidal thoughts	0.5	7.0
Whether respondent has used poppers	0.5	16.0
Number of venue anal sex partners in past 3 mths	0.7	8.6
Number of venue sex partners in past 3 mths	0.8	10.0
Number of anal sex partners (with condom) in past 3 mths	0.8	10.4
Whether respondent has used marijuana	0.9	9.1

The table shows that questions about whether the respondent had suicidal thoughts and those relating to use of recreational drugs and numbers of sex partners were likely to have disproportionately high item nonresponse in the pen-and-paper survey.

Three of these questions were about numbers of sexual partners and Figure 7.13 illustrates the format of such questions. It is possible that the follow up question on the number of sexual partners was more likely to be skipped in the pen-and-paper survey because of the format whereby two questions are combined into one. In the web survey, by comparison, each question was presented on a separate page.

Figure 7.13: Format of question about number of sex partners in past 3 months

In the last 3 months have you ...

... had sex with a man you met in any of these places?

YES ☐ —————→ **If YES, how many men?** _____ men

NO ☐ —————→ **If NO, please go to question 55**

It is also likely that the question format may be implicated in the disproportionately high item nonresponse for the questions about recreational drug use, as discussed previously. This illustrates one of the disadvantages of this study, in that the question format was not experimentally controlled across modes and it is therefore not possible to isolate its influence.

This leaves the question about suicidal ideation as potentially the only question where there seems to be no competing explanation other than an interactive effect of question content and mode effect, such that the question was disproportionately much more likely to be skipped by the gym respondents over and above the general mode effect of increased item nonresponse in the pen-and-paper survey.

Before concluding this examination of item nonresponse in individual questions, a brief examination will be made of questions with the highest absolute difference between item nonresponse in the 78 matched questions. The difference in item nonresponse for the two surveys was up to 5% for 64.1% of questions, up to 10% for 87.2% of questions and greater than 10% for the remaining 12.8% of questions. The greatest difference was for the job description question described earlier where there

was 23.4% more item nonresponse in the pen-and-paper survey (40.4 vs 17.0%). This was followed by one of the questions about partner HIV status, also described earlier, where there was 22.6% more item nonresponse in the pen-and-paper survey (38.6 vs 16.0%). The next greatest difference was for the question about knowing men who were HIV positive, which is illustrated in Figure 7.12, and where there was 21.1% more item nonresponse in the pen-and-paper survey. A further 7 questions generated differences in item nonresponse between the modes of between 10 and 20%. These were questions about drug use and partner status, which have already been discussed, and an open question about job title.

There were 9 questions where item nonresponse was higher in the web survey. In 7 of these questions item nonresponse was very low in both surveys ($\leq 2.0\%$) and the difference less than 1.3%. One of the partner status questions generated item nonresponse that was 1.3% higher in the web survey (23.9 vs 22.6%) and a question about employee supervision was skipped by 3.3% more web respondents (10.3 vs 7.0%). Interestingly, this was one of the few occasions when two questions were presented on the same web page.

7.4 Discussion of findings

The key finding from the analysis undertaken here was a strong mode effect whereby the web survey consistently produced less item nonresponse than the pen-and-paper survey. This corroborates findings from previous surveys of a sensitive nature that computerisation reduces item nonresponse (Copas *et al.* 2002; Jobe *et al.* 1997; Johnson *et al.* 2001a; Tourangeau *et al.* 1997a) and that web surveys reduce item nonresponse in comparison to pen-and-paper surveys (Kwak & Radler 2002; McMahon *et al.* 2003; Stanton 1998). The level of item nonresponse was particularly low in the web survey, where 96% of respondents skipped less than 1% of questions and questions generated an average of 1.6% item nonresponse. It was somewhat higher for the pen-and-paper survey, where 85% of respondents skipped up to 10% of questions and questions generated an average of 6.7% item nonresponse. On the whole, however, the findings lend support to the assertion that once respondents have made the decision to participate, they aim to supply the information requested (Couper *et al.* 2004), preferring to provide too much rather than too little information (Sudman & Bradburn 1973). This is also consistent with anecdotal evidence from the qualitative interviews, described in Chapter 8, where respondents suggested that they clicked through the web survey answering every question and selecting responses that most closely resembled their behaviour if an exact fit was not available.

The Internet and HIV surveys contained complex routing patterns which have been found to increase item nonresponse (Messmer & Seymour 1982). This is likely to have played a part in the reduced item nonresponse for the web survey where such routing was automatically programmed. Indeed, it seems clear that break down in the routing for one of the pen-and-paper survey questions (Figure 7.12 on p81) resulted in high levels of item nonresponse. It may also be the case that the higher levels of item nonresponse introduced by the burden of responding to the complex questionnaire masked any association between certain respondent characteristics and item nonresponse in the pen-and-paper survey. In general, however, the findings indicate that respondent variables were not strong predictors of item nonresponse for

these samples and that where they had an influence, it tended to hold true for both survey modes.

Age was not associated with item nonresponse in either of the surveys used here although older respondents were more likely to skip both general and sexual questions in previous self-completion surveys (Copas *et al.* 1997; Ferber 1966; Gruskin *et al.* 2001; Kupek 1999; Wiederman 1993). This difference may be partially attributable to the relatively young Internet and gym samples.

A lower level of educational attainment has been consistently implicated in item nonresponse in self-completion surveys (Ferber 1966; Gruskin *et al.* 2001), including those of a sexual nature (Kupek 1999; Michael *et al.* 1988; Wiederman 1993). In Natsal 1990, item nonresponse was also associated with lower social class (Kupek 1999) and in a US national survey of sexual behaviour, it was associated with lower income (Wiederman 1993). Neither education nor social class were implicated in either of the Internet and HIV surveys, but the high levels of educational attainment and social class among these respondents may obscure such an effect. Over two thirds of Internet respondents and three quarters of gym respondents were from social classes I or II and 60% of Internet respondents and 40% of gym respondents held a degree or equivalent, which may be compared to data from government sources showing that just one quarter of Londoners of working age held a degree or equivalent at the time these Internet and HIV surveys were conducted (Office for National Statistics Labour Force Survey, Spring 2003, <http://www.statistics.gov.uk>).

As found elsewhere (Gruskin *et al.* 2001; Kupek 1998), respondents of white ethnic origin were less likely to skip questions than respondents of other ethnic origins in both surveys. The finding that place of birth was also associated with item nonresponse indicates the potential for ethnicity to be confounded with issues such as language difficulty that have been found to impact on item nonresponse (Copas *et al.* 1997; Kupek 1998).

A complicated relationship was found between the number of questions presented and item nonresponse which is likely to be due to the influence of opposing forces. Although the presentation of more questions provides a greater opportunity to skip, those who are presented with more questions may be more engaged in the survey because the questions are more relevant to them. These opposing forces may contribute to the findings in the group level comparison of item nonresponse and number of questions presented. Thus, analysis at the group level found that men who were HIV positive were both more likely to be presented with more questions and to skip questions in both surveys, as were men who were not working and web survey men who had had UAI. In the same way, web survey men who completed the survey in the fastest times were likely to be presented with fewer questions and were less likely to skip them, as were men born in the UK.

However, gay men and gym respondents who spent more time on the Internet were less likely to skip questions but they were also likely to be presented with more questions which is indicative of engagement in the topic of the HIV and Internet study. In the same way that a high interest group provided somewhat more answers than a low interest group (Martin 1994) and perception of survey value is associated with improved response (Rogelberg *et al.* 2001), men who self-identify as gay and spend more time on the Internet may be more inclined to provide a complete response to these surveys.

At the individual level, the multivariate analysis showed that the number of questions was an independent predictor of item nonresponse in the both surveys but it revealed that more questions were associated with higher item nonresponse in the web survey and lower item nonresponse in the pen-and-paper survey. It is possible that this discrepancy is generated by a factor associated with the two response environments, such as the ability to look ahead in the pen-and-paper survey, or by a factor related to the composition of the two samples, such as different motivations to complete the survey. The likely explanation is that skipping questions in the web survey did not reduce the number of questions with which respondents were presented. All routing questions were compulsory and resulted in presentation of a subsequent set of

relevant questions. Thus, more questions gave respondents more opportunity to skip questions. In contrast to this, respondents in the pen-and-paper survey are likely to have skipped pages or sections of questions, thereby reducing the total number of questions with they were presented.

Although a lack of sexual experience has been associated with item nonresponse in surveys of sexual behaviour (Copas *et al.* 1997; Wiederman 1993), all the men in the Internet and HIV surveys had been sexually active in the past year and this is unlikely to be an explanation for any of the item nonresponse found here. The findings from the web survey tend to indicate, indeed, that *greater* sexual experience may be associated with increased amounts of item nonresponse. The design of the Internet and HIV surveys was such that increased sexual risk behaviour led to an increased number of questions being presented and an increased number of questions was also associated with higher item nonresponse in the web survey. This is consistent with findings that the likelihood of recalling events decreases as the number of similar or related events increases (Eisenhower *et al.* 1991). In this way, respondents with greater numbers of sexual partners are likely to be unable to provide accurate responses when asked about them which may result in item nonresponse if such questions become too burdensome.

The regression analysis indicated that being HIV positive was a predictor of item nonresponse in the both surveys and hours spent on the Internet was also implicated in item nonresponse for the pen-and-paper survey. In both surveys, however, the combination of predictors accounted for little of the variation in item nonresponse, suggesting that there may be other more important mediators of item nonresponse.

Although HIV status had limited impact on item nonresponse, the consistency of the response behaviour of HIV positive men across modes merits further discussion. The salience of sexual behaviours may influence the increased item nonresponse of these men. They may also be reluctant to respond to particular questions. The anecdotal evidence quoted in Chapter 5 suggests that HIV positive men may have been frustrated by some of the question content which may have driven them to skip

questions in both web and pen-and-paper surveys. HIV positive men may also be less motivated to complete the survey than those who are at risk of HIV transmission, as suggested by Catania *et al.* (1993). As the involvement of HIV positive men is crucial to research on sexual risk behaviour, further exploration of their response to such surveys is justified.

Other findings show that different indicators of respondent motivation have varying effects on item nonresponse. Although altruistic motivation was not found to be associated with item nonresponse, there was trend for those who completed the survey in the earlier days to skip fewer questions than those who responded later on, as was similarly found in a postal survey of sexual behaviour (Biggar & Melbye 1992). Speedy survey completion may be linked to satisficing but was associated with lower item nonresponse in the present survey. The lack of correlation between question number and item nonresponse also indicated that respondents did not appear to tire and skip more questions as they proceeded through the survey.

A clear mode effect was identified in the comparison of response to questions in the web and pen-and-paper surveys. Thus, the magnitude of item nonresponse was significantly higher for questions in the pen-and-paper survey than those in the web survey. The correlation between item nonresponse for the matched questions in the web and pen-and-paper surveys indicates that the question is an important cause of item nonresponse. When question content is controlled, the analysis shows that questions that were likely to be skipped in the web survey were also likely to be skipped in the pen-and-paper survey. Focusing on sets of related questions revealed that certain topics generated somewhat higher levels of item nonresponse in both surveys. The findings indicated, however, that the highest item nonresponse resulted from problematic question format which increased item nonresponse within mode, where a question was more burdensome than other questions in the survey, and across modes for questions of equivalent format.

Although sociodemographic questions do not tend to result in high levels of item nonresponse (Gilbert *et al.* 1992; Kalton 1983) and web survey volunteers have been

found to supply most of the sociodemographic information requested (Basi 1999), such questions were the most likely to be skipped in both web and pen-and-paper surveys. However, this set of questions included an open question on job description which appeared to produce high cognitive demands and generated the most item nonresponse in both surveys. Removal of the question reduced item nonresponse for the sets of sociodemographic questions in both modes considerably. Questions on sexual orientation and behaviour were the second most likely to be skipped by Internet and gym respondents. This set of questions included those where it appears that respondents may have left a blank instead of inserting a "0". Removal of these questions from the set of sexual questions also reduced item nonresponse to a great extent.

It is not perhaps surprising that men who volunteer for surveys of sexual behaviour are willing to provide information on their sexual behaviour and the findings indicate that the burden of responding to particular questions is likely to be more important in generating item nonresponse than question content. This is consistent with studies showing that questions requiring more thought produced higher item nonresponse than the simple questions used in respondent classification (Ferber 1966) and that item nonresponse is associated with recall difficulties or complexity of format rather than question sensitivity (Kupek 1998; Wadsworth *et al.* 1993).

On balance, previous research indicates that computerisation has little or no benefit over self-administration in reporting sensitive behaviours (Moon 1998; Richman *et al.* 1999; Tourangeau *et al.* 2003). In other words, it finds little evidence for an interaction between survey mode and question content such that sensitive questions are disproportionately more likely to be completed in computerised questionnaires. The findings here tend to support this position. Thus, questions on UAI which are likely to be more sensitive for gay men (Acree *et al.* 1999) were not likely to produce greater levels of item nonresponse in the pen-and-paper survey over and above the general mode effect. Although questions about recreational drug use produced high levels of item nonresponse in the pen-and-paper survey compared to the web survey, this is likely to be attributable to a greater or lesser extent to the different question

formats, for which an experimental manipulation might control. There did not appear to be any interpretable relationship between question sensitivity as defined by the legal status of the drug and item nonresponse.

The comparatively high item nonresponse in the gym survey for questions about depression, suicidal ideation and loneliness may be an exception to the general lack of mode effect on response to sensitive questions in the Internet and HIV surveys. This finding may be the result of a sampling effect and it would be interesting to see if it were replicated where respondents are randomly allocated to mode.

Although these findings support the conclusion of the literature review that there is a multiplicity of potential influences on item nonresponse, they clearly indicate the overwhelming importance of the survey mode in item nonresponse overall.

7.4.1 Implications for researchers

Use of the Internet mode with automated skip and branch patterns is likely to reduce item nonresponse to a considerable extent. The findings suggest that good question design has an equally important role in reducing item nonresponse and that the use of the computerised mode does not appear to reduce item nonresponse to questions of a potentially sensitive nature over and above item nonresponse for other questions.

8 Participating in online and offline qualitative interviews

Synopsis

Men who participated in face-to-face or online qualitative interviews for the Internet and HIV study were re-interviewed about this earlier experience. Online synchronous interviewing was associated with fast turnaround but was less well suited to the emotional and intellectual demands of the in-depth interview, given the demands of translating thoughts into typing in real time.

8.1 Introduction

The preceding chapters have focussed on the quantitative arm of the Internet and HIV study. The study also used in-depth qualitative interviews which, as described in Chapter 2, were conducted both online and offline. Having examined the impact of the Internet mode on item nonresponse in Chapter 7, the present chapter turns to the impact of the Internet mode on qualitative interviewing. It seeks to explore this issue by asking respondents about their experiences of being interviewed online and offline. It addresses the question:

“What is the modal difference in interview experience when gay and bisexual men are interviewed about sexual behaviour face-to-face or by online synchronous chat?”

It does not aim to generate a theory of online interviewing, rather it seeks to critically evaluate the issues that interviewers might wish to consider in deciding whether or not to undertake online qualitative interviewing. It takes as the starting point a belief that,

“certain types of interviewing are better suited to particular kinds of situations, and researchers must be aware of the implications, pitfalls, and problems of the types of interviews they choose” (Fontana & Frey 2000: 667).

The chapter begins with a discussion of the use of interviewing in social research in order to contextualise online interviewing and ensure that recommendations are rooted in the literature on social research methodology. It goes on to describe the different forms of Internet-mediated communication and to examine how the Internet has been used for qualitative interviews. This is followed by an exploration of other contexts that may impact an online interview, including use of the medium, issues of identity and self-presentation, and those of rapport and trust. The section concludes with an examination of issues relating to the sexual content of interview.

8.1.1 Interviews in social research

The interview is one of the key tools available to the social researcher. From quantitative survey interviews to qualitative in depth interviews, much has been written about use of the method and the methodologies behind it (eg Fontana & Frey 2000; Holstein & Gubrium 1997; Kvale 1996; Silverman 2001). As the emphasis of this chapter is on the respondent's perspective, it also is important to locate the interview in the wider social context, given that this may shape perceptions of it even before participation (Catania 1997). We cannot ignore the broader context of interviews in general and how the "interview society" (Atkinson & Silverman 1997) may influence respondents through the prevalence of interviews in our everyday lives. From Parkinson to Paxman, the media are full of images of interviews that are likely to impact on respondent expectations.

One of the ways of conceptualising interviews in social research is to divide them into those that are quantitative and those that are qualitative. The aim of the quantitative survey interview is to expose each individual to the same question experience and to record answers in the same way, so that different answers can be interpreted as differences between respondents and not attributed to the process of producing the answer (Fowler & Mangione 1990). As we have seen in the preceding chapters, a whole range of factors may impact upon the interview interaction but the survey interview aims to control them in order to standardize the experience across individuals. By contrast, qualitative interviews can be seen in the context of Holstein and Gubrium's (1997) model of "Active Interviewing", whereby interviews are the

interactional product of talk between interview participants, within which meaning is socially constituted. Instead of aiming to control the factors that may impact upon the interview interaction, the qualitative interview sees such factors as inextricably implicated in what occurs within the interview.

On a more practical level, Kemp and Ellen (1984) propose that interviews may be classified according to how they vary on the following six continua:

- i) predetermination of questions from formal to spur of the moment;
- ii) degree of directiveness from neutral to specific;
- iii) openness of questions from closed to open;
- iv) length of interview from brief to in-depth;
- v) degree of prior arrangement;
- vi) interview setting.

Thus, questions in a survey interview will be presented formally and neutrally and the majority of them will be closed; whereas qualitative interviews will tend to contain very open questions, some or all of which will be spur of the moment and specifically directed to the individual. The nature of these questions determines the type of data that are gathered, with quantitative researchers aiming for valid, reliable data that are generalisable and qualitative researchers seeking data that are rich and in-depth in order to uncover social meaning. Both quantitative and qualitative interviews will vary in length, degree of prior arrangement and setting.

Although the analysis undertaken here is concerned with one-to-one interviews, a further continuum that may be added is the number of interviewees taking part. With respect to group interviews, a qualitative technique that is often used is that of the focus group, whereby a moderator facilitates a group discussion and aims to develop a dynamic within which all participants are able to contribute to the discussion (Stewart & Shamdasani 1990).

From a quantitative perspective, Catania (1997) has drawn up a model for investigating the respondent-interviewer relationship in sexual surveys. It

acknowledges the dynamic, bi-directional nature of the interaction and draws attention to the broader context within which the interview is situated – the researcher's goals, the interview topic, the question order, the question wording, the respondent burden, respondent recruitment and respondent motivation for participation are all expected to influence the interviewee's response. In order to minimise the potentially negative impact of the dynamic interaction, a great deal of effort is put into training interviewers to appear comfortable with the topic and accepting of respondents' answers.

This last point alludes to another difference between quantitative and qualitative approaches involving respondent-interviewer interactions. Undertaking a survey interview is usually delegated to an interview professional whose job is restricted to data collection. In this way, interviewers are trained to handle questions in a structured, homogenous manner in order to eliminate their influence on the interviewee's response. Although training is equally important for qualitative interviewers, these interviews are often undertaken by researchers who are likely to be involved in the entire research process and who are in a position to tailor the interview according to the interviewee's responses.

8.1.2 Internet-mediated communication

Having briefly described the use of interviews in social research, I now turn to use of the Internet as a medium of communication before going on to explore similarities and differences between online and offline interviews. It is not my intention to make the case that online communication should be viewed in the context of offline communication but to use comparison with the familiar as a device to explore a comparatively new and unfamiliar medium. This approach recognises that it may not be appropriate to examine mediated communication in the context of face-to-face communication (Dourish *et al.* 1996; Gaiser 1997) or online interviews in the context of face-to-face interviews (Davis *et al.* 2004) and is consistent with the idea that,

“The virtual and the real may provide different things. Why make them compete?” (Turkle 1997: 236).

Within the virtual world itself, there are many different forms of communicating, which may also provide “different things” that do not compete. Looking specifically at online communication involving interpersonal interaction, one of the ways in which these different forms of interaction may be classified is through making a distinction between synchronous and asynchronous communication. This refers to the difference between interacting in “real time”, where dialogue is more or less instantly communicated between parties, and interacting through media whereby dialogue is sent to the receiver or posted in an Internet forum and may not be read until later. The former takes place in virtual venues which take forms such as commercial chat rooms, MUDs or MOOs (MUD Object Oriented systems), or employs some other form of messaging or conferencing software. Such real time online communication is also referred to as “chat” (Mann & Stewart 2000). The latter commonly takes place via email, with other forms including newsgroups, which are collections of messages on a particular topic that are posted on the Internet, and mailing lists, which are group discussions of particular topics which commonly use the system listserv (Kennedy 2000).

Although synchronous and asynchronous forms of online communication are associated with different media, the degree of synchronisation that these media generate is also dependent on how they are used. Email, for example, can be used in a similar way to chat with quick returns transmitted between participants within seconds (Bampton & Cowton 2002) and the synchronisation of chat may break down if the participants, for example, are engaged in other activities at the same time.

Studies on media selection, however, have tended to focus on *which* medium was used rather than *how* it was used (Utz 2000). Consideration of the latter indicates that the type of interaction that takes place is both culturally and technologically determined (Hine 2000). Within chat rooms, for example, the technology provides the facility for private messages and a culture has developed in some chat rooms whereby nothing is said in the main chat channel and all the interaction occurs in private chats (Waskul & Douglass 1997). Furthermore, an estimation that it takes four to five times longer to exchange messages in computer mediated communication than face-to-face (Walther 1996) has created a system that is conducive to

simultaneous interactions (Waskul & Douglass 1997), with experienced participants typing briefly and quickly to sustain the flow of the interaction, while multi-tasking (Walther 1996). It is also suggested that those who are familiar with interacting in MUDs, MOOs or chat rooms may find it difficult to participate in serious discussion in these environments due to the superficial and playful culture that has developed in them (Gaiser 1997). These explorations of how communication media are used generally have important implications for their use in research interviews.

There are also expectations about which communication channels are appropriate to particular circumstances. Thus in online dating, it has been shown that giving someone your email address, phone number and home address are associated with increasing levels of trust (Whitty & Gavin 2001). In another investigation of relationship formation on the Internet, various forms of communication were categorised in terms of control (McKenna *et al.* 2002). Email allowed the greatest control over whether and when to respond without the pressure of conversational demands, chat meant giving up some of that control for the greater richness of real-time interaction and face-to-face entailed giving up all control for a greater physical and emotional closeness. A comparison of communication by telephone and email found that although the two media overlap and compete, respondents found the phone superior for needs such as advice-giving or expressing affection, whereas email was better for keeping in touch with distant people and those you do not see in person (Dimmick *et al.* 2000).

Although different forms of communication have certain inherent characteristics that shape their use, the perception of media properties has been found to vary by user. Barkhi (2002) found that communication mode interacts with cognitive style, which is the individual's method of processing information and their personal preference for receiving it. Furthermore, the context within which the communication takes place is a key variable in determining the interaction. As Lea and Spears (1992) have argued,

“identifying the social context in which any given CMC takes place is essential for predicting the outcomes of CMC” (Lea & Spears 1992: 337).

Both the characteristics of the interviewee and the interview situation itself, may then impact upon the nature of the interaction in an online interview.

8.1.3 Online interviews

8.1.3.1 What are online interviews?

In the same way that online communication can be both synchronous and asynchronous, the same is true of online interviews. Synchronous interviews can take place in any online synchronous modes - using chat rooms, MUDs, MOOs, messaging or conferencing software – and asynchronous interviews are generally conducted via email. In both modes interviews may be conducted with a group or one-to-one, with any number of people potentially involved in an online chat and any number included in an email discussion, either through directly copying them in to the correspondence or through distributing summaries of the discussion to participants.

The Internet and HIV study adopted synchronous online one-to-one interviews. Respondents met the interviewer in a pre-selected gaydar or gay.com chat room that was accessible to any member of gaydar or gay.com, then clicked into a private one-to-one chat which could only be seen by the respondent and interviewer.

Synchronous online group interviews occur when the interviewer engages a number of respondents in simultaneous online discussion. Asynchronous online one-to-one interviews occur when the interviewer enters into an email correspondence with individual respondents. If such email correspondence involves discussion of the thoughts and views of a number of respondents, this is described as an asynchronous online group interview.

The following begins with an overview of the advantages and disadvantages of online interviewing which apply to synchronous and asynchronous, individual and group interviews. It is followed by an exploration of features that are characteristic of synchronous and asynchronous online interviews, drawing on examples from both group and individual interviews, and paying particular attention to issues pertinent to

online synchronous one-to-one interviews, as the mode of interview under investigation here.

8.1.3.2 What are the pros and cons of online interviews?

One of the advantages of online interviewing that is often quoted is cost (eg Chase & Alvarez 2000; Clapper & Massey 1996). Because online interviews are produced as text there is no need to transcribe them, which can be both an expensive and time-consuming procedure. As many researchers have pointed out, where time and cost are important, a researcher may consider the instant transcript of online interviews to be attractive (eg Chen & Hinton 1999; Selwyn & Robson 1998).

A further financial benefit derives from the fact that online interviewing negates the need to budget for transport costs. If the interviewer travels to meet the respondents, these transport costs need to be covered and if respondents travel to meet the interviewer, additional costs of interview facilities and refreshments may also be incurred. The value for money reputation that online interviewing has thus achieved has undoubtedly been one of the inducements for the use of online methods which the commercial sector was quick to recognise. Market research organisations were among the first to adapt qualitative methods so that they could be conducted online (Chase & Alvarez 2000) and the following draws on a number of studies that were undertaken in this sector.

Although the importance of cost savings cannot be underestimated, there are additional benefits to interviewing participants online, without coming together in a physical space. Researchers have found that online interviews may facilitate or even determine participation where access to respondents is difficult due to issues such as participant mobility (Bowker & Tuffin 2002; Campbell *et al.* 2001) or geographic dispersion (Christensen 1999). Online synchronous interviews have thus been used to bring together participants in China and Australia (Stewart *et al.* 1998) and to circumvent the commitments at home experienced by both researchers and respondents who were pregnant and / or had small children (Madge & O'Connor 2002; O'Connor & Madge 2001).

Another possible motive for adopting online interviews surrounds the issue of whether respondents feel less inhibited discussing sensitive issues in a more anonymous virtual environment. Computer mediated communication has been found to increase self-disclosure (eg Bargh *et al.* 2002; Joinson 2001) and in survey research, respondents are more likely to disclose sensitive information in self-completion modes rather than when asked directly by an interviewer (Tourangeau & Smith 1996; Wadsworth *et al.* 1993). It is suggested that the anonymising effects of the Internet may have a similar effect in qualitative interviews (Bampton & Cowton 2002) and the anonymity of the online medium was found to be preferable for some respondents participating in a health-related focus group (Campbell *et al.* 2001). In an asynchronous online focus group, only seven of the 263 postings were anonymous but the controversial nature of these postings implied that there were circumstances where respondents valued the opportunity to be anonymous (Kenny 2005).

When researching life online, the use of online research methods is intuitively appealing and may serve to give the researcher more credibility in the eyes of the respondents (Taylor 1999). Furthermore,

“interviewing online [means] participants [are] integrally engaged with the environment where the topic of the interviews [is] located” (Bowker & Tuffin 2002: 332).

This justification was used for conducting online interviews in a study of Internet addiction among college students, although it was also the case that some respondents were resistant to taking time away from the Internet for face-to-face interviews (Chou 2001). It was also one of the reasons why the Internet and HIV interviews were conducted online so that respondents could discuss their experience of “online dating” through an online medium.

There are undoubtedly disadvantages to using online interview methods. The cost of equipment may be an issue (Chen & Hinton 1999) although the increasing ubiquity of the Internet means that both interviewers and respondents are more likely to have access to appropriate technology. Studies that have adopted the method point out

how it is important that both interviewer and interviewee need to be competent in the use of the technology (eg Bampton & Cowton 2002). Even those who are competent with the technology, however, may be thwarted if it breaks down. Over the course of her online synchronous interviews, Clark (2002) twice experienced the situation where respondents were disconnected by their ISPs without her knowing until they were re-connected and able to explain.

Another disadvantage is the “narrow bandwidth” of Internet communication, referring to the lack of visual cues, and the effect that this has on the interaction (eg Bampton & Cowton 2002). As Chen and Hinton (1999) have argued, it is common practice for researchers to critique the lack of non-verbal cues in online interviews and yet little information is provided on how to analyse such non-verbal cues in a face-to-face interview. The present study, however, sets out to explore how the inclusion or exclusion of non-verbal cues plays a part in the original creation of the interview dialogue rather than examining how they may aid subsequent analysis of the substantive meaning of the text.

Use of the Internet in qualitative interviews is in its infancy. Text-based interviews have never been seen as a replacement for face-to-face methods (Sweet 1999), but it will be interesting to see how things develop as the technology improves and video-enhanced interviews with sound and vision become more feasible. Text-based online interviews may, however, continue to have a place in the researcher’s tool kit, in as much as they may,

“provide a means of engaging in research where it would not otherwise be possible” (Chen & Hinton 1999: section 9.2).

What such interviews actually provide, however, has not been subject to empirical investigation in the past (Chen & Hinton 1999; Curasi 2001) and the review of the literature undertaken here indicates that this continues to be the case. Although use of these methods has been discussed, no systematic analysis has been presented and it is this gap in our knowledge that the following chapter aims to address.

8.1.3.3 Features of synchronous and asynchronous interviews

In addition to the overall advantages and disadvantages of online interviewing outlined above, there are further considerations that must be deliberated in choosing between synchronous and asynchronous interviews. Co-ordination of interviewer and interviewee schedules is one such issue. Unless the interviewer enters the virtual space with the intention of interviewing whoever is available at that time, participants in synchronous online interviews must agree a time and place to meet, in order to conduct the interview. With asynchronous interviews, there is no need for interviewer and interviewee to be simultaneously available.

This lack of synchronisation means that the respondent may make take time to compose a considered response that can be further dealt with at the interviewer's convenience (Bampton & Cowton 2002). At first impression, then, it may seem that use of email is an efficient mode of data collection, with each party able to participate as and when it is convenient. Bowker and Tuffin (2003), however, concluded that their face-to-face interviews which took about two hours "*offered more controlled outcomes*" than their electronic interviews which took weeks or months to complete. Asynchronous interviews may thus suffer from the problem of striking the right balance between allowing the respondent time to reply and maintaining the momentum of the interaction, without leading to "interview fatigue" (Bampton & Cowton 2002). Such a balance was apparently not struck over the course of Christensen's (1999) asynchronous interviews with the Inuit, which became tedious for both the interviewer and interviewee. According to social exchange theory, where response becomes burdensome in this way, it reduces the respondents' likelihood of continuing to participate (Dillman 1978).

The immediacy of the synchronous interview, on the other hand, may help to develop rapport through demonstration of the interviewer's attention and commitment, with the additional benefit of speed of turnaround (Chen & Hinton 1999). It becomes important, however, to keep up the pace of the interview and the pressure is on the interviewer to avoid hold-ups such as those caused by misunderstanding (Sweet 1999).

The lack of interviewer presence in the asynchronous interview is believed to have a differential impact upon the individual respondents according to their levels of motivation (Curasi 2001). In a comparison of the data from face-to-face interviews, Curasi (2001) found that the computer-mediated interviews generated both the strongest and the weakest transcripts, with some respondents offering short, precise responses and others discussing issues in detail. She concluded that the absence of interviewer probing meant that responses depended on respondents' ability to address the question and their attitude to doing so. Moloney *et al.* (2003) also found wide differences in the level of interaction between respondents who participated in the four discussion boards that they set up as virtual focus groups. Even in the synchronous mode, however, it is still more difficult to inject the probes and follow up questions than in the face-to-face interview (Chase & Alvarez 2000).

As suggested above, the data captured in synchronous and asynchronous interviews are very different. Use of asynchronous communication means that respondents can re-read and reflect on earlier responses (Kenny 2005). It lends itself to lengthier, more discursive texts that are said to be more thorough and considered (Adriaenssens & Cadman 1999) and, although immediate probing is not possible, researchers are given time to consider what avenues they wish to explore (Curasi 2001). The lengthy texts that such discussion may generate however, can be resource intensive due to the time needed for analysis (Adriaenssens & Cadman 1999).

Synchronous interviews, on the other hand, are thought to be more similar to face-to-face in that they produce greater spontaneity of interaction but they also produce much shorter transcripts than in the face-to-face mode (Chen & Hinton 1999). It has been said that synchronous interviews require much longer to gather the same amount of material as in a face-to-face interview (Biggs 2000), although this overlooks the qualitative difference in data from online synchronous interviews. Compared to the face-to-face context, online synchronous focus groups were found to generate less than half as many words per comment, with a greater proportion of comments consisting of brief statements of agreement and less likelihood of respondents elaborating on the reasons for their opinions (Schneider *et al.* 2002).

Davis *et al.* (2004) found the dialogue generated in online synchronous interviews could be ambiguous, but straying from the limiting conventions of online chat to seek clarification could disrupt the interview. One of the participants in another study that used online interviews also felt that it took too long to go into detail, which limited the discussion (Clark 2002). Madge and O'Connor (2005) also comment how some of their comments appeared banal and their questions too direct, with the brevity of much of the interaction in synchronous online interviews making them distinctly different from transcribed conversations, such that,

"the interview is less like a conversation and more like a series of questions 'fired off' by the interviewer" (Chen & Hinton 1999: section 12.9).

Indeed, it seems that there is little published on the use of synchronous online techniques (Madge & O'Connor 2002). Qualitative researchers may have been slow to take up the technique in part because of scepticism about whether the mode is suitable for producing the type of rich data that they seek to generate. The above studies allude to this lack of richness, which has been more extensively explored in the context of how computer-mediated communication affects interpersonal interaction through its reduction of social cues and narrowing of the bandwidth of communication (eg Daft & Lengel 1984; Kiesler & Sproull 1986; Walther 1992).

Successful online interviews depend on researchers' abilities to apply their interview techniques to the online context (Strickland *et al.* 2003) and they may also feel that they lack the skills required for this. Typing and reading in real time can be particularly demanding in online synchronous interviews (Chen & Hinton 1999) and it is important that both interviewer and interviewee have confidence and a certain level of competence in their keyboard skills (Campbell *et al.* 2001; Madge & O'Connor 2002). Even respondents who had participated in asynchronous interviews, however, would have preferred face-to-face because writing emails required more effort (Curasi 2001).

Although writing emails may be more demanding than talking, the majority of Internet users are now familiar with this form of communication, with government

figures showing that 86% of adult Internet users in the UK use email (Office for National Statistics Omnibus Survey, May 2005, <http://www.statistics.gov.uk>). The same cannot be said of Internet chatrooms, however, which just 21% of these adults had used over the same period. Lack of familiarity with chat may engender a lack of confidence for both interviewer and respondents that is likely to have contributed to its limited take up as an interview medium.

Even with expert users, however, pauses will inevitably occur in online synchronous communication and these carry an added poignancy when the interviewer does not know whether the respondent is typing, thinking or has declined to answer (Madge & O'Connor 2002). This requires a heightened degree of patience from the interviewer (Clark 2002). From the interviewee's perspective, such silences in a one-to-one interview may be interpreted as inattentiveness (Mann & Stewart 2000), and might therefore be wise to avoid. This is contrary to face-to-face interviews where silence is recommended as a useful prompt, with 60% of respondents beginning to speak again if the interviewer does not respond immediately (Matarazzo *et al.* 1965 cited in Hargie *et al.* 1994). In a group interview, the uncertainty about who should respond may be reduced by adopting a round-robin approach (Campbell *et al.* 2001).

The pauses that occur in synchronous online communication make it suited to multi-tasking (Walther 1996; Waskul & Douglass 1997), with the result that the interviewer does not know whether he or she has the respondent's full attention. In their work with new mothers, for example, O'Connor and Madge (2001) did not know whether their interviewees were being distracted by their children. There may, however, be advantages for the researcher who is also able to multi-task. As Chase and Alvarez (2000) have pointed out, it means that the facilitator in a group interview can engage in private communication with the researcher.

Another advantage of holding group interviews online is the lack of dominant voice that the medium engenders (Sweet 1999). Although speed of typing can play an important part (Madge & O'Connor 2005), respondents in online synchronous interviews generally contribute at a more uniform and lower level than in face-to-

face focus groups, making these fora better for the discussion of simple ideas where the diversity of respondents' opinions is sought (Schneider *et al.* 2002). Such increased respondent participation was found to lead to higher levels of satisfaction and openness (Tse 1999). Moderated email groups (MEGs) are a form of asynchronous online group interviews that were developed in market research (Adriaenssens & Cadman 1999; Eke & Comley 1999). The process consists of phases whereby following individual dissemination of questions to respondents, the group moderator produces a summary document that is sent also to them for comment. The method is thought to be helpful in shaping the data, with the lack of a dominant voice encouraging a range of topic-specific opinions and, importantly in a market research, the client can have an input into the direction of the discussion (Adriaennssens & Cadman 1999).

Having described some of the issues that the interviewer should expect to consider in adopting online interviews, with particular emphasis on the features of online synchronous interviews, the following considers the impact of particular contexts on the online interview, including respondent use of the medium, online identity and self-presentation and online rapport and trust.

8.1.4 The online interview in context

8.1.4.1 Respondent use of the online medium

One of the keys to a successful synchronous online interview is likely to be familiarity with the medium. Experience of using the technology has also been associated with confidence in the ability to express oneself in an online chat (Chase & Alvarez 2000) and respondents who spend longer in chat rooms have also reported a higher level of openness in their online interactions (Whitty 2002). Both these consequences of familiarity with chat would seem to be conducive to a more effective online synchronous interview which is also borne out by respondent perceptions. Clark (2002) received generally positive feedback on the experience of participating in an online interview from the older adults who were recruited into the study on the basis of their online experience whereas a small group of mature

students with limited computer familiarity felt “*rushed to respond*” (Chen & Hinton 1999).

Communication apprehension, or the level of anxiety associated with real or anticipated communication, is expected to be higher in novel situations because of uncertainty about how to behave. Clapper and Massey (1996) suggest that the levelling effects of computer-mediated communication may ease the factors which cause such apprehension. It might also be argued that uncertainty about how to communicate using online chat may increase anxiety. According to Control Theory, a perception of control within ambiguous situations that are potentially harmful is said to reduce stress (Catania 1997). A person who is familiar with the technology may be more likely to feel some degree of control during the interview and therefore experience less stress, whereas someone who is unfamiliar may experience higher levels of stress. Whatever previous experience of online communication they may have, however, it is important to consider that neither party in an online interview comes empty-handed to the virtual world but brings experience and expectations of familiar social spaces (Smith 1998).

People also have preferences for using different communication modes which may be based on familiarity, and this extends to the interview situation. Some respondents in a study of alcohol, drug and tobacco use preferred the computer-mediated format and some preferred the face-to-face interview (Skinner & Allen 1983). Given a choice between participating in a synchronous or asynchronous online discussion, only one quarter of respondents who were readers of a computing magazine had no preference (Eke & Comley 1999). 59% said that they would prefer to take part in an email discussion over one week compared to 14% who said that they would prefer an online chat for one hour (Eke & Comley 1999). As a possible explanation, the authors suggest that email participation can be adapted around respondents’ schedules, and the respondents questioned here were more familiar with email than chat, which may have negative connotations for them. Although respondents who were given a clear explanation of why interviews were being undertaken online found the method acceptable, they did not necessarily find it

preferable (Chen & Hinton 1999) and it may be argued that the researcher should consider respondents' personal preferences in selecting an interview mode (Taylor 1999).

8.1.4.2 Online identity and self-presentation

Given the anonymity of the situation and the apparent ease with which one may take on another persona, the use of the Internet in social research is open to the criticism that we cannot rely on respondents to present themselves truthfully. Giese (1998) argues, however, that although there is nothing stopping people from presenting multiple personalities, in practice it is very difficult to maintain more than one. This raises the question of why someone who has volunteered to participate in an online interview would go to such trouble to deliberately try and subvert the process. Undoubtedly there are occasions when people do seek to deceive others on the Internet - many of the participants in a covert ethnographic study of youthful, sexually orientated chat rooms were not believed to be real people but adopted personae (Lamb 1998).

Whitty and Gavin (2001) argue that it is not the method of communication that determines the self-presentation but the intent of the individual user. They found that some women lie when meeting potential partners in chat rooms for reasons of safety and that telling "white lies" gave some men the anonymity they needed to be more truthful and intimate than in a face-to-face situation (Whitty & Gavin 2001). A follow up study found that younger people were more likely to lie than older people, as were people who spent less time in chat rooms (Whitty 2002).

Utz (2005) found that different types of deception were evaluated in different ways according to how and with whom the deception took place, with lying about appearance to a potential partner considered as more severe than playful gender switching or identity concealment in an online discussion group because of privacy concerns. The study again suggests that self-presentation is manipulated for a purpose. Thus, an investigation of people who regularly participate in MUDs and MOOs, where one of the purposes is to act out roles, found no support for a

hypothesis that these people would be more likely to manipulate their image in a web survey (Lozar Manfreda *et al.* 2002b).

As Taylor (1999) has pointed out, there are many things in an offline interview that we must also take at the interviewee's word. In other words, it is not use of the Internet *per se* that prompts people to adopt personae, but should they wish to do so, the Internet can facilitate such behaviour. Thus, when Glaser *et al.* (2002) covertly entered chat rooms sponsored by white supremacists and deceived participants that they were sympathetic to their views, it was with the intention of researching hate crime. Such cases illustrate the need to justify the intention of online interviewers and interviewees in adopting an alternative persona, rather than assuming that the Internet engenders such behaviour. Furthermore, it is argued that the anonymity that is created by hiding certain details about oneself,

“does not necessarily signify deception ... but instead can signify a desire to reveal a deeper level of truth about the self” (Whitty & Gavin 2001: 360).

In presenting themselves over the Internet, however, individuals may not intend to deceive but may modify their self-presentation according to the online environment within which they are acting. The concept of presenting oneself differently according to the situation in which one finds oneself is not a new one. Goffman's (1959) seminal work on *“The Presentation of the Self in Everyday Life”* describes how individuals moderate their self-presentation according to the situation within which they are acting. Davis *et al.* (2004) refer to such self-presentation in the online interview as a form of textual performance. In the context of interviews of sexual behaviour, Catania (1997) argues that many motivational and emotional demands shape the “sexual personae” that respondents present to the interviewer. In the online context, Giese (1998) argues that the self presented via computer mediated communication is an extension of the “real” self into a different social context that can be likened to the presentation of different aspects of the self in different situations. Turkle (1997), however, makes a distinction between the selves that one presents online and offline, arguing that,

“cyberspace provides opportunities to play out aspects of oneself that are not total strangers but that may be inhibited in life” (Turkle 1997: 205).

Because Turkle was interested in the relationship between online and offline life, she chose to interview her respondents face-to-face. An acknowledgement that there is no one true self, however, may lead to a conclusion that research taking place entirely in an online setting need not concern itself with the offline identity of respondents (Hine 2000) and it is argued that,

“to privilege one over the other on the basis of an authenticity argument (person vs persona) is problematic” (Taylor 1999: 443).

As Turkle has suggested, there are features of the Internet that set online self-presentation apart from face-to-face communication. Cues that may be unconsciously “given off” in real life, including nonverbal communication and physical characteristics, are not available online (Kendall 1998). In real life, visible shyness and attractiveness are thought to dominate liking, but the lack of such “gating features” in the virtual world is thought to enable the socially anxious and lonely to feel more able to project the “real me” (McKenna *et al.* 2002).

The lack of visual cues in online communication means that “linguistic style” gains importance (eg Jacobson 1999). Using paralinguistic cues, or acronyms, exclamation marks and emoticons, adds an element of the emotional sub-text that is missing in pure text. It has also been shown that use of paralanguage is associated with increased use of synchronous online communication and with friendship formation (Utz 2000).

In contrast to the unconsciously “given off” visual cues of real life, then, it seems that in the virtual world people can make more deliberate and conscious stylistic choices online to present themselves in a particular way (Giese 1998). Waskul and Douglass (1997) conclude that the Internet is an environment of performers performing to an audience of performers where everyone is aware that everyone is performing. They give the example of the screen name - stating that the selection of

this name, whether neutral or otherwise, associates the individual with a label. On the other hand, the apparent lack of attention to spelling and grammar is said to be indicative of spontaneity in both synchronous (Chen & Hinton 1999; Madge & O'Connor 2002) and asynchronous communication (Bampton & Cowton 2002), with the virtual synchronous interview seen as a bridge between the oral / written divide (Madge & O'Connor 2002).

8.1.4.3 Online rapport and trust

As Catania (1997) has pointed out, a variety of factors influence the interaction between respondent and interviewer and these may change over the course of the interview. One of the key elements that is said to facilitate successful interaction is the building of rapport and trust between interviewer and interviewee (eg Fontana & Frey 2000; Miller & Glasner 1997), which allows respondents to speak freely. In a face-to-face interview, visual cues play an important part in encouraging this. In conversation, it has been found that most participants look into each other's eyes for at least one third of the time which is said to maintain mutual attention (Argyle & Trower 1979) and suggested that,

“the good listener ... keeps up a constant flow of mainly non-verbal attention signals” (Argyle & Trower 1979: 53).

As described earlier, however, such nonverbal cues are not available in online interviews and the question arises of how the interviewer manages to be “the good listener” and effectively build rapport and trust.

In the absence of visual cues, the use of paralanguage has been associated with the desire to identify with others. Utz (2000) found that sceptical users of MUDs both refrained from using paralanguage and from making online friends, indicating that use of paralanguage is associated with the intention of building rapport. This association was also found in chat room study where members of cliques were shown to adopt the same linguistic devices (Paolillo 1999).

The effect of rapport and trust may be seen in the framework of Self Disclosure Theory which posits that people disclose more honestly and in greater detail to people with whom they feel emotionally comfortable (Catania 1997). On this basis, the respondent's perception of the interviewer is of key importance and the following studies have sought to examine how perception of the other may be shaped in online communication. The Internet is said to encourage projection which results from the lack of visual cues or information about the other and "*the silence into which one types*" (Turkle 1997: 207). Although it is argued that participants in an online community are "astigmatic", with reference to Goffman's use of stigma to denote the markings of social status (Smith 1998), this has not been shown to result in an absence of perception about the person with whom one is communicating. Indeed it may engender a highly positive perception and has been associated with an idealisation of others (Bargh *et al.* 2002; Walther 1996). In an experiment where male and female respondents met the same person of the opposite sex online and face-to-face but believed it to be a different person each time, they liked them much more when they interacted online and felt they knew them better (McKenna *et al.* 2002).

Another effect of online communication is to foster a presumptive identity of the social norm. White respondents, for example, tend to assume that they are communicating with other white people when using the Internet (Kendall 1998). Similarly, online participants have been found to use exemplars in imagining others, by seeing them in terms of the people they know offline (Jacobson 1999). When disabled respondents were interviewed about their use of the Internet, they reported that it enabled them to interact free from the prejudice that they generally faced when others were aware of their disability (Bowker & Tuffin 2002). Such behaviour can be seen in the context of earlier theories of how people deal with strangers in a face-to-face context which suggest that people carry stereotypes to make up for gaps in their knowledge of strangers (Argyle & Trower 1979). The Internet is also structured in such a way as to make it easy to find others who share one's interests (McKenna *et al.* 2002) and to whom it would seem natural to apply such stereotypes.

The above findings show how online communication is likely to shape perception of the interviewer which may impact upon rapport in ways that this study aims to investigate. It also means that both respondent and interviewer can choose the location from which they participate which may help them to feel more relaxed. Although men who were interviewed about their experience of prostate cancer seemed more relaxed at home (Yong 2001), there may be circumstances where the respondent feels uncomfortable about receiving the interviewer into their home or where the interviewer feels uncomfortable about being in the respondent's home (Madge & O'Connor 2002). It has been suggested that female respondents may feel safer participating online because they are in a familiar and comfortable environment (Mann & Stewart 2000).

In the online context, Curasi (2001) suggests that respondents will be more likely to disclose if the researcher also divulges information. Madge and O'Connor (2002) decided to take this approach for their synchronous interviews with women who were pregnant and the mothers of small children. They posted their photographs and biographies on a website and established a personal relationship with their respondents prior to the interviews, which included sharing their concerns about childcare. They attributed the ease with which their rapport was built to the fact that they were new parents like their respondents and were therefore seen as "insiders". Other researchers felt it was important to meet respondents (Bowker & Tuffin 2003) or interview them by person or telephone (Moloney *et al.* 2003) before beginning the online interview process. Such approaches to interviewing are very much in keeping with the feminist position which aims to break down the power hierarchy between interviewer and interviewee through disclosure of personal information by the interviewer (Oakley 1981).

A break down of the power dynamic is also believed to stem from the levelling effect of the Internet which takes some of the control away from the interviewer (O'Connor & Madge 2001) in the same way that it is thought to engender an "astigmatic" perception of online participants (Smith 1998). Although the researcher continues to set the agenda (Madge & O'Connor 2005), the respondent may feel more empowered

to ask questions in an “astigmatic” interview. This was evidenced in the interviews undertaken by Ward (1999) where respondents felt free to question her about her sociodemographic profile.

8.1.5 Interviews with sexual content

It is particularly important that the interviewer should be able to engender rapport and trust in interviews of sexual behaviour. Catania (1997) argues that the lack of reciprocation in an interview situation makes it an unusual form of social exchange and that interviews of sexual behaviour form a particularly atypical social exchange.

“Typically, when two people meet for the first time, they don’t, within fifteen minutes, go directly to talking about the most detailed aspects of their sexual relationships” (Catania 1997: 427).

This raises the question as to whether certain characteristics of the interviewer, such as gender, will have an impact on such exchanges. Although both male and female interviewers in a face-to-face survey of sexual behaviour felt that respondents of the opposite sex would have problems replying to them (Giami *et al.* 1997), most of the heterosexual men who were interviewed by men for the Natsal 1990 pilot said that the gender of the interviewer made no difference and all of those who were interviewed by a woman said they preferred it, as they were concerned they may brag in front of other men (Spencer *et al.* 1988). The three gay men who participated were quite happy to have been interviewed by women (Spencer *et al.* 1988) and another study found no effect of interviewer gender on gay men’s responses to sensitive questions (Darrow *et al.* 1986). On the other hand, Catania *et al.* (1996) found that while most women preferred a female interviewer and men were evenly divided, same gender interviewers tended to elicit higher levels of reporting on many sensitive sexual activity questions, which was attributed to greater likelihood of disclosure.

Other characteristics of the interviewer have also been investigated. Catania (1997) has suggested that the physical attraction of the interviewer may bias respondents’ answers in surveys of sexual behaviour. One of the gay men in the Natsal 1990 pilot

thought that it was better for the interviewer's sexual orientation to be undisclosed and none of the respondents believed that the age of the interviewer was a problem - by far the most important issue was the interviewer's manner (Spencer *et al.* 1988). Indeed, it is possible that the interviewer's manner may be more important than their sociodemographic profile, given the apparent irrelevance of age and the lack of consistent evidence on the impact of gender.

It is also important that respondents are assured of the confidential nature of the research into sexual behaviour (Catania 1997). When an African American interviewer conducted interviews among African Americans of the same age and gender, respondents were uncomfortable because they felt they may be disclosing to someone who knew their friends and family (Catania *et al.* 1992 cited in Catania 1997). The complete anonymity of the online interview of sexual behaviour may increase the feeling of anonymity among minority groups.

On the other hand, the lack of visual cues raises an ethical question in relation to the respondent's experience of the interview. An experienced interviewer is likely to pick up on any distress a respondent may feel in discussing sensitive topics. As Hargie *et al.* (1994) point out,

"Interactors are constantly adapting and modifying their subsequent behaviour in the light of how they think their messages are being received. So the interviewer ... who detects discomfort in his client's behaviour, may quickly change the subject or develop his line of questioning towards a less controversial aspect in order to ease any tension that might arise" (Hargie *et al.* 1994: 40-41).

Catania (1997) also raises the issue of how the remainder of an interview may be overshadowed by the emotional associations of raising such a trauma and yet detection of any discomfort may go unnoticed without the visual cues of the face-to-face interaction. The interviewer's ethical obligation to provide emotional support to the respondent may thereby be compromised.

The general disadvantages of the "narrow bandwidth" of the Internet discussed previously, may be particularly pertinent to interviews of sexual behaviour, where

the understanding of terminology may not be shared, as illustrated in Chapter 7, *7.1.3.1 Inadequate understanding or comprehension*. The importance of confidence in the use of language cannot be underestimated in text based interviews, particularly when talking about sex where the use of particular words may be seen as pejorative.

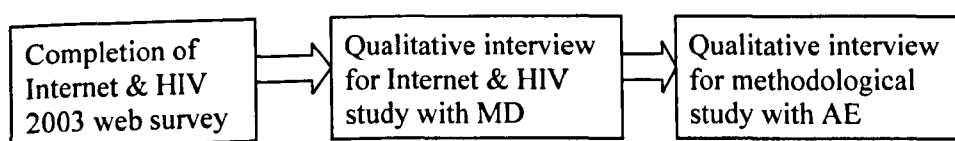
The above review has sought to demonstrate how the online medium provides a very different way of communicating. In addition to this, the interview is a specific form of communication and sexual behaviour an atypical topic of discussion. The purpose of the following analysis therefore is to examine the extent to which respondents were able to tell the story of their sexual history in an online synchronous interview.

8.2 Methods

This section describes the methods used in the methodological qualitative interviews conducted by myself, AE. Following this introduction to the methodological interviews, the section continues with a description of the interview procedure and goes on to describe the piloting and topic guide development. An account of the ethical protocol is then given, before the section concludes with an explanation of how the interviews were analysed.

The aim of these interviews was to explore the respondents' experiences of participating in the online and face-to-face qualitative interviews that were previously conducted by MD, as part of the Internet and HIV study. The interviews that I conducted will be referred to as the "methodological interviews" and those conducted by MD will be referred to as the "Internet and HIV interviews".

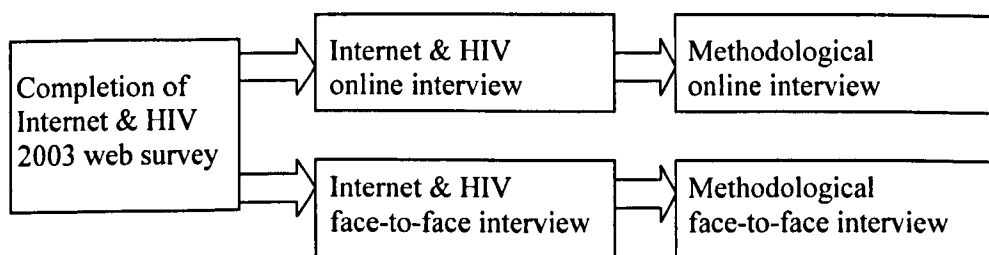
The following flow chart illustrates how respondents proceeded through the research process. Only men who took part in the 2003 web survey were included in the methodological interviews because MD did not use chat to interview any of the men who took part in pen-and-paper surveys. It should be noted that after participating in each element of the research, respondents were offered the opportunity to volunteer for the next stage:



The relative paucity of empirical literature on online interviewing meant it was appropriate for me to take an exploratory qualitative approach in the methodological interviews because respondents could be approached with an open and flexible agenda. I am sympathetic to Holstein and Gubrium's (1997) conceptualisation of active interviewing, whereby meaning "*is actively and communicatively assembled in the interview encounter*" (Holstein & Gubrium 1997: 114). This position suggests the adoption of highly unstructured interviews with the aim of jointly constructing an

understanding of the interview topic through a process of discussion to which both parties bring their individual knowledge bases. In practical terms, however, the success of such unstructured interviews is likely to depend to a great extent on interviewer confidence and experience and was not considered suitable for the methodological interviews undertaken here by a novice interviewer. A semi-structured approach to interviewing was therefore adopted, whereby the methodological interview was structured around a topic guide but question wording, sequence and topic emphasis were tailored to each individual interview (Robson 1993). The topic guide was developed from a review of the literature on online and offline communication and qualitative interview methodology but also allowed themes raised by respondents to be developed within the interview.

As described in the previous section, it is proposed that when researching life online, using online research methods may be appropriate because respondents will be engaged in the environment where the interview topic is located (Bowker & Tuffin 2002; Chou 2001; Taylor 1999). This standpoint was adopted here in that respondents whose Internet and HIV interview had been conducted face-to-face were interviewed face-to-face in their methodological interview and those whose Internet and HIV interview had been online were interviewed online in the follow-up. The flow chart can therefore be refined, as follows:



The use of this approach had the additional benefit that it gave me experience of using both methods which I hoped would enable me to make a more informed analysis of respondent experience of online and offline interviews because I had been *actively* involved in a similar experience.

The limitation of using online interviewing to explore online interviewing and face-to-face interviewing to explore face-to-face interviewing should be flagged. Although adopting a survey of surveys in his own research, Goyder (1986) acknowledged that,

“employing an instrument to measure its own performance is immediately contradictory” (Goyder 1986: 28).

Taking Holstein and Gubrium’s position, however, acknowledges that all data are the product of the interview situation, such that what is revealed must always be contextualised and cannot claim to be the “truth”.

8.2.1 Interview procedure

The methodological interviews were conducted from July to September 2003. The original recruitment of these men into the qualitative arm of the Internet and HIV study is described in Chapter 2. It should be noted that MD did not randomly assign men to interview mode but assigned them according to purposive sampling criteria. Following their in-depth qualitative interview with MD, men were asked whether they would be willing to participate in a second, methodological interview to explore their experiences of taking part in research. MD acted as the gatekeeper, asking respondents whether they would be interested in a second interview unless this was inappropriate due to the sensitive nature of the original interview. Although access to all respondents might have given a better understanding of issues relating to discussion of sensitive data, it was not ethical to ask respondents to re-visit their Internet and HIV interviews if they were in any way emotionally charged.

MD invited participants that he interviewed face-to-face to attend a second face-to-face methodological interview and participants that he interviewed online to attend a second online methodological interview. He explained that interviews would be with me and passed a brief summary of the content of the interview to face-to-face interviewees and emailed it to online participants (Appendix 11 – Information about the project for interviewees). MD emailed contact details of men who were

interested in the second interview to me and, upon receipt of their details, I sent potential respondents an email, attaching the main information sheet and informed consent form (Appendix 12 – Consent sheets). The men were asked to return the completed consent form to me if they were happy with the content of the interview and the arrangements and, once consent had been obtained, a mutually convenient interview time was arranged.

The face-to-face methodological interviews were held in my office at City University. Participants had previously been interviewed on university premises for their Internet and HIV interview and it was furthermore considered that my safety would not be compromised if interviews took place at the university. The face-to-face methodological interviews were recorded using a tape-recorder and transcribed by myself which, time permitting, is said to be a helpful part of the data familiarisation process (Bloor *et al.* 2001).

The online methodological interviews took place mainly in a gay.com chat room with the permission of the UK director of gay.com. A link to the chat room was emailed to respondents when the interview time was arranged. Respondents were told the screen name that I would be using and were given a screen name that they could use. Accordingly, the respondent and I could recognise each other in the chat room and click on each other to go into a private chat that other persons present in the chat room could not see. At the end of the interview, the interview text was copied and pasted into a Microsoft Word document – resulting in an instant transcript. Only one of the online respondents was unable to open the link to the gay.com chat room. He was therefore interviewed in a private chat from a gaydar chatroom, for which the director's permission had been obtained.

Kvale (1996) proposes that researchers should interview as many respondents as is necessary to find out what they want to know. He reports that the number of interviews generally falls between five and twenty-five and is dependent on time and resources available and the law of diminishing returns. As the methodological interviews undertaken here were just one part of the overall methodological study, it

was felt that the time devoted to them should be limited. Within the limits of what Kvale deems acceptable, a pragmatic interview target of ten men was set, including five who had been interviewed face-to-face and five who had been interviewed online. It was also recognised that undertaking these interviews would be an excellent learning opportunity as part of my research training in online methods and considered that five online and five offline interviews would be adequate for this.

The introduction to this chapter has considered the interaction between interviewer and respondent and the influence of the Internet on communication. Both face-to-face and online interviewees came to their second interview with the experience of having already participated in an interview with MD and, presumably, with expectations shaped by this earlier experience. My expectations were also influenced by earlier reading of anonymised transcripts from MD's interviews and, as fieldwork progressed, by my previous interviews. My interviews did not contain direct questions about the content of the respondents' interviews with MD but I was somewhat apprehensive before the interviews began, which was perhaps related to the sexual nature of the interviews with MD and my inexperience as a woman interviewing gay men in this context. I found, however, that the respondents and I developed a comfortable, professional relationship over the course of the interview. The initial relationship was established during the exchange of emails over informed consent and interview arrangements. When I met respondents in either the chat room or at the main entrance to my building, there was time for some informal exchanges before starting the interview and throughout the interview itself, I aimed to present myself as approachable but neutral, asking questions and maintaining the focus on the respondents' thoughts and experiences, in a similar way to MD.

In addition to verbatim data collected in the interviews, I wrote memos recording thoughts and feelings about each interview that had just taken place.

8.2.2 Interview piloting and topic guide development

The piloting process for the methodological interviews had three main purposes. The first was to try out the technology that I would be using in both face-to-face and

online interviews, the second was to test and develop the topic guide and the third was for me to gain experience of qualitative interviewing in both face-to-face and online environments. I completed three pilot interviews face-to-face and four online. All face-to-face interviews were tape recorded, two of the online interviews were completed in a gay.com chat room, one was completed using MSN messenger and one used a gaydar chat room. This meant that the audio cassette recorder and technology for both gaydar and gay.com had been properly tested.

In relation to testing and developing the topic guide, the key problem was that it was not possible to pilot the main topic of the interviews. The main topic was the experience of participating in the Internet and HIV interview, but as none of the pilot respondents had actually done so, they were unable to comment on this. In order to get around this, discussion in the pilot interviews focused either on job interviews that participants had taken part in or participants role played the situation that they had taken part in the Internet and HIV study. This meant the live methodological interviews were approached with a level of openness to the respondents' experiences that may not have been possible had the interviews been piloted on members of the research population. The semi-structured interviewing approach incorporated the possibility of modifying the topic guide in the light of what transpired in the actual interviews.

I semi-purposively selected participants for the online and face-to-face pilot interviews from my friends, colleagues and acquaintances, according to their keyboard skills and familiarity with online chat and with gaydar. Having undertaken these seven pilot interviews, saturation had been reached in terms of what I felt I could learn from the piloting process. Although the discussions that took place in the pilot interviews were helpful in finalising the details of the topic guide, the main benefit was in the use of the technology and in getting a feel for how the interview process is shaped by the interview mode. It became apparent that the length of time required to cover the topic guide was very much longer for the online interviews and that this would need to be borne in mind when undertaking the actual interviews.

As a novice interviewer, the pilot process had the additional benefit of giving me a better idea of what to expect in both online and face-to-face interviews, which enhanced my confidence in approaching the live methodological interviews. Feedback from face-to-face respondents suggested that it would be helpful to slow down and be more reflective during the interview, giving both parties more time to absorb and build on the topics of discussion.

Figure 8.1 is an extract of the topic guide from the methodological interviews containing items that formed the core of the analysis undertaken here. The full topic guide (Appendix 13) was modified in the light of discussion with colleagues and as a result of the piloting process described above. It was originally developed with reference to themes that are acknowledged in the literature to be important to successful qualitative interviews, such as rapport and establishing trust (eg Fontana & Frey 2000; Miller & Glasner 1997), and which overlap with themes derived from research into the limitations and possibilities of the communication medium (eg Bordia 1997; Lea & Spears 1992; Walther 1996) and from research into disclosure of “sensitive data” (eg Catania 1997; 1999; Tourangeau & Smith 1996).

Figure 8.1: Extract from topic guide

1 General use of Internet and communication technology	
1. When & how started with Internet?	4. Advantages / Disadvantages & Likes / Dislikes about email, chat, texting, phoning
2. Internet nowadays?	5. Issues of security with email, chat, texting, phoning
3. Use of chat	
2 Interview with MD	
1. Motivation for participation	7. Ability to express self – frustrations?
2. Travel arrangements - convenience of arrangements - first impressions?	8. Rapport?
3. Anonymity and confidentiality?	9. Formal / informal?
4. Expectations, concerns, apprehensions?	10. How long did it take?
5. Pace, time to express self?	11. Positive aspects of interview?
6. Relaxed and at ease?	12. Negative aspects of interview?
	13. Suggestions?
	14. Overall impression?

Topic guides for the online and offline methodological interviews were almost identical – the only difference was the content of the second item in the section labelled “Interview with MD” in Figure 8.1, which asked about the interview arrangements. The interview began with questions relating to respondent demographics, in order to ensure that this information was captured before running out of interview time. The first topic for discussion was participants’ use of various forms of communication technology, including the Internet. This topic had the dual purpose of generating a general, non-threatening, warm-up discussion and of framing the respondents’ online research experiences. The next sections of the topic guide addressed the respondents’ experience of the Internet and HIV interview with MD, the Internet and HIV online web survey and participation in other research.

8.2.3 Ethics for methodological interviews

According to City University guidelines (http://www.city.ac.uk/acdev/academic_framework/re/ec_guidance.html), research involving minority groups requires ethical approval and this was, accordingly, sought and obtained. The topic guide for the methodological interviews was designed to enable respondents to discuss their experience of participating in the Internet and HIV interviews without asking specific questions about the content of the interview. However, given the highly personal nature of their previous interview with MD, respondents were not offered a second interview with me unless it was clear that re-visiting this experience would cause them no distress. MD therefore acted as gatekeeper and when he was satisfied that this was the case, respondents were given a clear option of volunteering to continue with a second interview.

Before participating in the methodological interview, respondents were sent a full information and consent sheet which they were asked to read and sign. The principle of informed consent was central to both this project and the wider MRC funded Internet and HIV project. At the beginning of the methodological interview, participants were briefed on the purpose of the research and the voluntary nature of their participation was re-iterated in order to re-assure them that they were free to terminate the interview at any time. They were also asked if they were happy for the

interview to be used in the research project and for anonymised quotes to be included in reports or publications. They were de-briefed at the end of the interview and permission was again sought for use of the interview in the research project. Contact information on the Terrence Higgins Trust Direct Helpline and website and the London Lesbian and Gay Switchboard was held in case respondents needed any specialist advice or counselling.

The potentially sensitive nature of the methodological interviews meant that it was particularly important to consider issues of respondent anonymity and confidentiality. The online methodological interviews took place in a private chat room to which no-one else could gain access, thus ensuring confidentiality. When taking part in an interview in gay.com, participants were given a user name that was different from the one they would normally use in order to maintain anonymity. The interviews were saved into a MicroSoft Word document and all personal details were removed as soon as possible.

The face-to-face methodological interviews took place in my private office at City University, with only the respondent and myself present. These interviews were tape-recorded and as soon as possible after the interview, I transcribed the recording and all personal details were removed at this stage to protect respondents' identities.

Undertaking online research raises the issue of potential deception by the interviewer. In this case, however, I did not undertake any covert research while I was online and did not communicate with anyone other than the interviewees. In the event that anyone else approached me in the chat room, I did not respond and have not used any such communication in this research. A related issue is that people using gaydar and gay.com chat rooms are generally assumed to be gay men. In order that respondents should be informed of the facts, my identity as a female was made explicit to them and it was explained that the research involved using gaydar and gay.com chat rooms solely for the purpose of undertaking interviews in a secure environment.

8.2.4 Analysis of methodological interviews

The analytical approach was based on “frameworking”, a method for analysing qualitative data described by Ritchie *et al.* (2003) in the book “*Qualitative Research Practice*”. This rigorous method was developed on the basis of the extensive experience of researchers at the National Centre for Social Research, London. It has the intuitive appeal of aiming to condense what respondents say in their interviews into a format that facilitates inspection of data across themes and within individuals. At the same time the analyst aims to maintain as much closeness to the original data as possible, by adopting respondent terminology as far as possible. The adaptation of framework used here is described below.

The initial stage of the process, as with any qualitative analysis, is familiarisation with the data. This began with transcription of the face-to-face methodological interviews as soon as possible after they had taken place and with reading through the online transcripts immediately after the interview. Some researchers consider that transcribing one’s own interviews is a helpful part of familiarisation with the data (Bloor *et al.* 2001). When all the interviews had been undertaken, I read through the transcripts, marking thoughts and possible themes. The approach recommended by Holliday (2002) was adopted, whereby,

“themes are partly emergent and partly influenced by questions or issues that the researcher brought to research” (Holliday 2002: 108).

An extensive index covering all the themes derived from reading through the transcripts was then drawn up, in accordance with frameworking. The index was collapsed into fewer and more manageable categories, as recommended by Ritchie *et al.* (2003).

At this stage, data may be coded manually or using computer assisted qualitative data analysis software. The latter was chosen because of its facility to manage qualitative data flexibly and effectively, enabling easy retrieval of pieces of text from material which tends to be voluminous and unstructured (Fielding & Lee 1998). The software

package NVivo was used because it is generally well regarded and has been extensively used (Crowley *et al.* 2002). NVivo was also used by MD in the main Internet and HIV study and familiarisation with it was therefore important in order to facilitate the possibility of using qualitative data from MD's interviews as part of this methodological research.

The analytical approach taken was to code each transcript fully and individually. During this process, the index was further refined. Where it became clear that data were not sufficient to support a theme, categories might be collapsed or where there appeared to be associations between themes, these might also be combined. Where themes seemed complex, they might be simplified into sub-categories. The index relevant to the analysis upon which this chapter is based is listed in Appendix 14. The next step was to place the data into the framework. An Excel spreadsheet was set up, with the themes that made up the refined index placed across the top and respondents listed down the left hand side, as illustrated in Figure 8.2.

Figure 8.2: Extract of framework used in analysis

	Q	F	S	T	U	V	W	X
Attributes	Disinhibition in chat	Interpretation of chat	Self expression in Internet & HIV interview	Nature of interaction in Internet & HIV interview				
1								
16								
17								
18								
19								
20								

Each of the blank cells in the above extract was then filled with respondent data relating to the theme heading. The aim was to fill each cell with a summary of the relevant data, keeping as closely as possible to the original data by condensing its meaning and using respondent terminology as far as possible. This was done by retrieving the relevant data using NVivo and referring back to the original transcripts from the methodological interviews where necessary. Use of NVivo generated a complete list of quotations for each respondent under each theme heading, which enables the analyst to get an overview of each theme while encapsulating the respondent's contribution to it. Reference was made to the original transcripts from the methodological interviews in order to ensure that the data from each respondent was not taken out of context and misunderstood.

The next stage of the analysis was to pull together the key messages that were drawn from exploring the framework, bearing in mind the original objective of the methodological study, which was to inform other researchers of the advantages and disadvantages of using synchronous online chat for qualitative interviews. It was felt that a descriptive account was sufficient for this, following Wolcott's (2001) advice that,

"The trick is to discover essences and then to reveal those essences with sufficient context, yet not to become mired trying to include everything that might possibly be described" (Wolcott 2001: 44).

Ritchie *et al.* (2003) suggest adopting a further stage of analysis in order to reach a higher, more conceptual understanding. Such further analysis would tend to require a greater number of interviews, however, in order to provide sufficient data to discover meaning at the more abstract, conceptual level. As the analysis here was based on a limited number of interviews, it did not seek to draw out concepts but aims to present a report that,

"relies upon the researcher blending together personal experience with theories and data in order to make some contribution to our understanding of the social world" (Burgess 1984: 183).

In addition to the above use of frameworking, some further analysis of the interview data was undertaken using quantitative methods. As Wolcott advises,

“count and measure whatever warrants being counted and measured. Far better to offer too much measurement data than too little” (Wolcott 2001: 34).

Thus interview length and word count were analysed and a content analysis of respondent use of paralanguage was undertaken, whereby occurrence of pre-defined categories of paralanguage were counted.

8.3 Findings

This section begins with a description of the sociodemographic profile of respondents who took part in the methodological interviews. This is followed by a description of the length of the interviews and the word count. The remaining parts draw on the framework analysis and include quotations that are lifted verbatim from the transcripts. Quotations from the online methodological interviews may therefore contain spelling mistakes. Data are presented that explore respondents' perspectives on their Internet and HIV interview with MD and that examine respondents' general perspectives on personal privacy as an issue that may impact upon online and face-to-face data collection. Following this, I discuss rapport from my own perspective, drawing mainly on my experience of arranging and undertaking the methodological interviews and the finally I consider some of the practical aspects of online and offline interviewing.

8.3.1 Respondent profile

Respondents were recruited from the sample of men who volunteered for an Internet and HIV interview with MD having completed the 2003 Internet and HIV web survey. During this phase of the project, MD interviewed a total of thirty-one men. Seventeen of these men were interviewed online and fourteen face-to-face. As previously described, MD acted as gatekeeper for the recruitment of respondents into the methodological interview. In order to recruit my target sample of five men from each mode, I approached seven men following their face-to-face Internet and HIV interview and ten men following their online Internet and HIV interview. This resulted in a final sample of five face-to-face respondents and six online respondents for the methodological interviews.

Table 8.1 (on the following page) is a summary of the profile of the face-to-face respondents that I interviewed. It follows the convention that is adopted throughout this chapter of naming face-to-face respondents as F2F1 to 5 (where F2F stands for face-to-face), with online respondents named OLC1 to 6 (where OLC stands for online chat). Face-to-face respondents ranged in age from 26 to 50 years old, with a mean age of 33 and median of 31. Three were working, one was not working and

one was a full-time student. All but one of them had at least three years of post-16 education. Those with at least three years of post-16 education were highly educated – one to at least undergraduate level, one to masters level, one was currently studying at masters level and one at doctoral level.

Table 8.1: Profile of respondents in methodological face-to-face interviews

Respondent	Age	Whether working	Years of post 16 education	HIV status	Days between interviews
F2F1	50	no	none	HIV+	6
F2F2	31	yes	more than 3	unknown	7
F2F3	26	yes	more than 3	HIV-	14
F2F4	27	student	more than 3	unknown	9
F2F5	31	yes	more than 3	unknown	19

One respondent disclosed his HIV status as positive, one disclosed it as negative and the remaining men did not disclose their HIV status. The number of days between their Internet and HIV interview and the methodological interview ranged from 6 to 19, with a mean of 11. Further data collected that is not included in the table showed that their homes were spread across London.

Table 8.2: Profile of respondents in methodological online interviews

Respondent	Age	Whether working	Years of post 16 education	HIV status	Days between interviews
OLC1	33	yes	more than 3	unknown	0
OLC2	29	yes	more than 3	unknown	1
OLC3	44	no	more than 3	unknown	16
OLC4	33	yes	none	unknown	10
OLC5	33	yes	up to 3	unknown	4
OLC6	34	student	up to 3 (?)	unknown	13

Table 8.2 summarises the profile of the online respondents that I interviewed. Online respondents ranged in age from 29 to 44 years old, with a mean age of 34 and median of 33, which is similar to the respondents who participated in an online methodological interview. Four were working, one was not working and one was a full-time student. Three of them had at least three years of post-sixteen education, one had up to three years post-16 education, one was currently undertaking an undergraduate degree and one had no post-16 education. The overall level of education was somewhat lower than for face-to-face respondents – with undergraduate degree being the highest level attained. None of the respondents disclosed their HIV status. The number of days between the two interviews ranged from 0, where the second interview took place on the same day as the first, to 16, with a mean of 7. The online respondents also lived across London.

The eleven men who I interviewed were recruited from the thirty-one men that MD interviewed during this phase of the project. The subsample of eleven men who I interviewed were somewhat younger than the full sample of thirty-one men interviewed by MD. The age of my respondents ranged from 26 to 50, with a mean of 34 whereas the age of MD's respondents ranged from 26 to 63 with a mean of 40. In terms of work status and education, my subsample was very similar to MD's full sample. 64% of my respondents were working compared to 71% of MD's respondents; 18% were not working compared to 23% of MD's respondents; and 18% were students compared to 6% of MD's respondents. 50% of my respondents had had more than three years of post-16 education, compared to 52% of MD's respondents.

The profile of the 561 London men who completed the 2003 web survey was also examined to see how typical the above eleven men were of the sample of London men who were given the opportunity to volunteer for an Internet and HIV interview. The age of the full sample of survey respondents ranged from 18 to 75, with a mean of 34 and a median of 32. 80% of them were working, 10% were not working and 10% were students. 64% had at least 3 years of post-16 education and the remaining 36% had less than 3 years or were still studying. Given the very small size of the

sample of men who took part in the methodological interviews, their characteristics show that they were fairly typical of the London men who responded to the survey in terms of age, work status and education.

8.3.2 Methodological interview duration and word count

The online methodological interviews took longer to conduct than the face-to-face interviews (see Table 8.3). Online interviews took from 78 to 105 minutes to complete, whereas face-to-face took from around 45 to 80 minutes to complete. These times represent the sum total of the interaction between myself and the respondents in the online interviews, whereas the face-to-face time does not include discussion that took place prior to and following the actual interview. There was probably little difference, therefore, in the overall time that I spent with online and face-to-face respondents.

Table 8.3: Methodological interview duration and word count

Respondent	Number of words	Interview length	Respondent	Number of words	Interview length
F2F1	11,687	80	OLC1	2,440	85
F2F2	8,747	55	OLC2	2,276	94
F2F3	9,274	45	OLC3	2,395	78
F2F4	8,774	55	OLC4	2,254	80
F2F5	14,709	80	OLC5	1,887	96
			OLC6	1,944	105
Mean	10,638	63	Mean	2,199	90
s.d.	2,578	16	s.d.	231	10

In designing this investigation of qualitative online and offline interviews, much thought was given to whether it would be possible to compare the quality of the data

that was derived from the online and offline Internet and HIV interviews conducted by MD. The definition of data quality in the context of the in-depth qualitative interview is complex and continues to be debated among qualitative researchers. In their recently published report “*Quality in Qualitative Evaluation: A framework for assessing research evidence*”, Spencer *et al.* (2003) took up the debate and their considered solution was to focus their assessment framework on research output, providing an extensive list of quality indicators for this purpose. The framework proposed by Spencer and her colleagues circumvents the issue of how to assess the quality of data collected and highlights the complexity of attempting to do so. In the light of this, the following word count does not claim to address the issue of interview data quality. Its purpose is to give the reader an understanding of one of the differences between online and offline data.

Table 8.3 lists the word count generated by MicroSoft Word for the words spoken or typed by both interviewer and interviewee over the course of each methodological interview. It shows how the average face-to-face interview generated 10,638 words which is almost 5 times as many as the online interviews, with an average of 2,199 words.

Although the online interviews took somewhat longer to complete, they produced considerably fewer words than the face-to-face interviews. There seems to be a relationship between length of interview and number of words generated in the face-to-face interviews, with the two longest interviews generating the most dialogue. We would expect this finding, given that the aim of the interview is to encourage respondents to talk and not to remain silent. By comparison, the two longest online interviews generated the least number of words. The reasons behind this different pattern are explored below in 8.3.5 *Rapport from the interviewer's perspective*.

The standard deviation figures for both interview length and number of words show that there was more variation in both number of words generated and interview length for the face-to-face interviews, whereas the online medium seems to have had the effect of homogenising both these factors.

8.3.3 Internet and HIV interview experience

The following analysis draws on data that were analysed using framework, as described in the methods section. The data are not presented under the index of themes derived from the analysis which are listed in Appendix 14. Rather, this write up represents the final stage of analysis in that it draws together evidence from a number of themes and sources into key messages that are presented under the sub-headings which follow. By so doing, it aims to highlight the important findings while remaining faithful to the original data.

As an illustration of this process, the following analysis described under “*Freedom of expression*” draws mainly on the theme described as “self expression in the Internet & HIV interview” (item 4.1 of the index), which is supplemented by quantitative data on word count and interview length and by qualitative data from themes such as “disinhibition in chat” (item 3.9 of the index). Data coded under the theme “self expression in the Internet & HIV interview” are shown in Appendix 15, as further exposition of the process.

8.3.3.1 *Freedom of expression*

An examination of respondents’ thoughts on their ability to express themselves in the Internet and HIV interview, can be framed in the context of Table 8.3 which shows that the six online methodological interviews contained far fewer words on average than the five face-to-face interviews. Table 8.3 also suggests that the online medium had a homogenising effect on interview length and word count. Face-to-face interaction not only allowed respondents’ expression of their thoughts to be far more extensive, it may also have enabled them to express their personal tendencies to be more or less talkative.

According to some of the men that I interviewed, the online medium certainly encouraged disinhibition under particular circumstances. They talked about how they could say things to men in gaydar and gay.com that they could not say face-to-face and OLC2 surprised himself with his online promiscuity. Although the nature of this type of sexual interaction is very different from an online interview of sexual

behaviour, use of the online interview also tended to give respondents the impression that they could be more open. As they had not undertaken a face-to-face interview with MD, respondents could only surmise how they would have reacted in a similar interview that was conducted face-to-face or by telephone. They felt, however, that the anonymity of the online interaction and being in a familiar environment had enabled them to feel more comfortable talking about sex,

“Talking on-line with Mark was easy and I felt I could be very open to his questions in a way that I might have found embarrassing over the phone or face-to-face” (OLC2, 29, working)

Although it might be tempting to conclude that the online medium enabled respondents to feel more open, none of the face-to-face respondents expressed any discomfort about discussing their sexual activities with MD. F2F2 exemplifies this:

“I felt completely, erm, welcomed and I mean I’m, I’m a fairly relaxed and laid back person anyway, so I, I was there of my own free will and I don’t have any, erm, qualms about speaking about the subject that we were speaking about, so I was, felt pretty relaxed” (F2F2, 31, working)

He also suggested, however, that anonymity was an important aspect of the face-to-face interview which could be more or less taken for granted in a large city like London. Comparing his Internet and HIV interview to a telephone interview on sexual behaviour that he undertook in a small town, he thought that the anonymity of the telephone might be more important outside London.

As both online and offline interviewees felt comfortable during their Internet and HIV interviews, it may be that an experienced interviewer would be able to make all interview volunteers feel at ease. With respect to this, I should point out that all respondents, online and offline, had replied to the same invitation to take part in the qualitative interview at the end of the online questionnaire. It stated that, *“we would like to talk to some of you about your experiences with the Internet in a confidential*

60 minute interview. The interview is informal and covers some of the issues raised in the questionnaire, but is focused on discussing sex, HIV and the Internet from your point of view." The invitation did not specify whether the interview would be face-to-face or online. At the point of volunteering, therefore, all respondents were comfortable with the idea of being interviewed face-to-face. It would be interesting to explore whether an invitation to participate in an online interview of sexual behaviour would encourage a different sample of men to volunteer.

Returning to F2F2's lack of qualms about the Internet and HIV interview, it is interesting that he is not explicit about the topic of the interview, but refers instead to *"the subject that we were speaking about"*. Perhaps this was because I had not introduced the terminology but there was also an issue for some respondents about being able to express themselves more freely about being gay and having sex to a gay man. This corresponds to F2F5's view that he may have felt a little less comfortable talking to me about sex. F2F3 compared talking to a straight male psychologist to his experience of talking about sex to MD, saying,

"I mean, I don't know whether he's gay or not, I assumed he was. Erm, but, yeah, he'd suggested that he had a, you know, that he had a, kind of, bit more of a, kind of insight into that than I'd say, like a some, like, straight person might have" (F2F3, 26, working)

The above comments suggest that matching gender and sexual orientation of interviewer and interviewee may be important. Difference in age may also play a part. As the only respondent who was somewhat older than MD, F2F1 was also the only respondent to raise age difference as having a potentially negative impact on rapport in the Internet and HIV interview. F2F1's experience furthermore indicates that rapport development goes beyond these sociodemographic variables. He was *"into the harder end of life"* and said of MD,

"I've probably seen and done things that would make him run screaming in the opposite direction" (F2F1, 50, unemployed)

He did not feel that this inhibited his freedom of expression but that it made him say things for the “*shock value*”. Thus respondents made assumptions about MD based on his self-presentation which impacted upon how they expressed themselves in the interview. The feeling that the interviewer has an insight into one’s sexual behaviour may help the respondent to feel at ease in discussing this behaviour, but respondents do not base assumptions of this insight solely on gender and sexual orientation. An understanding of the complex nature of face-to-face rapport development cannot therefore be reduced to explorations of sociodemographic variation.

The absence of information about MD in the online interviews was generally not an issue or subject of curiosity for respondents. Only OLC3 said that he had asked about MD’s sexual orientation and would have liked to see him. OLC6 felt that he had little chance to “*suss out*” either MD or myself but, in keeping with the general feeling expressed by the face-to-face respondents, he felt that he would prefer to talk to a gay man face-to-face because of the common understanding that this would entail,

“probably - i would feel more 'comfortable' talking to a ma, and a gay man at that... especially as its a very different culture to 'straight' sexual practices and accepted behaviour” (OLC6, 34, student)

8.3.3.2 Nature of the interview interaction

The F2F respondents tended to enjoy the discursive style of their interview with MD and the opportunity that it allowed them to talk things through. The opening introductory section was considered to be important as an ice-breaker and respondents felt that both they and the interviewer engaged in the interview. Although F2F1 would have preferred a more structured approach to the interview, he felt that MD could probably extract what he wanted from his “*gabbling*”. The interviewees, then, did not seem in any doubt that the interview was aiming to achieve an in-depth discussion of their sexual behaviour.

Online respondents also had positive things to say about their Internet and HIV interviews, but there was more uncertainty among them about the nature of the interaction. It may be that the face-to-face respondents had a better understanding of what is expected in a qualitative interview. Four out of five of the men that I spoke to face-to-face had already participated in such interviews, whereas none of my online respondents had ever done so. It may also be that the face-to-face interaction allowed the interviewer to guide respondents in what the interview entailed.

The online format was perceived in terms that a social researcher might identify as a mixture of structured and unstructured format, which OLC2 sums up as a combination of formal survey questions and informal probes:

"I did think the questions were just cut and pasted from somewhere else because they were chunks of text that sounded a bit like a survey where they stop you in the street ... it was a kind of hybrid of formal questions "Thinking of the last time you had unprotected anal sex.." and informal ones "How did you get into that situation???" and all on an explicit and personal subject" (OLC2, 29, working)

Online synchronous interviewing seems to be viewed as something of a quantitative-qualitative hybrid, therefore, which some respondents may find confusing. Thus, OLC4 was surprised when MD tailored questions to his previous responses and asked me why this was so. OLC6, on the other hand, tried to provide in-depth responses and was perplexed because by the time he had completed his answer, MD had moved on to something else. Confusion over the nature of the interview was avoided where respondents adhered to a more structured or quantitative perception of it and did not see the questions as particularly probing. In such cases the perception was that it,

"was quite formal, but not so that it was off putting, well structured, stayed on track and didn't delve too deep" (OLC5, 33, working)

8.3.3.3 Verbalising behaviour

Online and offline respondents generally used chat for fairly light, brief and rapid “chit-chat”. This was not to say that they had never used it for more intense conversations and examples were given of in-depth, emotional discussions with friends who had ended relationships or who had been bereaved. Although online chat is not generally used in this way, the potential to use it for in-depth discussion is extremely important because MD raised issues in the Internet and HIV interview which respondents had often not vocalised before and with which they sometimes needed to grapple,

“like why would I really be scared of getting AIDS was, you know, one of the things we were talking about ... things where you never really felt it in such a, you might think it in your head but you never challenge yourself as much, so that made me think quite hard” (F2F3, 26, working)

Although the Internet and HIV interview could be quite demanding both emotionally and intellectually, face-to-face respondents generally enjoyed this rare opportunity to explore their sexual behaviour in a way that they found both stimulating and rewarding. Online respondents also enjoyed their interviews but the use of chat placed increased burden on those respondents who wanted to delve into their thoughts using this medium. In addition to the emotional and intellectual demands described above, they found it physically demanding to translate thoughts into writing in real time,

“trying to explain why I'd done something during sex with a guy wasn't something I'd thought about let alone tried to type out!” (OLC2, 29, working)

“i think a couple of times i felt a bit pressured' in the physical/mental demands of doing it - not the questions or the thinking - the act of having to write it in real time - its easier to talk and think rather than write and think” (OLC6, 34, student)

One outcome of the additional burdens of writing in real time was that spelling sometimes had to give, which made some respondents uncomfortable,

“sometime spelling goes to pot! By riting down your answers it makes you think more about what you are going to say.

spelling and writing in the above line for example <sigh>” (OLC4, 33, working)

Use of writing may heighten awareness of how one is expressing ones’ thoughts, but face-to-face respondents were also conscious that their thoughts and words were being recorded. In other words, both online and offline interactions with MD took place in the artificial environment of the “interview”, with the use of the tape recorder seen as emblematic of this artificiality in the face-to-face situation,

“he was pretending not to know things that we both knew that he knew that we were talking like that, because of the tape recorder.” (F2F1, 50, unemployed)

Despite their consciousness of the recording process, both online and offline respondents seemed to accept and understand it as an important part of the interview. They wanted their words to count and realised that this entailed making a recording of them. F2F1 talked about how MD would be able to extract what he needed from the interview transcript and when the technical problems occurred that are discussed below in 8.3.6 *Practicalities of methodological interview*, respondents in both online and offline interviews were anxious that their words had not been lost.

8.3.4 Respondent perspectives on personal privacy

8.3.4.1 Anonymity and confidentiality in the interview

Both online and offline respondents were reassured that what they had said in their Internet and HIV interviews would be held in confidence and they would remain anonymous. The only respondent with any concerns was OLC1, who displayed a detailed knowledge of issues surrounding Internet security and felt that the confidentiality statement for the interview was not worded strongly enough. He

asked me not to use his name in the chat room – but even he was satisfied that “*this ain't secure, but it's secure enough*” (OLC1, 33, working). He was more concerned that human error might result in breaches of confidentiality rather than the online medium.

On the whole respondents felt that there was nothing to worry about even if the interview interaction was not entirely secure. They felt that they had nothing to hide and, as OLC4 said, there were more interesting conversations going on in gay.com if anyone wanted to listen in. OLC6 appeared the least concerned about maintaining anonymity – he introduced himself by name when he entered the chat room, told me his email address while they were online and said that he would happily put his name to anything he had said during the interview.

8.3.4.2 Perception of general online privacy

In general terms, respondents' technical understanding and perceptions of Internet security were varied. Although they were fairly relaxed about privacy in relation to their general use of the Internet, therefore, this relaxation was not based on a technical assurance of Internet privacy. This general approach to online privacy is well illustrated by the following thoughts on the anonymity of the Internet and HIV web survey which all of them had completed prior to their Internet and HIV interview and about which none of them had any concerns. F2F3, who worked in computing, did not check whether the survey was under a secured connection, F2F2 completed the survey although he did not know whether it was possible to trace his response to his PC and F2F5 did so even though he assumed that his details could be taken because he was logged on to gaydar at the time. When F2F4 volunteered for the Internet and HIV interview, he said that there was a question in the back of his mind as to whether this would be connected to his survey response. Similarly, although F2F1 did not believe that his answers to the web survey could be associated with his gaydar profile, there was a “*mental thing of the two things together*” (F2F1, 50, unemployed). F2F1 provides further illustration of how perception of privacy may not be entirely based on entirely rational processes.

The main reason why respondents had few concerns about invasion of privacy was that they did not believe that their online interactions in general were of interest to anyone else,

"I guess they could trace it anyway, but they, who? I mean it's not like a conspiracy" (F2F4, 27, student)

There were certain things, however, that respondents were careful about disclosing in real life and about which they were also more guarded online. A couple of the men talked about how putting their pictures on gaydar had been an issue for them and some of the men were cautious about whether and how they revealed financial details online – limiting their transactions to certain trusted websites, for example, or not using email for financial transactions. Respondents said that they were likely to censor themselves online with regard to illegal activities, namely use and purchase of recreational drugs, but that such censorship included other forms of mediated communication such as phoning and texting. It seems that if there is any possibility that illegal activities can be traced back to individuals, they are less likely to associate themselves with such activities through mediated communication. Although three out of five of the face-to-face respondents used the example of online censorship of drug use, none of the online respondents disclosed anything about whether they used recreational drugs and it would be interesting to explore whether these two facts were related.

One of the features that made respondents wary of email was the ease with which it was possible to make a mistake and send private information to the wrong person. A second factor was that work email might be monitored by the employer. As a consequence, some respondents said they were especially careful about what they said in email, particularly when using their own or other people's work email addresses.

Use of online chat had the benefit over telephone conversations that other people could not overhear you. Thus, OLC4 liked to use it with friends and family when he was at work and F2F2 chatted with a friend about relationships,

“because his partner’s often around and he wants to be able to chat in privacy”
(F2F2, 31, working)

Online chat also allows others to see when you are online and encourages a more spontaneous level of interaction. This was something that some respondents liked about chat, although it was not something that all respondents appreciated. As a new user, F2F2 found it irritating that people would send him messages when he was trying to do something else. The respondents themselves had initiated the online interviews, however, such that they were not seen as an invasion of privacy. By contrast, respondents found that cold-calling and being approached in the street could be intrusive, indicating that approaching potential respondents in a chat room might also be unwelcome.

8.3.5 Rapport from the interviewer’s perspective

The following describes how I experienced rapport in my interviews. As described above, each person brings their own life experiences to the interview and this is a reflexive account that aims to give some insight into the process from one interviewer’s perspective. As a novice interviewer, my approach to the interview interaction was to mirror the respondent’s approach but to try and keep the tone fairly light, using humour if appropriate and making use of paralanguage to aid this during the online interviews.

8.3.5.1 Paralanguage in the methodological online interviews

The three main uses of online paralanguage by both interviewer and respondent were that of the emoticon to express winking and smiling [;-) :) :-) and :o)], the exclamation mark and “lol” (meaning laugh out loud) or similar (such as “hehehe”). No attempt is made here to contextualise or analyse each incidence of paralanguage. The aim in presenting the following table is to give an overview of the extent to

which respondents used these linguistic devices in their interviews. As described in Table 8.4, respondents varied in the extent to which they used paralanguage which seems to impact on the interviewer’s impression of rapport building within the interview. Interviewer use of paralanguage is given in brackets for each respondent and category.

Table 8.4: Use of paralanguage by respondents (and interviewer)

Respondent	Emoticons		Exclamation marks		“lol”		Other	
OLC1	6	(0)	6	(9)	0	(2)	0	(1)
OLC2	3	(1)	9	(11)	0	(0)	0	(0)
OLC3	1	(2)	18	(18)	5	(1)	2	(2)
OLC4	1	(2)	4	(12)	0	(1)	0	(1)
OLC5	0	(1)	0	(7)	0	(0)	0	(0)
OLC6	4	(2)	11	(10)	0	(0)	0	(0)

If use of paralanguage described in this table is placed on a continuum, it may be enlightening to contrast respondents at either end of the continuum. At one extreme, OLC5 did not use any paralanguage at all. This corresponds to what I wrote at the time of the interview about getting little emotional feedback from him and perceiving him as more of a “blank page” than the other respondents that I had interviewed online. At the opposite extreme, OLC3 used a great deal of paralanguage. He used few emoticons but included lots of exclamation marks, use of laughter such as “hehehe” and blew kisses at the end of the interview, “xxxxx”. It was a much more familiar, chatty approach and led me to feel that a good rapport had been developed.

Such different communication styles should be seen in the context of the richness of social experience that the respondents bring to the interview. Without wishing to attribute causality, it is interesting to note that OLC5 had extensive experience of

survey interviewing as a member of the 1970 British Cohort Study sample. This project is a continuing, longitudinal study which regularly undertakes face-to-face interviews with members of a sample of British males and females who were all born in a particular week in April, 1970. His experience of participating in this project is likely to be one of the factors that shaped his approach to the online interview. OLC3 had never taken part in a research interview before but was accustomed to using online chat with friends and looking for dates which may have contributed to his more informal approach.

Although other respondents were less extreme in their use of paralanguage, they all projected different personalities through the online medium which engendered diverse impressions of the degree of rapport. The intensity of feeling that may be generated in the interview, however, was not necessarily reflected in the transcript. I found the interview with OLC2 to be very in-depth at the time, although my immediate impression of the transcript was that it did not capture this intensity.

Rapport with the face-to-face respondents was negotiated through assimilation of their more accessible self-presentation and began before the interview started, when I met them in the lobby, took them to my office, offered them a tea or coffee and so on. There was, by contrast, little opportunity to engage online respondents in the niceties before launching into the interview schedule.

8.3.5.2 Online speed of interaction and multi-tasking

In an online synchronous interview, it has been pointed out that the speed of the interaction may affect the flow of the interview and that waiting for a response may unsettle the interviewer. Online respondents were conscious of the time it takes to interact using chat and adopted different strategies for dealing with this. OLC3 attempted to override this aspect of the medium by interacting rapidly which may have contributed to my perceptions of connection with him. He considered that online chat required “*fast fingers*” and in this way he likened the online interview to a face-to-face interaction. He used a particular style of breaking his interactions into smaller sections, which tended to keep up the momentum:

"<OLC3> good morning

<AE> Good morning to you - thanks for doing this

<OLC3> pleaseure.....

<OLC3> long interview.....

<OLC3> hope i can be of use!" (OLC3, 44, unemployed)

Other respondents who also used online chat a lot accepted the slow speed of the medium and felt under no pressure to respond rapidly. One of the strategies that they adopted to deal with the slowness was to do other things at the same time or multi-task. For some, multi-tasking was such an integral aspect of the way that they communicated through online chat that they adopted this strategy even in the interview situation,

"It's OK having chats like this if you're doing something else at the same time, multitasking. If it's the only thing you're doing, it can be a bit forced." (OLC1, 33, working)

In this way, interaction with OLC5 who was multi-tasking could be slow, with some monosyllabic responses coming after long pauses and this, as well as his lack of paralanguage, may have contributed to the feeling that rapport had not been established. The impression of slowness that I felt in the interview with OLC5 is substantiated by the finding that the interview contained the least number of words ($n = 1,887$) words although it was one of the longest online interviews, taking 96 minutes to complete (see Table 8.3 on p133).

The interview with OLC6 also contained fewer words than average ($n = 1,944$) and was the longest online interview, at 105 minutes. The impression that I had of the interview interaction, however, was very different from that of the interview with OLC5. OLC6 rarely used online chat and felt compelled to concentrate on communicating with the interviewer. Although the interview tended to be quite slow, this was because he was considering his answers carefully and resisting the

way that *“chat tries to make u rush things”* (OLC6, 34, student). Perhaps partly because of this pressure to rush, OLC6 found the interview especially demanding and could not relax and multi-task like other respondents. I felt that the interview with him was particularly intense, which reflected his own feelings,

“its very intensive for me – I have to put a lot of focus in this – I cant watch tv or have any other distraction!” (OLC6, 34, student)

Although multi-tasking may result in short breaks in online interaction, more lengthy breaks may also occur if the respondent takes a phone call or answers the door. Such disruptions occurred in half of the online interviews and although it is certainly true that the other online respondents may have ignored phone calls or door bells, this highlights the fact that respondents are more easily distracted when they are not in a face-to-face interview. When F2F4’s mobile phone rang during the interview, he turned it off immediately and did not take the call.

8.3.6 Practicalities of the methodological interview

8.3.6.1 Interview arrangements

In both online and face-to-face modes, the arrangements for the methodological interviews went smoothly. From my perspective, it was encouraging that none of the respondents cancelled or failed to show up and all were reasonably punctual. Both online and face-to-face respondents also seemed to find the arrangements convenient. Most of the online respondents were at home during their interviews, which OLC3 commented was easier than going to an office, and all interviews took place during office hours. OLC4 was the only online respondent to participate from work and he was able to set up his laptop in a quiet room in order to take part in the interview. Although F2F1 was HIV positive and tired easily, he said he preferred to come into the office for the interview. This was despite the fact that the interview was the only thing that he had organised for the day because such activity was physically demanding for him.

Face-to-face methodological interviews were always pre-arranged and a couple of times were held in the evening, so that respondents could come after work. Online respondents were able to slot their interviews more easily into other arrangements. Thus OLC4, as described above, was at work during his interview. Some of the online respondents actually integrated the interview into what they were doing by multi-tasking at the same time as the interview, as described below. In more general terms, these respondents could contact the interviewer if they had an hour or so free and use that time for the interview, which meant that arrangements could be more spontaneous. OLC1 was off to a meeting that afternoon, so suggested that the second interview take place on the same day as his interview for the Internet and HIV study. OLC2 would have done the interview on the same day but I had already left by the time he returned my invitation email. The next morning,

“I emailed him just before 11 and he emailed me back within minutes and we were in the chat room a few minutes later” (OLC2 memo)

Having arranged an appointment with OLC5, he emailed to say that he would prefer to do the interview immediately. Because the interviewer does not want to lose respondents, he or she may feel obliged to proceed at their request, shifting the balance of power in the respondent's direction. If my respondents did feel more empowered, however, they did not abuse this sense of empowerment by arriving late or leaving the interview before I indicated that I had no more questions.

Table 8.5 (on the following page) shows the delay between respondents' Internet and HIV interview with MD and when I contacted them and sent details of the methodological interviews. The table lists all men who I contacted and divides them into those who had been interviewed face-to-face by MD and those who he had interviewed online. It also compares men who participated in the methodological interview with those who either failed to respond to my request to participate or declined the offer. It shows how the majority of men were contacted within four days of their Internet and HIV interview (12 men) and indicates that if men were not contacted within such a short period, they were more likely to fail to respond to the

invitation to take part in an interview with me. This was true of men who had been interviewed both online and face-to-face by MD.

Table 8.5: Delay between interview with MD and initial contact by AE

	MD's face-to-face respondents		MD's online respondents	
	Interviewed by AE	Not interviewed by AE	Interviewed by AE	Not interviewed by AE
Contacted by AE				
On same day	1	-	3	-
On next day	3	-	-	1
On 2nd day	1	-	-	1
On 3rd day	-	-	2	-
On 4th day or more	-	2	1	2
Total	5	2	6	4

There is some indication that men who had expressed an interest in a face-to-face methodological interview were more committed to participation compared to those who expressed an interest in an online methodological interview. Seven face-to-face men were approached to reach the target of five respondents and the two who did not respond were both contacted after a period of a few days. This may have reduced their perception of the interviewer's commitment. Ten online men were approached and two of these were contacted shortly after originally agreeing to participate in a second interview, but still failed to respond.

Use of gay.com and gaydar chat rooms for interviewing was easily arranged. As one of the respondents was unable to open the link to the gay.com chat room, the interview venue was changed to a gaydar chat room but the use of gaydar chat rooms had been piloted and this was not an issue. The advantage of using the gay.com chat room was that the participants were completely anonymous – neither interviewer nor

respondent were required to register with the service before participating. With gaydar, however, both parties needed to register in order to access the chat rooms, which meant that the potential existed for identification of the respondent if he used his usual gaydar login.

For some of the respondents, it may have been preferable to use a different online chat programme instead of gaydar or gay.com. Use of the gaydar and gay.com chat rooms is justified because respondents needed access to at least one of these websites in order to take part in the Internet and HIV web survey and were likely to have had some experience of using gaydar or gay.com online chat. These chat rooms do not, however, have some of the features that other online chat programmes provide and OLC1 suggested that it would be better to do the interview in what he described as a “proper” instant messaging programme such as AOL Instant Messenger, MSN Messenger, Yahoo Messenger or ICQ. One of the features of instant messaging programmes is that they allow you to see whether your friends are online when you log on. They may also have the facility to save interactions without cutting and pasting and to inform participants when the other person is typing, which removes some of the uncertainty that participants may experience, as described in 8.3.5.2 *Online speed of interaction and multi-tasking.*

Although arrangements to meet online respondents in the chat room went smoothly, such pre-planned chat room meetings are not in keeping with the tendency for online chat to occur more spontaneously as a result of coincidental encounters,

“With chat it is about meeting them on-line by chance rather than design”
(OLC2, 29, working)

Online chat was thought to be good for knowing whether your friends were online at the same time as you and, if so, you might “*ping a quick message*” (F2F5, 31, working) to them. Using it for a pre-planned interaction such as an interview may therefore seem somewhat artificial to some respondents:

"I felt it was a little bit forced - that it was being done online for the sake of it"
(OLC1, 33, working)

Tables 8.1 and 8.2 (p130) show it is possible to have an extremely fast turn around with online interviews. One of the second interviews was actually held on the same day as the first interview. This turnaround time is augmented by the lack of time needed to transcribe the interviews. Whereas instant transcripts are generated online, it took me up to fifteen and three-quarter hours to transcribe a single face-to-face interview. Although transcription time may be reduced by employing a professional, this time-saving would need to be balanced against the financial cost of employing such a professional.

8.3.6.2 Use of technology in online and face-to-face interviews

The online interview depends entirely on the reliable technology. When technology breaks down, the interview breaks down. During one of the online interviews, a message came up saying that the respondent had *"left private chat or is ignoring you"*. Neither the respondent nor I were sure what caused this message to appear, but I had saved the transcript and both parties clicked back into the private chat. OLC5 also reported that MD's PC had crashed ten minutes into their interview but they re-arranged the interview and it had not been a problem from his point of view.

Although a malfunctioning tape-recorder would not cause a face-to-face interview to break down, many qualitative interviewers depend on reliable audio technology in order to collect interview data. Between two of the face-to-face interviews, the tape-recorder switched over to "voice only record", which meant that snippets of the interaction failed to be recorded during the subsequent interview. The experience of undertaking this limited number of interviews, therefore, was that technological problems were no more of a hindrance to data collection for online interviews than for traditional interviews.

Using another online chat programme might have had advantages over using gaydar and gay.com chat rooms, as described above. Use of gaydar and gay.com, however,

incurred no extra financial cost to the project or the respondents and did not require participants to install or familiarise themselves with a new programme. The only new equipment that I purchased was an audio cassette recorder that was used for the face-to-face interviews.

8.4 Discussion of findings

The findings show how the quantitative-qualitative hybrid nature of the online interview left some respondents unsure about the type of response that was expected from them. Chen and Hinton (1999) described online synchronous interviews as a series of questions “fired off” and it may be that online interview questions are better conceptualised in more quantitative terms and presented in a more structured format, to avoid the confusion that may arise from asking open, probing questions online. Given the extra physical demands of translating thoughts into text in real time which were experienced here and elsewhere (Chen & Hinton 1999), it might help to reduce respondent burden if the emotional and intellectual demands of the interview were not so great. This approach may help the flow of the online interview, where injecting probes and follow up questions has been found to be problematic (Chase & Alvarez 2000; Davis *et al.* 2004), and the data thereby derived may be used as a useful adjunct to face-to-face interviews (Davis *et al.* 2004) or as part of a grounded theory approach whereby data are collected from different sources using a variety of techniques (Strickland *et al.* 2003).

Although respondents felt that the online interview may enable them to express themselves more freely about sex, a face-to-face interview with somebody who can put respondents at ease may also facilitate a similar level of openness. A skilled interviewer who knows their field may be able to present a self to whom gay, male respondents feel able to speak freely in a face-to-face situation which may be independent of their sociodemographic profile. Some of the respondents felt that they would be able to speak more openly to a gay man because of his insight into gay sex, but F2F1 perceived the interviewer as having less insight into his “harder” sexual preferences. This did not affect his feelings about being able to express himself fully but indicates that building rapport goes beyond matching factors such as gender and sexual orientation. Earlier studies have suggested that gay men are comfortable discussing sensitive issues with women (Darrow *et al.* 1986; Spencer *et al.* 1988) but the findings here indicate that the complex nature of rapport means that generalisations about interviewer-respondent interaction cannot be based solely on standard sociodemographic variables. In this respect, no conclusions can be drawn

about whether the Internet's capacity to hide the interviewer's identity makes online interaction more or less conducive to openness.

The anonymity of an online interview may have other important implications, however. Men who live in smaller towns or cities, may feel less anonymous than London men because of the increased likelihood of knowing the interviewer, particularly if they are also members of a less extensive gay community. Similarly Catania *et al.* (1992 cited in Catania 1997) found that minority ethnic respondents were uncomfortable being interviewed by interviewers who were matched for ethnicity, age and gender.

Use of paralinguage has been associated with friendship formation in online communities (Paolillo 1999; Utz 2000). Its use in the online interview was found to give an impression of rapport building which encouraged the interviewer and may have had a similar effect on respondents. The absence of paralinguage in OLC5's dialogue left the interviewer with the impression that rapport had not been very strong although analysis of the transcript was extremely valuable to the project. OLC3's use of paralinguage and more familiar approach may have developed from his previous experience of using online chat more playfully, as suggested by Gaiser's (1997) exploration of online focus groups. The interviewer needs to feel comfortable with the medium and not be disconcerted by the different ways that respondents choose to express themselves in the absence of visual cues.

Respondents had all used chat in gaydar or gay.com at some time but they varied greatly in their current and former use of online chat in general. Respondents who were familiar with it had developed strategies for dealing with its slowness that impacted upon the interview interaction. One strategy was to attempt to override this aspect of the medium by interacting as rapidly as possible. Respondent use of this strategy in the online interview requires the interviewer to have good typing skills or risk being seen as inattentive (Mann & Stewart 2000). Another strategy was to multi-task, which requires the online interviewer to be patient in waiting for responses. Patience has been highlighted elsewhere as an important online

interviewing skill (Clark 2002; Madge & O'Connor 2002) and is also needed for respondents who take time in composing their responses and who may be less experienced in using online chat. The overall implication is that interviewers need to be able to tune in and adapt to the pace set by the respondent.

The findings did not indicate that the online interview shifted the balance of power. Respondents respected the conventions of interviewing, continuing to answer questions over the agreed period, until the interviewer asked whether they were able to continue or indicated there are no more questions. In this way the online interview itself was not “astigmatic” (Smith 1998), although in arranging an interview time, the interviewer felt a certain pressure to assent to respondent requests to undertake the interview at short notice. There was also some suggestion that respondents felt less committed to their tentative agreement to participate in a second online interview than those who had agreed to do so face-to-face.

Although one of the benefits of online interviews is the access they may give to the less mobile (Bowker & Tuffin 2002; Campbell *et al.* 2001), the only face-to-face respondent with any degree of mobility issues said he preferred to come in for the interview. It is important, therefore, to be aware that respondents may have individual preferences for particular interview modes and it should not be assumed that a respondent who is less mobile would prefer to be interviewed from his or her own home.

The methodological interviews demonstrate that it was possible to have a very fast turnaround time using synchronous online interviews in two respects. Firstly, it was possible for some respondents to find time to take part in a second methodological interview, in which they were unexpectedly asked to participate, very soon after their first interview with MD. This meant that the first interview was still fresh in the respondent's mind. There may be projects which are also based on specific events that would similarly benefit from the rapidity with which respondents may be recruited for an interview. The way that respondents could make themselves available so quickly by slotting their online interviews into other arrangements was

associated with multi-tasking. Earlier studies have pointed out that synchronous online communication is suited to multi-tasking (Walther 1996; Waskul & Douglass 1997). Rather than considering this as a negative feature, therefore, interviewers might do better to consider multi-tasking as an integral part of the way that some people use online chat and that, on the positive side, it is associated with a more flexible approach to interview availability.

The second element of speedy turnaround was that there was no need to transcribe the interview. This benefit has often been quoted in the literature (eg Chen & Hinton 1999; Selwyn & Robson 1998). Not only does this eliminate transcription costs but it means that analysis can begin immediately, which may be helpful for projects with tight deadlines. Analytical approaches that rely on practices such as theoretical sampling, whereby analysis begins during the data collection phase and units continue to be sampled with the aim of saturating emergent themes (Glaser & Strauss 1967), might benefit from the speed with which findings can be fed back into the iterative process. It is important to consider, however, that much less data are gathered in online synchronous interviews than in face-to-face interviews of the same duration.

Another often quoted benefit of Internet research that was also borne out here is its cheapness (eg Chase & Alvarez 2000; Clapper & Massey 1996). There were no equipment costs to add to the financial cost of undertaking online interviews. In fact the only equipment purchased was an audio cassette recorder for the face-to-face interviews. As all respondents were Internet users, they already had access to the Internet, as did the interviewer. Use of gaydar and gay.com chat rooms meant that respondents did not need to download or familiarise themselves with any other chat programmes. Although use of these chat rooms may exclude respondents who do not have ready access to the Internet, this was clearly not an issue for these respondents. The chat rooms were also found to be a reasonably reliable medium of data collection.

8.4.1 Implications for researchers

Online synchronous interviews appear to be suited to a more quantitative, structured format in order to reduce respondent burden, given the extra demands of typing in real time. The use of such interviews increases turnaround time through production of an instant transcript and the opportunity for respondents to slot their online interviews into other arrangements. This requires a flexible approach from the interviewer who also needs experience with online chat in order to adapt to the respondent's style of communicating.

PART IV
CONCLUSION

9 Concluding discussion

9.1 Introduction

This study set out to examine the issues surrounding the recent and rapid emergence of the Internet as a new research tool, in order to inform those wishing to undertake research via the Internet. Its aim was to provide evidence on whether the Internet offers an effective means of gathering data in studies of sexual behaviour among gay and bisexual men. In order to do so, five research questions were defined and addressed in the earlier parts of this thesis. A summary of the findings relating to each of these questions is provided in Chapter 1 (Volume 1, pp18-19).

The aim of this final chapter is to draw on the findings from all aspects of the analysis to present a discussion of the implications of the research for use of the Internet as a data collection tool. This is done under the headings originally introduced in Chapter 1 – “Researching the population of gay and bisexual men” and “Collecting data on sexual behaviour”. Whereas the discussion of findings at the end of each chapter provided detailed interpretation of the results and their relationship to the literature, what follows is a more selective approach to considering the overall implications. It draws on findings from all five empirical chapters (Chapters 4 to 8) to draw a picture of the use of the Internet for researching sexual behaviour among gay and bisexual men.

9.2 Researching the population of gay and bisexual men

This thesis has stressed the difficulties associated with sampling populations of gay and bisexual men for studies of sexual behaviour. The problem begins with how to define the target population given the lack of congruence between self-identification and the behavioural and psychosocial aspects of sexuality. The issue of definition cannot, however, be separated from the practical problem of sampling a minority group which is most easily reached through gay community contacts and / or sexual health services. In this way, certain men are likely to be excluded because they have

little or no affiliation with the gay community or because they have not come into contact with the sexual health services. In the light of this dilemma, the Internet offers excellent promise for research involving gay and bisexual men, as the following will argue. It begins with consideration of the limitations of probability sampling in studies involving gay and bisexual men.

Because the population of British men reporting same sex activity is so small (Mercer *et al.* 2004), the problem of generating a sample of sufficient size is significant. Natsal 2000 identified 175 MSM from a core sample of 11,161 men and women aged between 16 and 44. This clearly illustrates how probability samples of the general population are unlikely to capture sufficient numbers of men for detailed analysis. By comparison, the Internet and HIV 2003 web survey recruited a national Internet sample of two and a half thousand men, providing the statistical power to undertake analysis of subgroups that is likely to be prohibitive with a sample of 175 men.

There are, however, means of generating sampling frames which increase the likelihood of selecting gay and bisexual men, as described in Chapter 6. In order to do so, these frames tend to draw on areas with high densities of gay and bisexual men (eg Blair 1999; Catania *et al.* 2001b; Winkelstein *et al.* 1987). They therefore represent a population of men who are more closely affiliated with the gay community and result in similarly biased samples. The time and expense associated with such probability sampling raises the question as to whether these frames provide samples that are sufficiently superior to justify the extra cost over alternative volunteer samples. Although self-selected Internet samples can make no claims to representativeness, the speed and economy with which they gather data suggests they may provide a competitive alternative.

As the previous paragraph describes, sampling frames with greater numbers of gay and bisexual men are furthermore limited in geographical scope whereas Internet samples can be recruited from across the country and beyond. Chapter 6 illustrates the differences that are likely to be found between samples recruited from different

locations such as London and the regions and the Internet might provide a means of charting such differences in samples of gay and bisexual men both within and across national boundaries.

In the light of these limitations to probability sampling, the following draws on the findings from this methodological study to discuss the use of the Internet for researching the population of gay and bisexual men. In many respects the Internet and HIV samples were a reasonably good match for the Natsal sample. This is quite remarkable, given that it is estimated that less than 1% of men using the gaydar and gay.com profiles and chat rooms actually completed the web survey.

The study provides important evidence that Internet samples cannot easily be dismissed as biased, but some critical differences were found between the Internet and Natsal samples (Chapter 6). Within London, the Internet samples were less ethnically diverse and attracted fewer black respondents than Natsal. Outside London, students were over-represented in the web survey. Most importantly, the findings indicate that the prevalence of high risk behaviour among Internet samples is likely to be over-estimated, particularly in London. Although this latter finding was to be expected, given that people who volunteer for sex surveys tend to have greater sexual experience (Bogaert 1996; Strassberg & Lowe 1995) and involvement in the gay scene is associated with greater sexual activity (Meyer & Colten 1999; Sandfort 1997), it is important that the data are interpreted in this context. This study demonstrates how secondary analysis can be used effectively to evaluate estimates of high risk sexual behaviour against benchmark data. In this way, it not only provides an indication of the potential differences between men who volunteer for web surveys and those who are randomly selected into probability surveys of sexual behaviour, it also suggests a blueprint method for assessing these differences.

The Internet appears to provide an important additional venue within which to recruit samples of gay and bisexual men. Just as differences are found in offline samples depending on where they are recruited, however, the use of different websites is also likely to affect the sample composition (Bull *et al.* 2004; Hewson *et al.* 2003). It was

indeed found that the profile of gaydar and gay.com respondents was somewhat different, with gaydar men less likely to be behaviourally bisexual and more likely to report STDs and recent anal sex (Chapter 6).

The desire to contribute to research and the nature of the survey were consistently given as important reasons for participation in the Internet and HIV 2003 web survey (Chapter 4). This was heightened among openly gay, HIV tested men who may have been more strongly motivated by a community interest in issues of sexual health and HIV/AIDS. Emphasising these aspects of the survey may therefore help to increase participation of a cross-section of such men but the wording should not alienate men who are less acculturated into the gay community. A balance must be struck between encouraging participation and increasing bias which bears further investigation.

In relation to this, there was an indication that the Internet samples might contain fewer bisexual men than the Natsal sample (Chapter 6), but it was not possible to test this on the data. Several indicators of sexual behaviour and identity were used in this study and, as the findings suggest, these measures somewhat different from one another but highly correlated. In order to simplify the following, it is helpful to reintroduce Kinsey's scale (1948) as a combination of psychological reaction and overt experience that may serve here as an overall indicator of sexual behaviour and identification:

Figure 9.1: Kinsey's heterosexual-homosexual rating scale

- 0 Exclusively heterosexual with no homosexual
- 1 Predominantly heterosexual, only incidentally homosexual
- 2 Predominantly heterosexual, but more than incidentally homosexual
- 3 Equally heterosexual and homosexual
- 4 Predominantly homosexual, but more than incidentally heterosexual
- 5 Predominantly homosexual, only incidentally heterosexual
- 6 Exclusively homosexual

Source: Sexual behaviour in the human male (Kinsey et al. 1948: 638)

Thus, it is possible that the Natsal respondents were more likely to have lower scores on Kinsey's scale than the Internet and HIV respondents. This to be expected, given that Internet and HIV respondents were deliberately sampled from gay online venues in order to increase numbers. Although Internet samples are more likely to attract men who are behaviourally bisexual (Tikkanen & Ross 2000), particularly among those who are HIV negative or untested (Elford *et al.* 2004), recruiting men from gay chat rooms is unlikely to capture the full diversity of MSM.

The data suggest that when men with lower Kinsey scores began the Internet and HIV web survey, they were less likely to complete it. Analysis of the men who dropped out before the end of the main survey (Chapter 5) and those who completed it but failed to go on to answer the motivational section (Chapter 4) indicated that there was a profile of generally older, white, educated, open and exclusively homosexual men who were more prepared to provide the data requested by the Internet and HIV study. Although these differences in respondent characteristics accounted for little of the overall variation in dropping out, their pervasive impact bears further discussion and two possible explanations are offered.

Firstly, as Ross *et al.* (2004) have argued, the relevance of the topic may be an important cause of drop out. Those with higher Kinsey scores tended to be routed towards a greater number of questions (Chapter 5) which suggests that the content was more relevant to them and may have maintained their interest in responding. In support of this, Catania (1997) describes how motivation may change during the interview with the respondents' growing awareness of the survey topic. Secondly, the findings from the motivational analysis indicated an association between a higher Kinsey score and an altruistic desire to contribute to academic research into issues of sexual health and HIV/AIDS (Chapter 4) which might serve both to encourage men to start and to finish the survey. These two explanations are not mutually exclusive.

The findings are consistent with previous studies that have highlighted a relationship between sexual experience and taking part in surveys of sexual behaviour (Bogaert 1996; Catania *et al.* 1990; Dunne *et al.* 1997; Strassberg & Lowe 1995). Internet and

HIV web survey volunteers were much more likely to have had recent anal sex with a man than the randomly selected Natsal sample (Chapter 6). Respondents from both studies were likely to have had their first sex with a man at about the same age, however, suggesting that we cannot rule out the possibility that Natsal respondents had been equally active in the past. Although the data emphasise the relevance of current sexual experience in volunteering for surveys of sexual behaviour, this is confounded with the fact that the Internet respondents were recruited from websites used by men who are actively seeking male partners.

Only half of the Internet 2003 respondents had taken part in other online surveys but this group of men were more likely to be motivated by the opportunity to complete another such survey (Chapter 4). This is consistent with earlier findings that previous participation in Internet surveys is one of the most important determinants of subsequent participation (Batagelj & Vehovar 1998). The opportunity to complete an online survey was also associated with having completed the 2002 web survey, seeking cybersex, faster completion time and spending longer on the Internet per week. This suggests that web surveys like those fielded by the Internet and HIV study may attract men who have already taken part in similar surveys and those who are more intense Internet users. The concern is that this may bias the findings to the extent that the behaviour of these men is different from the general population of gay and bisexual men.

There was additional evidence of a “keen” respondent who takes the first opportunity to respond and provides all the information requested. Men who responded during the earlier weeks that the survey was online were more likely to have taken part in other online surveys and to respond the first time they saw the pop-up or banner (Chapter 4). They were less likely to drop out (Chapter 5) and tended to skip fewer questions (Chapter 7). Although the response to web surveys is no doubt in a state of flux, the finding alerts us to the possibility that web surveys may end up drawing samples from a limited pool of people who have a propensity to respond. Nederhof (1986) also found that respondents with more research experience responded with less hesitation, and while these “keen” respondents are welcomed for their speedy

and thorough response, the issue of bias is again raised if they are systematically different from other respondents on the variables of interest.

One of the potential benefits of using the Internet in social research is the possibility of guaranteeing complete respondent anonymity. Although this aspect of the web survey was not examined, such guarantees might have increased participation among certain men. The promise of complete anonymity might also be important in recruiting samples for qualitative interviews and the offer of an online interview might thus encourage participation from those who may not wish to disclose their identity. The London men who participated in the qualitative interviews did not, however, suggest that use of online chat might succeed in reaching a more varied sample of gay and bisexual men across the capital (Chapter 8). The fact that most of the men interviewed in either mode did not consider issues of interview privacy to be of particular concern is likely to be because they were all volunteers. It was suggested that anonymity may have more resonance for men living in smaller communities where they may be more likely to meet the interviewer under other circumstances, particularly if he is also gay.

Online interviews might also be a good way of reaching men who would be unwilling to commit to a formal interview. Respondents highlighted the spontaneous nature of chat, and chat rooms offer the possibility to make impromptu contact with hundreds of gay and bisexual men around the world, providing opportunity for the type of qualitative work that might inform survey design or contribute to a grounded theory approach. This approach might also be a productive method of researching online anonymity. Researchers' familiarity with chat and their ability to multi-task would be critical to the success of such impromptu work.

In summary, the use of the Internet seems to offer an extremely attractive possibility for generating samples of gay and bisexual men for both quantitative and qualitative research. Although its use should be seen in the context of the limitations highlighted by this study, the Internet nonetheless provides a medium for researching

sexual behaviour among gay and bisexual men that compares extremely favourably to strategies that were previously available.

9.3 Collecting data on sexual behaviour

Research using Internet samples is, however, only as good as the data that the samples provide. Although it is important to acknowledge that “*not all sexual topics are created equal*” (Catania *et al.* 1996: 372) and that the degree of topic sensitivity might furthermore interact with respondent characteristics, researchers undertaking studies of sexual behaviour are necessarily mindful of the potential sensitivity of the topic. Studies of sexual behaviour have generally reported an effect whereby respondents provide more socially desirable answers in the presence of an interviewer but the evidence also indicates that computerisation has little or no benefit over self-administration in reporting sensitive behaviours (Moon 1998; Richman *et al.* 1999; Tourangeau *et al.* 2003). Computerisation is, however, associated with a more complete survey response and this study set out to investigate how these effects translate in the context of web surveys and online interviews among gay and bisexual men.

The evidence suggests that the potentially sensitive sexual content of the main part of the Internet and HIV web survey was not a major cause of drop out (Chapter 5). Respondents were more likely to drop out in the early stages of the web survey and questions of sexual behaviour were less likely to provoke drop out, even when such questions were compulsory in the 2002 web survey. This is consistent with earlier findings that most drop out occurs in the early stages whether the topic is sexual (Lindley *et al.* 2003; Ross *et al.* 2003; 2004) or non-sexual (Jeavons 1998; Knapp & Heidingsfelder 2001) which suggests that sexual content is unlikely to engender a different type of behaviour with respect to survey drop out.

The item nonresponse analysis indicated a clear mode effect whereby pen-and-paper survey respondents were more likely to skip questions than web survey respondents but the effect was fairly consistent across a range of topics and did not indicate that the mode had a differential impact on sensitive questions (Chapter 7). The linear

relationship between item nonresponse in the matched questions of the web and pen-and-paper surveys suggested that some questions generated higher and highly correlated levels of item nonresponse but this was attributable to format rather than content. The design of this study makes it impossible to disentangle the effect of various uncontrolled factors, such as sampling, on item nonresponse but the clear pattern in the findings suggests that this is an important area for further investigation.

The likely explanation for much of the item nonresponse in the pen-and-paper survey was that it was mistaken and not deliberate. Whereas questions in the pen-and-paper survey competed for space, web survey questions benefited from the clarity of its page-by-page design and whereas the gym respondents may have overlooked instructions, the automatic routing of the web survey is also likely to have contributed to its reduced item nonresponse. Thus respondents had to make their own way through the complex routing of the pen-and-paper survey, whereas the format of the web survey facilitated respondents' progress through the questionnaire resulting in less item nonresponse (de Leeuw 2001; Tourangeau *et al.* 2000).

As described earlier, respondent characteristics accounted for little of the variation in dropping out. There were also few associations between these characteristics and item nonresponse (Chapter 7). It is worth noting, however, that there were certain similarities between the men who were more likely to drop out and those who skipped more questions. Both of these response behaviours were more common among men who were minority ethnic, bisexual and less open about their sexuality. The lower Kinsey score that was associated with dropping out of the web survey is also implicated in the likelihood of skipping questions in both modes and may be the outcome of less engagement in the survey content or less motivation to provide a response. The issue of ethnicity is important and merits further investigation beyond the capacity of this study, given the small and diverse nature of its minority ethnic sample.

Men who were HIV positive were more likely to skip questions in both the web and pen-and-paper surveys (Chapter 7). These men were also more likely to drop out of

the 2002 web survey than the 2003 web survey (Chapter 5). This was the main difference in drop out between the two years and could be attributed to a number of uncontrolled variables. One of the differences between the two years, however, was that all questions were compulsory in the 2002 web survey and most were optional in the 2003 survey. The combined evidence suggests that HIV positive men reacted differently from other men to the survey content. They may have found some of the questions inappropriate, as described by one of the interviewees in the qualitative interviews, or they may have found recalling the information required more burdensome. Data from HIV positive respondents is especially important in studies of HIV risk behaviour and these findings require further investigation.

In the same way that the Internet mode had no clear benefit over the pen-and-paper mode in reporting sensitive behaviours, the online mode did not appear to ease reporting of sexual behaviour in the qualitative interviews (Chapter 8). Respondents who were interviewed online or face-to-face reported that they felt similarly open. Although online interviews took longer, they produced less dialogue than the face-to-face interviews and presented some of the respondents with difficulties in expressing themselves because of the combined physical and intellectual demands. Whereas face-to-face respondents furthermore understood the discursive nature of the interview, online respondents were less clear about how to respond. As described earlier, the anonymity of the Internet might encourage participation among some respondents but mediated communication was considered less trustworthy under certain circumstances. The impact of these opposing forces needs exploring.

Although the Internet has been shown to provide an excellent medium for collecting more complete data in quantitative research, the opposite seems true for qualitative data collection. This study did not find that the Internet promotes enhanced responses to questions of sexual behaviour in either case but suggests that experimental work in this area would be particularly valuable.

9.4 Limitations and future directions

Most methodological research uses experimental designs which are able to isolate the causes of different response behaviours. This study has relied on secondary analysis of available data and self-assessed behaviour, which means that it is not possible to attribute causality. The validity of retrospective self-assessment of behaviour should also be flagged, although Goyder (1987) found that data from direct questioning about reasons for survey-response behaviour were commensurate with behavioural data. Helgeson *et al.* (2002) have also argued that exploration of the respondent's actual response to a survey provides the most interesting, informative and valid findings. The fact that only men who reached the end of the web survey were asked about their motivation for participation also throws up the problem of the generalisability of these data.

In the light of such issues of validity, I have sought to stress the tentative nature of the findings. Where possible, I have also relied on an accumulation of evidence in their interpretation. The study is rooted in the empirical literature and I have aimed to draw on evidence from previous studies to validate the findings. My objective was to maximise the value of my access to Internet and HIV data and respondents in order to contribute to the methodological debate and suggest fruitful areas for future research.

A number of areas which would benefit from further investigation have been identified throughout this discussion. In particular, this thesis may inform the direction of future experimental designs which may not benefit from the naturalistic setting of the present study. It suggests the utility of experimental manipulations to test the effect of altruism on encouraging gay and bisexual men to participate in web surveys of sexual behaviour and discourage them from dropping out; the effect of the sexual content of the survey on these behaviours might also be usefully manipulated; and a controlled lab investigation of completion of pen-and-paper and web surveys of sexual behaviour would complement the findings from the investigation of item nonresponse in this thesis.

List of appendices

Appendix 1	Conference papers	172
Appendix 2	Strategy for dealing with item nonresponse	173
Appendix 3	Independent variables used in analysis	175
Appendix 4	Analysis of drop out from 2002 web survey	179
Appendix 5	Derivation of variables used in sample comparisons	184
Appendix 6	Comparison of samples of men from outside London	206
Appendix 7	Comparison of gaydar and gay.com samples	214
Appendix 8	Response to questions with nonsubstantive response options	222
Appendix 9	Item nonresponse for variables used in subgroup analysis	224
Appendix 10	78 matched questions and proportions of item nonresponse	225
Appendix 11	Information about the project for interviewees	229
Appendix 12	Informed consent forms	230
Appendix 13	Participating in qualitative interviews topic guide	232
Appendix 14	Index of themes used in framework analysis	234
Appendix 15	Data coded under “Self expression in the Internet & HIV interview”	236

Appendix 1

Conferences papers

Evans, A., Wiggins, R. D., Bolding, G., Davis, M. and Elford, J. (2003). "Using the Internet for social and behavioural research." Poster presented at the *Association for Survey Computing's 4th International Conference on Survey and Statistical Computing*, September 2003, Warwick University, UK

Evans, A., Wiggins, R. D., Bolding, G., Davis, M. and Elford, J. (2004). "HIV behavioural research on the Internet: factors which motivate participation." Poster presented at the *XV International AIDS Conference*, July 2004, Bangkok, Thailand

Evans, A., Wiggins, R. D., Bolding, G., Davis, M. and Elford, J. (2004). "Dropping out of an online sex survey: when and why?" Paper presented at *RC33 Sixth International Conference on Social Science Methodology*, August 2004, Amsterdam, The Netherlands

Evans, A., Wiggins, R. D., Bolding, G., Davis, M. and Elford, J. (2004). "Factors motivating participation in an online survey of sexual behaviour." Paper presented at the *Association of Internet Researchers' Fifth International Conference*, September 2004, Brighton, UK

Evans, A., Wiggins, R. D., Bolding, G., Davis, M. and Elford, J. (2004). "Factors motivating participation in an online survey of sexual behaviour." Paper presented at the *Postgraduate Research Conference on Technologies: Studies and Strategies*, December 2004, University of Surrey, UK

Evans, A., Wiggins, R. D., Bolding and Elford, J. (2004). "Exploring the mode effect on item nonresponse in web and pen-and-paper surveys of sexual behaviour." Paper accepted for the *XVI ISA World Congress of Sociology*, July 2006, Durban, South Africa

Appendix 2

Strategy for dealing with item nonresponse

As a general rule the SPSS default for dealing with item nonresponse was accepted. This results in the exclusion of cases which contain any item nonresponse for the variables included in the analysis. In multivariate analysis, this strategy is known as excluding cases listwise and is considered to be a good alternative where only a few respondents have missing data and they appear to be randomly distributed throughout the sample (Tabachnick & Fidell 2001). The following difficulties in the use of other SPSS methods of dealing with missing data and the lack of firm guidelines about how much missing data is acceptable (Tabachnick & Fidell 2001) suggest the use of this alternative. Field (2005) furthermore advises that more complicated imputation methods be left to the experts.

A second option is to exclude cases pairwise which means that respondents are excluded from calculations using the variable for which they have missing data. This option is not recommended because it may result in nonsensical variables or an R^2 that is either negative or greater than 1.0 (Field 2005).

The third option is mean substitution whereby means from available data are used to replace missing values. Although mean substitution is a conservative method which does not alter the mean of the distribution or require the researcher to guess missing values, the drawback is that the variance of the variable is reduced and its correlation with other variables is thereby reduced (Tabachnik & Fidell 2001). The reduced variance may also result in smaller standard errors, leading to significant results due to data replacement rather than genuine effect (Field 2005). Mean substitution was used where the missing data in a large number of explanatory variables reduced the number of cases substantially. It was considered the best alternative for dealing with this and the findings were compared to those using only complete cases, as recommended by Tabachnick and Fidell (2001).

It should also be added that some of the analysis was based on variables where respondents were given the option to say that they were “not sure” and, in this case, respondents who gave nonsubstantive answers were included as missing data.

Appendix 3

Independent variables used in analysis

Age group	Up to 24 25 to 34 35 to 44 45 to 54 55 and over
Ethnicity	White Minority ethnic
Student	Student Not student
Working	Working Not working or student
Not working	Working or student Not working
Social Class	I II IIIN IIIM IV V
Degree / prof qual	No Yes
Living in London	No Yes
Urban Area	No Yes
Born in the UK	No Yes
Sexual orientation	Bisexual Gay

Openness about sexuality	Not open Open to some Open to most Completely open
Sexual partners	Men only Men and women
Sought cyber sex	No Yes
Looked at porn online	No Yes
High risk sex	No UAI Concordant UAI (partner of same HIV status) Non-concordant UAI (unknown/discordant status)
HIV positive	No Yes
HIV negative	No Yes
HIV tested	No Yes
Health	Poor Fair Good Very good Excellent
Current female partner	No Yes
Current male partner	No Yes
Knows men with HIV	No Yes
Member of gay group	No Yes
Reads gay press	Never Sometimes Often

Socialising with gay men	1 not at all – 7 all the time
Visits gay venues	Never At least once a year At least once a month At least once a week Every day
Depressed	Strongly Disagree Disagree Agree Strongly Agree
Suicidal thoughts	Strongly Disagree Disagree Agree Strongly Agree
Lonely	Strongly Disagree Disagree Agree Strongly Agree
Whether at home	No Yes
Where began survey	gaydar gay.com
Took part in 2002 web survey	Yes No Unsure
Completion time	Up to 17 minutes 18 to 27 minutes 28 to 41 minutes
Whether completed survey in small hours (1:00 – 6:59)	No Yes
Whether completed survey in morning (7:00 – 12:59)	No Yes
Whether completed survey in afternoon (13:00 – 18:59)	No Yes
Whether completed survey in evening (19:00 – 12:59)	No Yes

Week of completion	1st week 2nd week 3rd week 4th week 5th week
Hours on the Internet per week	Up to 5 6 to 10 11 to 15 16 to 20 21 to 25 26 to 30 At least 31
Frequency of online cruising	Less than once a week At least once a week Every day
When started online cruising	Less than 3 months ago 3 to 12 months ago 1 to 2 years ago More than 2 years ago
Hours online cruising per week	Up to 5 6 to 10 At least 11

Appendix 4

Analysis of drop out from 2002 web survey

The 2002 and 2003 Internet and HIV web surveys were somewhat different in their approach to skipping questions. The 2002 web survey was designed so that respondents could not proceed to the next question until they had provided a response to the current question. As all questions were compulsory, we can conclude that the drop outs did one of the following after answering their last question:

- dropped out without proceeding to the following question;
- proceeded to the following question, didn't answer it and dropped out;
- proceeded to the following question, tried to skip it and then dropped out.

Therefore any respondent who failed to answer the final question in the survey was classified as having dropped out.

The 2002 web survey contained fewer questions than the 2003 web survey, with a total of 135 questions in 2002 compared to 158 questions in 2003. The questions used to filter out men who had not been sexually active with another male over the past year occurred at questions 12 and 13 in the 2002 questionnaire and questions 20 and 21 in the 2003 questionnaire.

Respondents clicked into the 2002 web survey 7,128 times. The survey was completed 4,974 times (69.8%) and in 1,977 cases (27.7%), men dropped out before the end. 177 men (2.5%) who answered the sociodemographic questions were not eligible to complete the survey because they had not been sexually active with a man in the previous year.

As with the 2003 survey, there was a high rate of drop out during the pre-filter questions, with 91% of men remaining at question 11, dropping to 88% when men had been filtered out due to ineligibility. The median last question for drop outs was

28. There was an increased rate of drop out between questions 40 and 60. These questions correspond to questions 55 to 84 in the 2003 survey and a similar explanation is offered. In the 2002 survey, questions 40 to 60 all routed respondents to the next question apart from question 48 which filtered respondents who had not used the Internet to look for a sexual partner to the next section. As 83.3% of the sample had used the Internet to look for a male sexual partner, even following the routing question at number 48, the drop out potential remained high.

Table A4.1 shows a comparison of the drop out patterns for subgroups, based on the Log Rank statistic. In 2002, no paradata on date or time of survey completion were gathered, but the data show how in the pre-filter part of the questionnaire, age and ethnicity were significantly associated with likelihood of dropping out and in the post-filter part of the questionnaire, age, ethnicity, work status, sexual orientation, openness, sexual partners and HIV status were all associated with drop out.

Table A4.1:
Log Rank comparison of drop out during 2002 pre- and post-filter questions

	All men	UK men only
Age group	13.7 **	28.5 **
Ethnicity	17.5 **	11.2 **
Work status	5.5	14.7 **
Education	2.9	2.0
Place of residence	1.6	0.0
Type of area	n/a	1.4
Sexual orientation	n/a	63.0 **
Openness	n/a	91.8 **
Sex with only men	n/a	50.8 **
HIV status	n/a	20.3 **

Note: * $p \leq 0.05$, ** $p \leq 0.01$

As in 2003, younger men were more likely to drop out than older men during the pre-filter questions (94.2% of under 24s vs 97.0% of 45 to 54s finished the section), as were minority ethnic men compared to white men (91.7% vs 96.0% finished).

Examination of the drop out of UK men over the post-filter questions found that younger men continued to be more likely to drop out than older men (75.5% vs 84.5% finished the survey) as were minority ethnic men compared to white men (72.8% vs 80.1% finished). Men who were students were more likely to drop out (74.0% vs 80.4% finished). Men who self-identified as bisexual were more likely to drop out (70.4% vs 81.6% finished), as were those who were less open about their sexuality (67.2% vs 81.5% finished) and those who had sex with men and women (70.7 vs 81.3% finished).

83.0% of HIV negative men finished the survey whereas never tested men were less likely to do so (78.3%) and HIV positive men were the least likely to finish (77.3%). Drop out by HIV status is the only case where the direction of the findings is different from the 2003 web survey. In 2003, HIV positive men were the most likely to finish the survey whereas in 2002, they were the least likely to do so.

Table A4.2: Variables associated with drop out during 2002 post-filter questions

	Odds ratio
Age (continuous)	0.98 **
Minority ethnic (vs white)	1.35 *
Bisexual (vs gay)	1.38 **
Not open about sexuality (vs open)	1.79 **

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Modelling predictors of drop out in the 2002 web survey was undertaken using logistic regression with forward stepwise selection. Variables that were significantly associated with dropping out were entered into the model with the exception of HIV status because it occurred after the filter questions and reduces the sample size. Age was retained as a predictive factor, as were ethnicity, sexual orientation and openness about orientation.

Increasing age reduced the likelihood of dropping out (OR = 0.98) whereas being from an ethnic minority (OR = 1.35), self-identification as bisexual (OR = 1.38) and being less open about sexual orientation (OR = 1.79) increased the likelihood of dropping out. Table A4.2 shows the findings with openness about orientation recoded to a dichotomous variable in order to simplify interpretation. A small proportion of the likelihood of dropping out ($R^2 = 0.02$) is accounted for by these variables which failed increase the percentage of correctly classified respondents from 79.9% (-2LL = 5,449.6, $\chi^2 = 110.0$, 4df, $p \leq 0.01$).

Table A4.3:
Variables associated with drop out of 2002 post-filter questions (HIV status included)

	Odds ratio
Age (continuous)	0.98 **
Bisexual (vs gay)	1.43 **
Not open about sexuality (vs open)	1.80 **
HIV status (HIV positive as reference)	
HIV negative	0.61 **
Never tested	0.67 **

Note: * $p \leq 0.05$, ** $p \leq 0.01$

When HIV status is included, ethnicity drops out and HIV status it is maintained in the final model (see Table A4.3). Increasing age continues to reduce the likelihood

of dropping out (OR = 0.98) and self-identification as bisexual (OR = 1.43) and openness about orientation (OR = 1.80) continue to be associated with dropping out. In comparison to HIV positive men, HIV negative men were more likely to drop out (OR = 0.61) as were never tested men (OR = 0.67).

Again, just 2% of the likelihood of dropping out is accounted for by these variables and they do not increase the percentage of correctly classified respondents about the null model level of 80.5% ($-2LL = 5,246.3$, $\chi^2 = 116.2$, 5df, $p \leq 0.01$).

Appendix 5

Derivation of variables used in sample comparisons

The following describes how the variables used in the present analysis were derived from the questions that respondents were asked in the National Survey of Sexual Attitudes and Lifestyles 2000 (Natsal), and in the Internet and HIV 2003 web survey (Internet 2003) and 2002 web survey (Internet 2002). The categories used in the present analysis are listed under each variable heading and followed by an explanation of how these categories were derived from each of the three surveys.

The following describes whether each question was asked in the face-to-face or self-completion mode for Natsal respondents, or whether the measure was derived by alternative means.

For Internet 2003, routing questions were compulsory but other questions were not. The following describes where Internet 2003 questions were compulsory. All questions were compulsory for Internet 2002.

Age

In number of years.

Age group

18 to 19

20 to 24

25 to 34

35 to 44

Natsal (face-to-face)

The age of Natsal respondents was derived from the question, *in which month and year were you born?*

Internet 2003 and Internet 2002

This question was compulsory in Internet 2003 (as were all questions in Internet 2002).

How old are you? Please type the number in the box

Ethnicity

White

Black African

Black Caribbean

Other Black

} Black (African / Caribbean / Other)

Asian (Pakistani / Indian / Bangladeshi)

Mixed / Other

Natsal (face-to-face)

Natsal respondents were shown a card with the following options and asked, *to which of the ethnic groups on this card do you consider you belong?*

White

Mixed ethnic group

Asian or Asian British

Black or Black British

Chinese

Other ethnic group

The ethnicity variable used in the analysis was created on the basis of the above question and follow up questions asked to Asian and Black respondents.

Asian respondents were asked, *“What is your cultural background? Is it Indian, Pakistani, Bangladeshi or any other Asian background?”* Black respondents were asked, *“What is your cultural background? Is it Caribbean, African or any other Black background?”*

The “Mixed / Other” category used in the analysis consisted of “Mixed ethnic group”, “Chinese”, “Other ethnic group” and “Other Asian background”, as defined by Natsal.

Internet 2003

Which of the following ethnic groups best describes you?

White

South East Asian

Black African

Black Caribbean

Any other Black background

Asian (Pakistani / Indian / Bengali)

Mixed / Other

The “Mixed / Other” category used in the analysis included “South East Asian” and “Mixed / Other”.

Internet 2002

Which of the following ethnic groups best describes you?

White

South East Asian

Black (African / Caribbean / Other)

Asian (Pakistani / Indian / Bengali)

Mixed / Other

Work status

Working

Not working

Student

Natsal (face-to-face)

Natsal respondents were shown a card with the following options and asked, *Which of these descriptions applies to what you were doing last week, that is, in the seven days ending last Sunday?*

Going to school or college full-time (including on vacation)

On government training or employment scheme (eg. the New Deal)

In paid employment or self-employment (or away temporarily)

Waiting to take up paid work already obtained

Unemployed and registered for benefit

Unemployed, not registered, but actively looking for a job

Unemployed, wanting a job (of at least 10 hours per week), but not actively looking for a job

Permanently unable to work because of long-term sickness or disability

Looking after the home or family

Doing something else

The category “temporarily sick or disabled” was added to the variable. Respondents who were “going to school or college” were coded as “Student”; those who were in “government training” or “paid employment” were coded as “Working”; and all others were coded as “Not working”.

Internet 2003

This question was compulsory for Internet 2003.

Which of the following best applies to you or your work in the last week?

Employee

Student

Unemployed

Self-employed with employees

Self-employed/freelance without employees

Medically retired/retired due to ill-health

Retired (Other reasons)

Respondents who defined themselves as “Employee” or “Self-employed” were coded as “Working” for the analysis; those who were “Unemployed” or “Retired” were coded as “Not working”; and those who defined themselves as “Student” remained as “Student”.

Internet 2002

Are you employed at present?

Yes

No

Respondents who said “Yes” to the above question were coded as “Working”. Those who said “No” were coded as “Not working” unless they said that they were still in full-time education to the following question, in which case they were coded as “Student”.

Highest educational qualification

Degree level

Not to degree level

Highest qualification is not broken down into further categories because Internet and HIV categories do not distinguish between levels of NVQ or City and Guilds (which may be equivalent to GCSE or to A level) or CSE (which may be equivalent to GCSE or below).

Natsal (face-to-face)

The highest qualification of Natsal respondents was derived from the following:

Have you passed any exams or got any of the qualifications on this card?

Yes

No, none

Please read down the list and tell me the highest qualification that you have, that is, the first one you come to:

<i>Degree level qualification</i>	<i>GCSE GRADES D-G</i>
<i>A-levels</i>	<i>CSE GRADE 1, etc</i>
<i>AS level</i>	<i>CSE GRADES 2-5, etc</i>
<i>SLC Higher Grade, etc</i>	<i>CSE Ungraded</i>
<i>O-level, 1975 or earlier</i>	<i>SLC Lower</i>
<i>O-level, after 1975 A-C</i>	<i>SUPE Lower or Ordinary</i>
<i>O-level, after 1975 D-E</i>	<i>School Certificate</i>
<i>GCSE GRADES A-C</i>	<i>Foreign qualification</i>

And do you have any of the qualifications on this card?

Yes

No, none

Which ones? Please read out the numbers. PROBE: Which others?

<i>Teaching qualification</i>	<i>City & Guilds Craft</i>
<i>Nursing qualification</i>	<i>NVQ Level 5</i>
<i>HNC/HND, etc</i>	<i>NVQ Level 4</i>
<i>ONC/OND, etc</i>	<i>NVQ Level 3, etc</i>
<i>City & Guilds Full</i>	<i>NVQ Level 2, etc</i>
<i>City & Guilds Advanced</i>	<i>NVQ Level 1, etc</i>
<i>Recognised trade apprenticeship completed</i>	
<i>Clerical or Commercial Qual</i>	
<i>Other vocational or professional qualification</i>	

Internet 2003

Could you tell us what your highest educational qualification is?

<i>GCSE</i>	<i>AS Level</i>
<i>O Level</i>	<i>A Level</i>
<i>NVQ</i>	<i>Degree (BA/BSc)</i>
<i>City and Guilds</i>	<i>Higher degree (MSc, MA MBA, PhD)</i>
<i>CSE</i>	<i>Professional Qualification</i>

<i>HND (Higher National Diploma)</i>	<i>Other</i>
<i>BTEC (Technical Diploma)</i>	<i>None</i>

Internet 2002

Internet 2002 did not contain any questions about the respondent's highest educational qualification.

Number of post-16 years in education

None
Up to 2 years
3 years or more
Still in full-time education

Natsal (face-to-face)

Years of post-16 full-time education was calculated on the basis of responses to the following question:

At what age did you complete your continuous full-time education?

If you had a 'gap' year between school and university or college please include it as continuous.

Internet 2003 and Internet 2002

How many years of full-time education have you had since you were 16?

None
Up to 2 years
3 years or more
Still in full-time education

Lives in urban or rural area

Urban
Rural

Natsal (interviewer administration)

Interviewers for Natsal were asked to complete the following question after leaving the respondent's house:

TYPE OF AREA

Urban/city centre

Small country town centre

Suburban residential

Rural residential/village centre

Rural (agricultural with isolated dwellings or small hamlets)

Respondents whose homes were in an "urban/city" or "country town" centres or in "suburban residential" were coded as "Urban" for the secondary analysis and those who were lived in "rural" environments were coded as "Rural".

Internet 2003

This question was compulsory and asked to respondents who did not live in London.

Which best describes the area you live in?

City

Town

Rural area

Other

Respondents who lived in London were categorised as "Urban" for the secondary analysis, as were those who said they lived in a "City" or a "Town".

Internet 2002

Which best describes the area you live in?

City

Town

Rural area

Area of Great Britain where lives

London

North East

North West

Yorkshire & Humber

East Midlands

West Midlands

South West

East of England

South East

Wales

Scotland

Outside London

In London

Natsal (from postcode sector)

At the time that Natsal was carried out (and at the time of undertaking the secondary analysis), England was divided into nine Government Office Regions. Respondents were selected into Natsal on the basis of their postcode sector, from which the area of Great Britain in which they were living is coded.

Internet 2003

This question was compulsory.

Where do you currently live?

In London

Elsewhere in the UK

Outside the UK

Respondents who lived “Elsewhere in the UK” were asked the following compulsory question and were provided with a list of 43 cities and regions from which to choose:

Where do you live? Please select your city if it is listed, or a region.

Answers to the above two questions were used to code the respondents' place of residence by Government Office Region.

Internet 2002

Where do you live?

In London

Outside London but in UK

Outside UK

Internet 2002 did not ask any further questions about the city or region outside London where respondents lived.

Social class

I

II

III Manual

III Nonmanual

IV

V

Natsal (face-to-face)

Social class was coded on the basis of the following series of questions, according to the National Statistics Socio-Economic Classification.

I'd like to ask you some details about (the job you/ were doing last week/you are waiting to take up/ the last job you had of at least 10 hours a week)

What (is/was) the name or title of the job?

What kind of work (do you do/will you be doing/did you do) most of the time?

What skills or qualifications (are/were) needed for that job?

(Are/Will/Were) you (be) an employee, or, self-employed?

(Are/Will/Were) you (be) a Director of a limited company? Yes No

*(Are/Will/Were) you (be) a manager, foreman or supervisor, or, other employee?
Including yourself, about how many people (are/were) employed at the place where
you (work/willwork/worked)?*

1 or 2

3 - 24

25 - 499

500+

*What (does/did) your employer make or do at the place where you (work/will
work/worked)?*

(Do/Will/Did) you have any employees?

None

1 - 24

25 - 499

500+

What (do/will/did) you make or do in your business?

Internet 2003

Social class was coded on the basis of responses to the above question about what respondents were doing in the last week and the following series of questions:

Please tell us what your main job is called and describe what you do:

*(If you are unemployed, medically retired or retired for other reasons please tell us
about your last main job)*

Job Title: (e.g. Heating engineer)

Job description (e.g. Installing central heating)

Do you supervise any other employees?

Yes

No

How many people work for your employer at the place where you work? (If you are self-employed please indicate how many people you employ)

1 - 9 people

10 - 24 people

25 - 499 people

500 people

Internet 2002

The 2002 web survey did not contain any questions from which the respondent's social class could be coded.

Place of birth

Born in UK / Eire

Not born in UK / Eire

Born in the European Union

Not born in the European Union

Europe – European Union

Europe – non-European Union

Australia, New Zealand

North America

South and Central America

Caribbean

India, Pakistan, Bangladesh

China

Other Asia

Middle East, North African Countries

West Africa

Central and East Africa

South Africa

Natsal (face-to-face)

Natsal respondents were asked, *Were you born in England, Wales, Scotland, Northern Ireland/Eire or another country?*

It is not therefore possible to distinguish men born in Northern Ireland (UK) from men born in Southern Ireland (Non-UK). A dichotomous variable describing whether or not men were born in the UK or Ireland was created.

Internet 2003

These questions were compulsory.

Were you born in the UK?

Yes

No

Do not know/rather not say

What country were you born in?

Men who were not born in the UK but who said that they were born in Ireland were included as having been born in the UK or Ireland.

Internet 2002

The 2002 web survey did not contain any questions about where the respondent was born.

Self-assessed health status

Poor

Fair

Good

Very good

Natsal (face-to-face)

Natsal respondents were asked, *How is your health in general? Would you say it is very good, good, fair, bad or very bad?*

None of the Natsal respondents said that their health was “Very bad” and as there was no similar category used in the Internet and HIV surveys, this category is not included in the secondary analysis.

Internet 2003

In general, how would you rate your health in the past 3 months?

Poor

Fair

Good

Very good

Excellent

The “Very good” and “Excellent” categories from the Internet and HIV surveys were combined into one category which was compared with the Natsal “Very good”. Respondents with “Poor” health were compared to Natsal respondents who had “Bad” health.

Internet 2002

The 2002 web survey did not contain any general questions about health.

Whether tested for HIV

Yes

No

[Rather not say]

Natsal (self-completion)

Natsal respondents were asked one of the two following questions about HIV testing, depending on whether they had donated blood:

Apart from any occasion when you were donating blood, have you ever had a blood test that involved testing for HIV (the virus that causes AIDS)?

or Have you ever had a blood test that involved testing for HIV, the virus that causes AIDS?

Yes

No

Maybe/Not sure

Prefer not to answer

Respondents who replied “Maybe/Not sure” were not included in the analysis because there were no equivalent responses in the Internet and HIV surveys.

Internet 2003

This question was compulsory.

Have you ever had an HIV test?

Yes

No

Rather not say

There was no equivalent to the Natsal “not sure” category.

Internet 2002

Have you ever had an HIV test?

Yes

No

There was no equivalent to the Natsal “not sure” category and respondents were not given the option to decline to answer the question.

Frequency of drinking alcohol in last year

1 or 2 times a week

1 or 2 times a month

1 or 2 times a year

Never

Natsal (face-to-face)

Natsal respondents were shown a card with the following options and asked,
How often have you had an alcoholic drink of any kind during the last 12 months?

5 or more days a week

3 or 4 days a week

Once or twice a week

Once or twice a month

Once or twice in the last 12 months

Not at all in the last 12 months

The categories “5 or more days a week”, “3 or 4 days a week” and “Once or twice a week” were combined into the category “At least once or twice a week” for the secondary analysis.

Internet 2003

In the past 12 months, please indicate how often (on average) you have used each of the following

Alcohol

Have not used

Once or twice a week

Once or twice a month

Once or twice in the past year

The category “Once or twice a week” was interpreted as “At least once or twice a week” for the present analysis.

Internet 2002

The 2002 web survey did not contain any questions about drinking alcohol.

Whether injected drugs in last year

No

Yes

Natsal (self-completion)

When was the last time you injected yourself with non-prescribed drugs or other substances?

In the last 7 days

Between 7 days and 4 weeks ago

Between 4 weeks and 1 year ago

Between 1 year and 5 years ago

Longer than 5 years ago

Internet 2003

The following question came after a number of items asking respondents about non-prescription drugs that they had used.

Have you injected drugs (other than anabolic steroids) in the past 12 months?

Yes

No

Internet 2002

The 2002 web survey did not contain any questions about injecting drugs.

Mean age of first sex with a male

Natsal (self-completion)

Natsal asks about the age of first sexual contact with a male of any kind and that involving genital contact. First sexual contact of any kind was derived from the following two questions:

Have you ever had ANY kind of sexual experience or sexual contact with a male?

How old were you the first time that happened?

First sexual contact involving genital contact was derived from the following question:

And how old were you the first time you had sex with a man involving genital area/penis contact?

This could be the same age you just gave, or older.

Both these variables are used to compare with the responses of Internet 2003 respondents to the following question:

Internet 2003

This question was compulsory.

How old were you the first time you had sex of any kind with another male?

Years old:

Internet 2002

The 2002 web survey did not contain any questions about the respondents' first sex with another male.

Whether had STDs in last year

Whether had gonorrhoea in last year

Whether had syphilis in last year

Whether had another STD in last year

Yes

No

Natsal (self-completion)

Natsal respondents were asked, *Have you ever been told by a doctor that you had any of the following?*

Herpes (genital herpes)

Trichomonas (Trich, TV)

Gonorrhoea

Syphilis

Chlamydia

NSU (Non Specific Urethritis), NGU (Non Gonococcal Urethritis)

Genital warts (venereal warts, Human Papilloma Virus, HPV)

Yes, but can't remember which

None of these

When were you told by a doctor that you had 'x'?

TYPE IN THE YEAR (MOST RECENT IF MORE THAN ONCE).

Respondents were only asked the year that they were last diagnosed with STD 'x' and not the exact date. So if, for example, if they reported 1999 and their year of interview was 2000, their diagnosis is coded as in the last year, although it could have been up to 2 years ago if they were diagnosed on 1 Jan 1999 and their Natsal interview was on 31 Dec 2000. Respondents who had had any STDs other than gonorrhoea or syphilis (including “yes, but I can’t remember which”) were classified as having had “another STD”.

Internet 2003

Have you had a Sexually Transmitted Disease (STD) in the last year?

Yes

No

Although respondents were also asked whether they had had gonorrhoea, syphilis or another STD, the programme failed to store the answers so the responses are not available.

Internet 2002

Have you had a sexually transmitted disease (STD) in the last year?

Yes

No

Which STD have you had in the last year?

Gonorrhoea

Syphilis

Other

Whether has had recent anal sex

Has not had anal sex (with or without a condom) recently

Has had anal sex (with or without a condom) recently

Natsal respondents are coded according to whether they have had anal sex in the past 4 weeks or in the past 6 months and compared to Internet respondents who have had anal sex in the past 3 months.

Natsal (self-completion)

Respondents were asked the following two questions:

*When, if ever, was the last occasion you had **ANAL SEX** with a man - by you to a partner?*

Anal sex (anal sexual intercourse) is a man's penis entering a partner's anus (rectum or back passage).

In the last 7 days

Between 7 days and 4 weeks ago

Between 4 weeks and 6 months ago

Between 6 months and 1 year ago

Between 1 year and 5 years ago

Longer than 5 years ago

Never had anal sex - by me to partner

*When, if ever, was the last occasion you had **ANAL SEX** with a man - by a partner to you?*

Anal sex (anal sexual intercourse) is a man's penis entering a partner's anus (rectum or back passage).

In the last 7 days

Between 7 days and 4 weeks ago

Between 4 weeks and 6 months ago

Between 6 months and 1 year ago

Between 1 year and 5 years ago

Longer than 5 years ago

Never had anal sex - by partner to me

The two variables were combined into a single variable that described whether the respondent had had any anal sex, insertive or receptive, over the defined periods. The response options were then combined, resulting in two dichotomous variables. The first dichotomous variable described whether or not the respondent had had anal sex in the past 4 weeks and the second dichotomous variable described whether or not the respondent had had anal sex in the past 6 months.

Internet 2003

Respondents were asked the following two questions, which were compulsory in the 2003 web survey:

In the past 3 months have you had anal sex with a condom? ("Anal sex" means anal sexual intercourse, i.e. "fucking" or "being fucked")

Yes

No

In the past 3 months have you had anal sex without a condom

Yes

No

The two variables were combined into a single variable that described whether the respondent had had any anal sex, with or without a condom, in the past 3 months.

Internet 2002

In the past 3 months have you had anal sex with a condom with another man?

("Anal sex" means anal sexual intercourse, i.e. "fucking or being fucked")

Yes

No

In the past 3 months have you had anal sex without a condom?

Yes

No

The two variables were combined into a single variable that described whether the respondent had had any anal sex, with or without a condom, in the past 3 months.

Appendix 6

Table A6.1: Comparison of samples of men from outside London

	Natsal	Internet 2003	Internet 2002
Mean age (yrs)	31.9	28.8	29.4
Standard deviation	6.0	7.7	7.4
<i>Base (n)</i>	79	1525	2846
t statistic		4.3**	2.9**

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Age group (%)

18 to 19	1.6	11.9	10.2
20 to 24	9.5	25.4	21.2
25 to 34	53.9	35.0	40.3
35 to 44	34.9	27.6	28.3
<i>Base (n)</i>	89	1525	2846
phi-square		1.01	0.65

Ethnicity (%)

White	99.1	97.4	96.6
Black African	0.0	0.1	
Black Caribbean	0.0	0.1	0.5
Other Black	0.0	0.1	
Asian	0.9	0.5	0.5
Mixed / Other	0.0	1.9	2.4
<i>Base (n)</i>	79	1511	2846
phi-square		0.04	0.07

Note: minority ethnic respondents are collapsed into one category to calculate phi

Table A6.2: Comparison of samples of men from outside London

	Natsal	Internet 2003	Internet 2002
Work status (%)			
Working	85.5	74.8	77.4
Not working	12.0	6.0	10.0
Student	2.5	19.2	12.6
<i>Base (n)</i>	79	1525	2846
phi-square		1.16	0.42

Highest educational qualification (%)

Degree level	42.2	38.2	-
Not degree level	57.8	61.8	-
<i>Base (n)</i>	79	1522	-
phi-square		0.01	-

Number of post-16 years in education (%)

None	27.3	15.7	18.2
Up to 2 years	20.4	24.8	24.6
3 years or more	49.5	45.0	44.6
Still in f-t education	2.8	14.5	12.6
<i>Base (n)</i>	79	1519	2846
phi-square		0.55	0.39

Table A6.3: Comparison of samples of men from outside London

	Natsal	Internet 2003	Internet 2002
Lives in urban or rural area (%)			
Urban	90.7	89.7	86.3
Rural	9.3	10.3	13.7
<i>Base (n)</i>	79	1509	2846
phi-square		0.00	0.02
Area of Great Britain where lives (%)			
North East	7.4	3.9	-
North West	17.1	16.6	-
Yorkshire & Humber	12.4	8.5	-
East Midlands	9.7	6.5	-
West Midlands	9.6	10.7	-
South West	4.1	9.1	-
East of England	8.2	9.0	-
South East	16.3	17.4	-
Wales	8.6	4.5	-
Scotland	6.6	13.8	-
<i>Base (n)</i>	79	1525	-
phi-square		0.18	-

Table A6.4: Comparison of samples of men from outside London

	Natsal	Internet 2003	Internet 2002
Social class (%)			
I	13.8	7.4	-
II	53.4	49.0	-
IIIN	11.0	23.9	-
IIIM	10.8	12.7	-
IV	10.1	5.8	-
V	0.9	1.2	-
<i>Base (n)</i>	76	1130	-
phi-square		0.21	-
Born in the United Kingdom or Eire (%)			
Born in UK / Eire	92.6	94.0	-
Not born in UK / Eire	7.4	6.0	-
<i>Base (n)</i>	79	1521	-
phi-square		0.00	-
Born in the European Union (%)			
Born in EU	98.1	96.4	-
Not born in EU	1.9	3.6	-
<i>Base (n)</i>	79	1521	-
phi-square		0.02	-

Table A6.5: Comparison of samples of men from outside London

	Natsal	Internet 2003	Internet 2002
Self-assessed health status (%)			
Poor	3.2	3.6	-
Fair	10.9	16.3	-
Good	34.1	28.8	-
Very good	51.9	51.3	-
<i>Base (n)</i>	89	1521	-
phi-square		0.04	-
Whether tested for HIV (%)			
Yes	52.9 (53.4)	48.9	47.6
No	46.1 (46.6)	50.1	52.4
Rather not say	1.0 (-)	1.0	-
<i>Base (n)</i>	71	1525	2846
phi-square		0.01	0.01
<i>Note: "rather not say" category removed to calculate phi in comparison of Natsal and Internet 2002</i>			
Frequency of drinking alcohol in last year (%)			
1 or 2 times a week	71.4	68.8	-
1 or 2 times a month	21.7	18.9	-
1 or 2 times a year	6.9	5.0	-
Never	0.0	7.4	-
<i>Base (n)</i>	89	1520	-
phi-square		0.01	-

Table A6.6: Comparison of samples of men from outside London

	Natsal	Internet 2003	Internet 2002
Whether injected drugs in last year (%)			
No	99.0	98.4	-
Yes	1.0	1.6	-
<i>Base (n)</i>	79	1520	-
phi-square		0.00	-

Mean age of first sex with a male

Age in years	18.1	17.7	-
Standard deviation	5.7	5.4	-
<i>Base (n)</i>	79	1520	-
t statistic		0.7	-

Note: comparison of “sex of any kind” (Internet and HIV) with “any sexual experience or contact (Natsal);

* $p \leq 0.05$, ** $p \leq 0.01$

Mean age of first (genital) sex with a male

Age in years	18.3	17.7	-
Standard deviation	5.7	5.4	-
<i>Base (n)</i>	79	1520	-
t statistic		0.9	-

Note: comparison of “sex of any kind” (Internet and HIV) with “sex involving genital contact (Natsal);

* $p \leq 0.05$, ** $p \leq 0.01$

Table A6.7: Comparison of samples of men from outside London

	Natsal	Internet 2003	Internet 2002
Whether had STDs in last year (%)			
Yes	3.3	15.2	16.6
No	96.7	84.8	83.4
<i>Base (n)</i>	77	1518	2846
phi-square		0.44	0.55

Whether had gonorrhoea in last year (%)

Yes	0.0	-	4.1
No	100.0	-	95.9
<i>Base (n)</i>	77	-	2846
phi-square		-	-

Note: phi-square cannot be calculated because no cases were expected to have had gonorrhoea in the last year

Whether had syphilis in last year (%)

Yes	0.0	-	0.6
No	100.0	-	99.4
<i>Base (n)</i>	77	-	2846
phi-square		-	-

Note: phi-square cannot be calculated because no cases were expected to have had syphilis in the last year

Table A6.8: Comparison of samples of men from outside London

	Natsal	Internet 2003	Internet 2002
Whether had another STD in last year (%)			
Yes	3.3	-	13.2
No	96.7	-	86.8
<i>Base (n)</i>	77	-	2846
phi-square		-	0.31

Whether has had recent anal sex (4 weeks vs 3 months) (%)

	4 weeks	3 months	
Yes	56.5	75.2	73.6
No	43.5	24.8	26.4
<i>Base (n)</i>	79	1525	2846
phi-square		0.14	0.12

Note: comparison of anal sex in the past 4 weeks (Natsal) with the past 3 months (Internet and HIV)

Whether has had recent anal sex (6 months vs 3 months) (%)

	4 weeks	3 months	
Yes	74.4	75.2	73.6
No	25.6	24.8	26.4
<i>Base (n)</i>	79	1525	2846
phi-square		0.00	0.00

Note: comparison of anal sex in the past 6 months (Natsal) with the past 3 months (Internet and HIV)

Appendix 7

Table A7.1: Comparison of gaydar and gay.com samples

	gaydar 2003	gay.com 2003
Mean age (yrs)	29.2	30.7
Standard deviation	7.7	7.3
<i>Base (n)</i>	1248	331
t statistic		3.2 **

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Age group (%)

18 to 19	10.9	5.7
20 to 24	24.2	18.7
25 to 34	35.8	42.3
35 to 44	29.1	33.2
<i>Base (n)</i>	1248	331
Mann-Whitney U		184,077.0 **

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Ethnicity (%)

White	95.8	93.3
Black African	0.2	0.0
Black Caribbean	0.5	0.0
Other Black	0.2	0.0
Asian	0.5	1.8
Mixed / Other	2.8	4.9
<i>Base (n)</i>	1237	327
chi-square		12.6 *

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Table A7.2: Comparison of gaydar and gay.com samples

	gaydar 2003	gay.com 2003
Work status (%)		
Working	75.2	78.2
Not working	6.9	6.0
Student	17.9	15.7
<i>Base (n)</i>	<i>1248</i>	<i>331</i>
chi-square		1.3

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Highest educational qualification (%)

Degree level	44.3	51.1
Not degree level	55.7	48.9
<i>Base (n)</i>	<i>1245</i>	<i>331</i>
chi-square		4.8 *

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Number of post-16 years in education (%)

None	14.4	11.5
Up to 2 years	22.6	20.2
3 years or more	49.1	56.5
Still in f-t education	13.9	11.8
<i>Base (n)</i>	<i>1241</i>	<i>331</i>
chi-square		6.0

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Table A7.3: Comparison of gaydar and gay.com samples

	gaydar 2003	gay.com 2003
Lives in urban or rural area (%)		
Urban	91.7	92.4
Rural	8.3	7.6
<i>Base (n)</i>	1238	327
chi-square		0.2

*Note: *p ≤ 0.05, **p ≤ 0.01*

Area of Great Britain where lives (%)

London	24.5	28.4
North East	2.8	3.1
North West	13.1	10.9
Yorkshire & Humber	6.7	5.3
East Midlands	5.4	4.1
West Midlands	8.9	5.6
South West	7.6	5.6
East of England	5.8	7.8
South East	12.3	12.8
Wales	3.9	2.2
Scotland	9.1	14.1
<i>Base (n)</i>	1229	320
chi-square		18.8 *

*Note: *p ≤ 0.05, **p ≤ 0.01*

Table A7.4: Comparison of gaydar and gay.com samples

	gaydar 2003	gay.com 2003
Social class (%)		
I	8.0	11.4
II	52.6	49.4
IIIN	21.4	26.7
IIIM	12.3	9.4
IV	4.9	2.7
V	0.8	0.4
<i>Base (n)</i>	946	255
Mann-Whitney U		115,315.0

*Note: *p ≤ 0.05, **p ≤ 0.01*

Born in the United Kingdom or Eire (%)

Born in UK / Eire	90.5	84.8
Not born in UK / Eire	9.5	15.2
<i>Base (n)</i>	1240	329
chi-square		8.8 **

*Note: *p ≤ 0.05, **p ≤ 0.01*

Born in the European Union (%)

Born in EU	93.8	90.0
Not born in EU	6.2	10.0
<i>Base (n)</i>	1240	329
chi-square		5.8 *

*Note: *p ≤ 0.05, **p ≤ 0.01*

Table A7.5: Comparison of gaydar and gay.com samples

	gaydar 2003	gay.com 2003
Global region of birth (%)		
Europe – EU	93.8	90.0
Europe – non-EU	0.6	1.5
Australia, New Zealand	0.7	0.9
North America	0.6	1.2
South & Central America	0.6	0.3
Caribbean countries	0.2	0.3
India, Pakistan, Bangladesh	0.1	0.3
China (inc Hong Kong, Taiwan)	0.7	1.2
Other Asia	0.6	2.4
Middle East, North Africa	0.3	0.3
West Africa	0.1	0.0
Central and East Africa	0.7	0.9
South Africa (republic of)	1.0	0.6
<i>Base (n)</i>	<i>1240</i>	<i>329</i>
chi-square		16.0

*Note: *p ≤ 0.05, **p ≤ 0.01*

Self-assessed health status (%)

Poor	3.9	2.4
Fair	17.1	14.5
Good	28.3	30.8
Very good	50.7	52.3
<i>Base (n)</i>	<i>1246</i>	<i>331</i>
Mann-Whitney U		199,303.0

*Note: *p ≤ 0.05, **p ≤ 0.01*

Table A7.6: Comparison of gaydar and gay.com samples

	gaydar 2003	gay.com 2003
Whether tested for HIV (%)		
Yes	54.1	51.1
No	44.2	48.3
Rather not say	1.7	0.6
<i>Base (n)</i>	1248	331
chi-square		3.5

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Frequency of drinking alcohol in last year (%)

1 or 2 times a week	69.6	66.8
1 or 2 times a month	19.0	20.2
1 or 2 times a year	4.4	5.7
Never	7.0	7.3
<i>Base (n)</i>	1243	331
Mann-Whitney U		199,760.0

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Whether injected drugs in last year (%)

No	98.0	98.2
Yes	2.0	1.8
<i>Base (n)</i>	1243	328
chi-square		0.0

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Table A7.7: Comparison of gaydar and gay.com samples

	gaydar 2003	gay.com 2003
Mean age of first sex with a male		
Age in years	17.5	18.0
Standard deviation	5.2	5.9
<i>Base (n)</i>	<i>1244</i>	<i>331</i>
t statistic		1.3

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Gender of sexual partners in the past 12 months (%)

Men only	88.5	81.5
Mostly men	5.9	5.5
Men and women	3.1	7.3
Mostly women	2.1	4.8
Women only	0.4	0.9
<i>Base (n)</i>	<i>1232</i>	<i>330</i>
chi-square		21.6 **

Note: * $p \leq 0.05$, ** $p \leq 0.01$

Table A7.8: Comparison of gaydar and gay.com samples

	gaydar 2003	gay.com 2003
Whether had STDs in last year (%)		
Yes	18.7	12.8
No	81.3	87.2
<i>Base (n)</i>	<i>1243</i>	<i>329</i>
chi-square		6.4 *

*Note: *p ≤ 0.05, **p ≤ 0.01*

Whether has had recent anal sex (3 months) (%)

Yes	78.8	72.8
No	21.2	27.2
<i>Base (n)</i>	<i>1248</i>	<i>331</i>
chi-square		5.3 *

*Note: *p ≤ 0.05, **p ≤ 0.01*

Appendix 8

Response to questions with nonsubstantive response options

	Web survey		Pen-and-paper survey	
	N	%age	N	%age
Have you ever had an HIV test?				
Yes				
No				
Rather not say	13	2.3	n/a	n/a
Missing	n/a	n/a	4	0.8
Total	13	2.3	4	0.8

The last HIV test result was:

HIV positive

HIV negative

Rather not say	1	0.3	n/a	n/a
Did not get the result	2	0.5	n/a	n/a
Missing	n/a	n/a	4	0.9
Total	3	0.8	4	0.9

Which London borough do you live in? (closed question)

If YES, which London Borough? (open question)

Do not know	5	0.9	n/a	n/a
Missing	n/a	n/a	33	6.3
Total	5	0.9	33	6.3

	Web survey		Pen-and-paper survey	
	N	%age	N	%age
At what point did you decide to have anal sex without a condom?				
Before logging on to the Internet				
While on-line looking for a sexual partner				
When I met him				
It was spontaneous/It just happened				
After we had had sex a few times				
I do not know	4	3.5	n/a	n/a
Missing	n/a	n/a	0	0.0
Total	4	3.5	0	0.0

At what point did you decide to have anal sex without a condom?				
Before going out				
While at the venue looking for a sexual partner				
When I met him				
It was spontaneous/It just happened				
After we had had sex a few times				
I do not know	8	7.5	n/a	n/a
Missing	n/a	n/a	2	2.4
Total	8	7.5	2	2.4

Appendix 9

Item nonresponse for variables used in subgroup analysis

	Web survey (%)	Pen-and-paper survey (%)
Sociodemographic profile		
Getting older	0.0	0.8
White (vs minority ethnic)	1.1	0.6
Being a student, in work, not working	0.0	0.4
Holding a degree / professional qualification	0.2	4.0
Born in the UK	0.7	n/a
Higher social class ¹	16.0	23.8
Sexual orientation and sexual behaviour		
<i>Sexual orientation</i>		
Identifying as gay (vs bisexual)	0.0	0.2
Being less open about orientation (vs more open)	1.1	0.6
<i>Sexual behaviour</i>		
Having any UAI ¹	0.9	0.8
Health, social and emotional		
<i>Health</i>		
Being HIV positive, negative, having tested for HIV ¹	2.9	1.5
Having better health	0.2	0.6
<i>Social</i>		
Having a male partner	0.0	1.0
Knowing men with HIV	0.0	21.1
<i>Emotional</i>		
Being depressed	0.2	4.0
Having suicidal thoughts	0.5	7.0
Being lonely	0.5	4.4
Survey behaviour and Internet use		
<i>Survey behaviour</i> ²		
Having taken part a gym survey	0.4	2.5
Having taken part in 2002 web survey	0.5	2.7
Having taken part in 2002 clinic survey	1.8	2.5
Altruistic motivation ³	52.2	n/a
<i>Internet use</i>		
Increasing hours on Internet per week	1.2	4.5
Whether went online cruising in last week	2.1	4.4

¹ derived from a number of questions

² paradata on date, start time, finish time and website of origin were automatically recorded for web respondents, although the website of origin was not recorded for 21.6% of respondents believed to have bypassed gaydar or gay.com

³ not recorded for those who skipped the motivational section or any of three items constituting this measure

Appendix 10

78 Matched questions and proportions of item nonresponse

Lists item nonresponse for the web survey (Web) and pen-and-paper survey (P&P).

§ Indicates question with high proportion of item nonresponse that was excluded from some of the analysis.

	Proportion of item nonresponse (%)	
Sociodemographic questions	Web	P&P
Ethnicity	1.1	0.6
Job title	3.7	18.5
Job description §	17.0	40.4
Whether supervises employees	10.3	0.7
Size of company	3.8	13.5
Years of education	0.7	1.9
 Sex and sexuality questions	 Web	 P&P
Sexual orientation	0.0	0.2
Openness about orientation	1.1	0.6
Where met sexual partners – past 3 months	0.9	5.1
Whether had anal sex (with condom) – past 3 months	0.8	10.4
Position during anal sex (with condom) – past 3 months	0.5	0.3
Whether looked for Internet partner – past year	0.8	4.5
Whether looked for Internet barebacking – past year	0.2	2.6
Number of recent partners from Internet	0.2	0.7
How often goes online cruising	0.4	2.6
Hours spent online cruising – past week	2.1	4.9
Whether prefers online or offline cruising	0.4	0.4
Number of men met on Internet – past 3 months	1.0	8.0
Number of sex partners from Internet – past 3 months	0.8	5.1
Number of anal sex partners from Internet – past 3 months	0.7	5.8
Number of UAI partners from Internet – past 3 months	1.8	5.6

Proportion of item nonresponse (%)

Sex and sexuality questions (continued)	Web	P&P
Whether Internet partners told HIV status – past 3 months [§]	11.5	22.6
Whether told HIV status to Internet partners – past 3 months [§]	17.7	26.4
Whether Internet partners had same HIV status – past 3 months [§]	23.9	22.6
Whether Internet partners live in London – past 3 months [§]	8.0	17.0
Whether UAI Internet partners had same HIV status – past year	0.0	0.0
Reasons for having UAI with Internet partner	0.6	2.6
Whether went offline cruising – past year	0.0	1.3
Whether looked for offline barebacking – past year	0.0	1.9
Number of sex partners from venues – past 3 months	0.8	10.0
Number of anal sex partners from venues – past 3 months	0.7	8.6
Number of UAI partners from venues – past 3 months	0.9	6.1
Whether venue partners told HIV status – past 3 months [§]	13.2	19.3
Whether told HIV status to venue partners – past 3 months [§]	18.9	30.1
Whether venue partners had same HIV status – past 3 months [§]	16.0	38.6
Whether venue partners live in London – past 3 months [§]	9.4	24.1
Whether UAI venue partners had same HIV status – past year	0.0	5.7
Reasons for having UAI with venue partner	1.4	6.7

Drug use	Web	P&P
Whether used alcohol – past year	0.5	3.4
Whether used marijuana – past year	0.9	9.1
Whether used ecstasy – past year	0.9	8.2
Whether used speed – past year	2.7	14.6
Whether used cocaine – past year	1.6	9.3
Whether used viagra – past year	1.6	10.3
Whether used ketamine – past year	2.1	11.6
Whether used crystal methamphetamine – past year	2.3	12.7
Whether used poppers – past year	0.5	16.0
Whether used steroids – past year	2.3	3.2
Whether injected drugs – past year	0.7	2.3

Proportion of item nonresponse (%)

Health	Web	P&P
Health status	0.2	0.6
Whether attended STD clinic – past year	0.0	0.8
Year of last HIV test	7.7	12.3
Whether taking treatment for HIV	1.5	1.1
Whether knows viral load result	0.0	0.0
Viral load test result	0.0	0.0
Number of HIV tests	2.0	1.7
Whether looked for HIV/STD information – past year	0.2	3.0
HIV attitudes questions	Web	P&P
Belief in new drug therapies reducing infectiousness of HIV	1.4	5.5
Whether less worried about HIV because of new drug therapies	0.9	5.1
Whether tired of monitoring sexual behaviour	0.5	4.2
Whether hard to maintain commitment to safe sex	0.7	4.2
Whether safe sex takes a lot of effort	0.9	4.0
Whether got used to risk of HIV	2.8	5.4
Survey behaviour questions	Web	P&P
Whether completed gym survey	0.4	2.5
Whether completed 2002 web survey	0.5	2.7
Whether completed 2003 clinic survey	1.8	2.5
Relationship questions	Web	P&P
Whether has boyfriend	0.0	1.4
Boyfriend's HIV status	1.2	0.3
Where met boyfriend	1.2	0.0
Internet use questions	Web	P&P
Where has access to Internet	0.0	1.3
Hours on Internet – past week	1.2	4.5

Proportion of item nonresponse (%)		
Internet use questions (continued)	Web	P&P
Whether used online cruising – past year	0.4	2.1
Where accessed Internet for online cruising	0.5	1.1
Emotional questions	Web	P&P
Whether felt depressed – past 3 months	0.2	4.0
Whether had suicidal thoughts – past 3 months	0.5	7.0
Whether felt lonely – past 3 months	0.5	4.4
Knowing men with HIV questions	Web	P&P
Whether knows gay/bisexual men with HIV	0.0	21.1
Whether diagnosed in past year	0.9	2.4

Appendix 11



City University
London

Information about the Project for Interviewees

What is the interview about?

The interview is an opportunity for you to tell us about your experience of taking part in a research project.

As a participant in the Health, Sex, Internet project, you recently filled in an online questionnaire and have just taken part in an in-depth interview. We are interested in your experience of taking part in the study, and would like to talk to you about it.

We would like to talk to you about your experiences of the following:

- use of the internet and other communication technologies
- taking part in the interview for the Health, Sex, Internet project
- taking part in the Health, Sex, Internet online survey
- taking part in other research

We will not ask you about the answers that you gave in the online survey or in the in-depth interview for the Health, Sex, Internet project. No link will be made between the interview that you have just had with Mark and your interview with Alison, which will be about taking part in research.

Using the Internet in social and behavioural research is still relatively new. What you have to say will help to shape researchers' understandings of how to make the most effective use of the Internet for conducting research.

How long will it take?

The interview will take 1 to 1½ hours.

Who will conduct the interview?

The interview will be conducted by Alison Evans. Alison is a PhD student at City University. She is funded by the Economic and Social Research Council to look into the use of the Internet for social and behavioural research.

Appendix 12

Informed Consent Form (face-to-face respondents) Interview Volunteers

Project: Participating in qualitative interviews

I agree to take part in the above City University research project. I have had the project explained to me, and I have read the explanatory sheet "Information for Interview Volunteers", which I may keep for my records. I understand that agreeing to take part means that I am willing to:

- be interviewed by the researcher;
- allow the interview to be audiotaped.

Data Protection

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.

I understand that the information I provide will be held and processed for the following purpose:

- to be used in a PhD thesis and/or in conference reports and/or in publications related to this research.

I agree to City University recording and processing this information about me. I understand that this information will be used only for the purpose set out in the explanatory sheet "Information for Interview Volunteers" and my consent is conditional on the University complying with its duties and obligations under the Data Protection Act 1998.

Withdrawal From Study

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way.

Further Research

I agree that the interviewer may contact me again about taking part in further research for this study (please tick the box to indicate whether you agree)

☐ Yes

☐ No

Name:

Signature:

Date:

Informed Consent Form (online respondents)

Interview Volunteers

Project: Participating in qualitative interviews

I agree to take part in the above City University research project. I have had the project explained to me, and I have read the explanatory sheet, "Information for Interview Volunteers", which I may keep for my records. I understand that agreeing to take part means that I am willing to:

- be interviewed by the researcher;
- allow a copy of the interview to be made.

Data Protection

I understand that any information I provide is confidential, and that no information that could lead to the identification of any individual will be disclosed in any reports on the project, or to any other party. No identifiable personal data will be published. The identifiable data will not be shared with any other organisation.

I understand that the information I provide will be held and processed for the following purpose:

- to be used in a PhD thesis and/or in conference reports and/or in publications related to this research.

I agree to City University recording and processing this information about me. I understand that this information will be used only for the purpose set out in the explanatory sheet "Information for Interview Volunteers" and my consent is conditional on the University complying with its duties and obligations under the Data Protection Act 1998.

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Further Research

I agree that the interviewer may contact me again about taking part in further research for this study (please tick the box to indicate whether you agree)

☐ Yes

☐ No

Please tick the box to indicate that you agree to take part in the above project: ☐

Name:

Date:

Appendix 13

Participating in qualitative interviews topic guide

(i) Voluntary (ii) Anonymous (iii) Unconnected to Mark's (iv) Confidential
Record of interview?
Anonymised quotations?
4 areas:

Background Info

Which area of London do you live in?	Stay in full-time education after 16 years old?
Are you working at the moment?	How many years did you stay in full-time education after you were sixteen?
How old are you?	

1 General use of Internet and communication technology

- | | |
|--------------------------------------|--|
| 1. When & how started with Internet? | 4. Advantages / Disadvantages & Likes / Dislikes about email, chat, texting, phoning |
| 2. Internet nowadays? | |
| 3. Use of chat | 5. Issues of security with email, chat, texting, phoning |

2 Interview with MD

- | | |
|---|--|
| 1. Motivation for participation? | 7. Ability to express self – frustrations? |
| 2. Travel arrangements – convenience of arrangements – first impressions? | 8. Rapport? |
| 3. Anonymity and confidentiality? | 9. Formal / informal? |
| 4. Expectations, concerns, apprehensions? | 10. How long did it take? |
| 5. Pace, time to express self? | 11. Positive aspects of interview? |
| 6. Relaxed and at ease? | 12. Negative aspects of interview? |
| | 13. Suggestions? |
| | 14. Overall impression? |

3 Internet and HIV Survey

- | | |
|--|--|
| 1. Motivation for participation? | 6. Appropriate questions and options? |
| 2. Previous surveys? | 7. Length and appearance of questionnaire? |
| 3. Survey completion – where? alone? logged on to other sites? convenient? | 8. Speed of completion? |
| 4. Anonymity and confidentiality? | 9. How long did it take? |
| 5. Expectations, concerns, apprehensions? | 10. Suggestions? |
| | 11. Overall impression? |

4 Other Research

Interviews (including online and phone)

As above for specific examples & compare

Did interviewer read out qus or less structured?

Other Self-Completion Surveys

As above for specific examples & compare

5 Debrief

Anything you'd like to ask me?

Confirm (i) Voluntary (ii) Anonymous (iii) Unconnected to Mark's (iv)

Confidential

Anonymised quotations?

Contact in future about further research? Summary of findings?

Appendix 14

Index of themes used in framework analysis

1 Modes of communication

- 1.1 General use of Internet
- 1.2 Use of email
- 1.3 Use of telephone
- 1.4 Use of texting
- 1.5 Face-to-face communication

2 Aspects of communication

- 2.1 Playing games
- 2.2 Honesty

2 Privacy

- 3.1 Technical issues of privacy
- 3.2 Personal censorship
- 3.3 Privacy of self
- 3.4 Privacy of others

3 Chat

- 3.1 Pattern of chat usage
- 3.2 Chat partners
- 3.4 How they use chat
- 3.5 Use of the written word
- 3.6 Time issues in chat
- 3.7 Multi-tasking
- 3.8 Immediacy of chat
- 3.9 Disinhibition in chat
- 3.10 Interpretation of chat

4 Internet and HIV interview

- 4.1 Self expression in I&HIV interview
- 4.2 Nature of interaction in I&HIV interview
- 4.3 I&HIV interviewer
- 4.4 Self exploration in I&HIV interview
- 4.5 Content of I&HIV interview
- 4.6 Practicalities of I&HIV interview
- 4.7 What respondents got out of I&HIV interview

5 My interview

- 5.1 Practicalities of my interview
- 5.2 Purpose, process & outcome of my interview

6 Interviews - other

- 6.1 Recording interviews
- 6.2 Distractions in the interview
- 6.3 Other interviews

Appendix 15

Data coded under “Self expression in the Internet & HIV interview”

- OLC1 See *disinhibition in chat*; prefers I don't use his real name so that conversation can be totally anonymous; interview was good, enjoyed it - thinks he said everything he wanted to say
- OLC2 Was at home so no pressure & able to get response across; see *use of written word*; see *disinhibition in chat* felt he could be frank, open, honest; didn't think talking abt scenarios gave representative picture of self but didn't express that in interview; one line qu & answer in chat - but he would probably behave the same in f2f
- OLC3 Felt neither inhibited nor disinhibited, “absolutely!” relaxed & able to express self; no problems talking abt self, “nothing to hide particularly and it is anonymous anyway”
- OLC4 More able to answer qus truthfully and frankly without embarrassment of eye to eye contact; writing makes you think more abt what you're going to say; didn't feel intimidated by personal qus cos interviewer doesn't know what he looks or sounds like; he'd done the things Mark asked abt so why not share?' +ve aspect of interview was “being able to go into detail about some very personal subjects without any uncomfortable feelings”; rough idea of interview content but no problem with that
- OLC5 No hangups talking abt sex; didn't feel, was not made to feel uncomfortable; chat maybe slightly easier than f2f - more at ease at home but wouldn't change answers; sexually based interview only paints certain side to OLC5 see *other research*

- OLC6 Mark picked up on points before he'd finished - got confusing - wouldn't always feel he got everything across; able to clarify at end; felt pressured writing in real time - see time issues in chat; see use of the written word; interviewee surprised by direction of interview and writing has greater weight – “i dont like to just write any old drivel!”; anonymity allows him to say things maybe he wouldn't f2f - sex v embarrassing for most to talk abt f2f; “i would feel more 'comfortable' talking to a ma, and a gay man at that...” (see lines 248-59)
- F2F1 Said what he wanted to say; said things to shock, to get a reaction
- F2F2 Was there of own free will; didn't have any qualms talking about the subject; raised points of interest to him at the end - no opportunity to talk abt in interview & didn't know how valuable they'd be to the study
- F2F3 When the tape's switched on “you kind of feel like you're on Newsnight or something”; Mark would challenge him on things, make him think quite hard - once or twice it, “wouldn't put my back up but ...”; didn't feel as comfortable with straight, male psychologist (see lines 289 - 293); “I'm making an assumption that Mark's gay, but, yeah, I think it's just that”; felt he could talk openly & candidly without f2f embarrassment
- F2F4 He recalled things after the interview that he should have said but didn't remember; concerned in the back of his mind abt understanding words and answering questions but usually gets it right
- F2F5 Felt he was able to complete missing elements from online questionnaire - didn't know if that was reciprocal; getting to know you start of session was good launch pad for later questions; “he'd kind of, sort of throw me a bone you know, 'tell me about this ... scenario' ” ; challenged Mark on his theory; would have been slightly more uncomfortable having HSI discussion with

AE - might have tried to shock straight man; was truthful with Mark's questions - partly cos its sacrosanct

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