
Sensitive Topics, Survey Nonresponse, and Considerations for Interviewer Training

Eileen M. O'Brien, MS, Michele C. Black, PhD, MPH, Lisa R. Carley-Baxter, MA, Thomas R. Simon, PhD

Abstract: This paper discusses current challenges in achieving higher survey participation rates in random-digit-dial telephone surveys and proposes steps to address them through interviewer training to avoid refusals. It describes features of surveys that contribute to respondent reluctance to participate and offers a brief overview of current refusal aversion training methods to reduce nonresponse. It then identifies what challenges that unique features of random-digit-dial telephone surveys on sensitive topics might contribute to nonresponse. Recommendations are then proposed for changes in refusal aversion training, standard survey introductions, and informed consent procedures. Finally, further research is called for to identify which methods best balance the need to improve response rates with respondent safety and privacy in surveys with sensitive questions.
(*Am J Prev Med* 2006;31(5):419–426) © 2006 American Journal of Preventive Medicine

Introduction

Survey nonresponse threatens the validity of a probability sample survey when the reasons for nonparticipation are correlated with key survey measures. For example, if frequent travelers disproportionately feel they are too busy to participate in a survey about travel behavior, the population estimate for number of trips would have a downward bias. This paper begins by defining respondent “reluctance” to participate in a survey, and describes special efforts to train interviewers to prepare for, detect, and respond to it to avoid refusals. A discussion follows of challenges and recommendations for adapting refusal-aversion training to random-digit-dial (RDD) telephone surveys on sensitive topics. Finally, this paper concludes with considerations for future research that would support more successful outcomes in the most difficult survey environment—RDD telephone surveys of special populations on sensitive topics.

Survey Participation

In the first seconds of a telephone survey, respondents routinely and naturally express reluctance. This is where interviewer behavior and success in addressing it is most variable. To discuss interviewers' influence on

survey participation, reluctance here excludes non-negotiable “hard” refusals and immediate telephone hang-ups and includes all signs by which a respondent may indicate unwillingness to proceed during the first interactions with the interviewer. The goal of refusal-aversion training, then, is to teach interviewers how to better address cases where nonresponse can be avoided.

It is important to note response factors over which an interviewer has little or no control. For example, it is typically more difficult to gain participation in densely populated, blighted or high-crime areas; among single-person households such as young males or older women living alone; over the telephone, and so on.^{1–3} Thus, some nonresponse can be attributed to features of the population, societal factors, or study design. Still, research has shown that interviewers vary in how they conduct themselves in initial interactions in ways that do affect participation. Refusal-aversion training, therefore, capitalizes on that understanding in order to improve specific skills to increase response rates. Toward that goal, there has been renewed emphasis on understanding which interviewer characteristics most influence survey participation, including sociodemographic factors (e.g., age, education, gender, experience), psychological factors (e.g., perceptions and expectations), and behavioral factors (e.g., social and conversational performance). Interviewers' education level, race/ethnicity, and personality have little impact.³ Female interviewers often have higher response rates than male interviewers, but gender differences disappear after controlling for experience.⁴

Characteristics that have the biggest effect on participation are interviewer tenure, attitudes, and expectations. Experienced interviewers do have higher coop-

From the Statistical Research Division, U.S. Census Bureau (O'Brien), Washington DC; National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (Black, Simon), Atlanta, Georgia; and RTI International (Carley-Baxter), Research Triangle Park, North Carolina

Address correspondence and reprint requests to: Eileen M. O'Brien, Energy Information Administration (EI-63), 1000 Independence Ave. SW, Washington DC 20585. E-mail: eileen.obrien@eia.doe.gov.

eration rates, especially in difficult-to-enumerate areas.⁵ Their acceptance of the survey topic, burden, and sponsorship also appear to increase respondent participation overall and for individual survey items.^{6,7}

Refusal-Aversion Training

Refusal-aversion training has taken a variety of forms. Survey organizations have always prepared interviewers to address reluctance through two mechanisms: pre-emptive and prescriptive messages. Pre-emptive messages target anticipated concerns and often appear in standardized survey introductions or pre-survey letters. Prescriptive messages are provided in written form or embedded in survey instruments through help screens for frequently asked questions (FAQs).⁸ Interviewers are usually taught how to administer these scripts in survey-specific training. Over time, however, the variety and mode of training to help interviewers avoid refusals has grown more complex for three reasons: improvements in knowing which training methods best serve adult learners; increased facility brought about by new technologies to vary, replicate, and reinforce certain concepts; and a better understanding of what drives early social interactions between interviewer and respondent.

Because adult learners vary in how they absorb complex content, training programs do better when multiple training methods are used to convey needed skills and project information. Some concepts are better served by more active methods such as group or paired exercises, round robins, demonstration, and role playing than by lecture, which is generally reserved for introducing background information or study concepts. Adult learners also prefer to have a detailed, printed copy of a study-specific training manual that includes study background, project-specific protocols, confidentiality procedures, questionnaire content, and refusal-aversion and refusal-conversion protocols. Overall, a variety of training methods are used to increase the likelihood that all trainees' learning styles are accommodated, that key concepts are reinforced, and that the appropriate method is chosen to promote specific skills. For example, refusal-aversion training has moved toward more interactive training methods because they help interviewers practice and master scenarios they would experience in data collection.

A breakthrough in understanding factors that contribute to response rate differences among interviewers and addressing them in the classroom came from analyzing observations and audiotapes of doorstep interactions.^{9,10} Although interviewers were meeting with the same general forms of reluctance, less successful interviewers were not prepared or confident in addressing respondent concerns. Two conversational skills appeared to help interviewers: (1) ability to tailor their strategy based on perceptible cues from the respondent

and the environment, and (2) ability to maintain the interaction long enough to search for more cues by which to invoke tailoring. Tailoring, which means reading cues and adapting one's conversational turns accordingly, happens naturally in ordinary conversation; this is more difficult to do in survey introductions. When tailoring and maintaining interaction skills were systematically taught to interviewers, however, they were better at using available information to prepare for and adapt to respondents' concerns.¹¹⁻¹⁵

Efforts to use this new understanding of initial interviewer-respondent interactions in the classroom have varied in mode, length, and breadth. For example, some versions include automated audio delivery of a sample of respondent concerns to which interviewers give tailored responses.¹⁶ This offers more consistent and realistic practice for hearing and tailoring responses to FAQs. A more comprehensive training regimen developed by Groves and McGonagle¹¹ includes a complex 8-hour training module composed of lectures and increasingly difficult interactive exercises that teach a five-step refusal-aversion process: (1) prepare for the call, (2) engage in active listening, (3) diagnose the main concern, (4) quickly identify a response, and (5) immediately deliver that response in a clear, brief manner. After interviewers master these skills, they are tested further when facilitators randomly call on them with a rapid battery of concerns and interdependent objections. Controlled experiments and quantitative studies of the Groves and McGonagle¹¹ protocol have demonstrated its effectiveness in a variety of personal interview surveys.¹¹⁻¹³ In these experiments, cooperation rates among interviewers who received the training were between 3 and 16 percentage points higher than their pre-training base rate or that of interviewers with standard training. Importantly, the effect did not erode over time, a common problem with standard methods relying on FAQs or less-intensive, unrealistic exercises.¹³ Further evidence is needed to determine whether the Groves and McGonagle¹¹ approach has merit in telephone surveys.^{14,15}

Even without experimental controls, adaptations of new refusal-aversion training methods that teach tailoring offer information which is useful to share with the field. First, the most successful applications now talk about a refusal-aversion **process** rather than a list of prescriptive strategies. Second, refusal-aversion training often replaces a finite list of FAQs with a set of common thematic concerns. For example, rather than a list of 10 most frequently asked questions, interviewers might be trained to recognize 10 themes of concerns and learn to recognize a myriad of examples for each. A "bad timing" concern might be expressed directly by "I'm on my way out," "I'm making dinner," or indirectly by sounds of a party going on in the background. Variation in themes of concerns is apparent in the literature, but there is

more in unpublished practice.^{11–13} Some themes are universal, such as “I’m too busy” and “I’m not interested,” while others may represent unique, salient survey features that cause respondents concern. For example, health survey respondents routinely have questions about authorization forms and informed consent protocols, while census respondents have questions about mandatory reporting. Third, these new refusal-aversion training methods often begin with more traditional lecture and written exercises to ensure that the process and thematic concerns are mastered. Depending on resources, a variety of interactive, often progressive exercises follow. For example, they may begin with paired exercises to practice thematic concerns and effective behaviors, followed by triads where roles rotate among interviewer, respondent, and observer. Training usually concludes with rapid, interdependent role-playing exercises practiced at speed, a difficult respondent (facilitator), and the trainee.

Challenges in Adapting Refusal-Aversion Training to RDD Telephone Surveys

The decision to participate in a survey is embedded in a social interaction where roles and expectations of the speakers are negotiated in the short conversation before the core interview begins.¹⁷ The same communication features that depress response rates in RDD telephone surveys create challenges in applying new refusal-aversion training methods to initial interactions between interviewer and respondent. For example, unlike an in-person interview where a visit is preceded by an introductory letter in the mail, an RDD telephone respondent’s experience often begins with a “cold call.” Also, the reduced “channel capacity” of telephone communication restricts conversation to aural cues, and verbal and often ambiguous paralinguistic utterances such as ums, ahs, and silence, any of which could signal an implied “go ahead” or an imminent hang-up.^{17,18} Finally, the length of time in which participation is decided is much shorter in telephone than in personal interviews. Thus, the first few seconds are intensely important. Hoover and Shuttles¹⁹ found that tailoring could only occur if the telephone interview survived the first 6 to 8 seconds of the interaction. To be successful, therefore, an interviewer must quickly overcome a respondent’s knowledge gap, and be ready for more varied, subtle, and abrupt signs of reluctance. There are fewer chances to recover if signs are missed or mistakes are made.

Another feature that imposes limitations on the teaching and application of tailoring in RDD surveys is the standardized survey introduction. Standardized introductions in the initial conversation between inter-

viewer and respondent lead to the following hazards to effective communication and participation:

1. Standard introductions can disable an interviewer’s natural “voice” when a respondent is trying to recognize and trust the caller.
2. They consume valuable communication space where an ordinary caller would normally address the initial concerns of the receiver.
3. They often include explicit requests to proceed before a respondent has adequately understood the caller and determined whether she or he trusts the caller’s purpose. For example, a standard introduction is longer and denser than ordinary telephone introductions and might conclude with, “Do you want to participate?”

Overall, less successful interviewers typically rely too much on standard introductions to engage respondents. They have difficulty noticing and addressing ad hoc concerns that result from features of the mode and the introduction, appear less attentive, and are more likely to be refused.^{9,20} Because respondents frequently interrupt, challenge, or alter the flow of the introduction,^{17,21} telephone interviewers who can apply adaptive behavior are more likely to achieve participation.

Recommendations for Refusal-Aversion Training in RDD Telephone Surveys

In spite of the communication limitations, telephone surveys may also benefit from refusal-aversion training that teaches tailoring techniques,^{11,12,15} but only Mayer and O’Brien¹⁴ showed statistically significant results in an RDD context. There, mean interviewer-level cooperation rates for initial contacts were 3 to 7 percentage points higher among trained interviewers than interviewers who received no training. Trained interviewers felt they were better listeners, improved their ability to identify the true source of reluctance, and were addressing reluctance more directly, succinctly, and confidently. The unique features of initial interactions in RDD telephone surveys, however, suggest several changes in refusal-aversion training method for this mode.

First, survey designers should back away from imposing lengthy, complex scripts on the initial interactions between the interviewer and respondent. Imposing strict behavior and introductory scripts on interviewers contradicts the conversational expectations of respondents and introduces serious impediments to gaining cooperation in telephone surveys. It may also diminish their ability to provide true informed consent. The more that prescribed protocols deviate from ordinary telephone interactions, the easier respondents find it to disengage and justify hanging up. Experiments where the topic and length of scripted introductions were varied have shown little effect on survey participation

rates,^{7,22} but when interviewers were allowed to use a conversational style, rates were higher.²³ In that study, interviewers crafted their own introductions from a list of required elements, for example, “your name, company name,” and could use them in any order. In refusal-aversion training, trainers would have interviewers practice this technique and monitor it to ensure that they were able to cover all required elements before the core interview. Because respondents often interrupt interviewers during introductions, tailoring practice would include having interviewers vary the timing and length of required elements according to the specific concerns of a practice “respondent.”

Second, the explicit yes–no question form of asking for permission to continue should be removed from most initial introductions in RDD surveys. An important exception for sensitive topic surveys is discussed in the next section of this paper. Generally, however, requesting permission to continue is a common way to obtain informed consent, the place where a respondent can decide if participation is in their best interest. Placing it in the initial conversation between interviewer and respondent should be avoided because it may encourage nonresponse for reasons unrelated to consent. It prematurely draws attention to the interviewer’s primary objective (proceeding to the core interview), and diminishes the importance of the respondent’s concerns and objectives (to identify the caller and the purpose). It interferes with the interviewer’s ability to search for and address sources of reluctance. It is extremely rare for respondents to spontaneously and explicitly grant an interview so early (less than 1%)^{3,17}; thus, direct attempts to obtain consent may contradict conversational norms. Dialogues naturally move forward in ordinary telephone conversation anyway unless one party objects. Thus, the lack of objections may signal an implicit go-ahead, particularly when basic introductory administrative survey questions are at hand.^{17,24} Furthermore, if interviewers are able to build rapport during preliminary administrative questions, respondents may be more attentive to and better able to absorb the informed consent information provided and better equipped to make an informed decision about participation. In addition, respondents are likely to feel that it is more conversationally appropriate to discuss participation right before the core interview. In refusal-aversion training and for the protection of research participants, however, interviewers should also practice making distinctions between implicit go-aheads and important signs of reluctance. For example, a respondent who appears willing but is clearly distracted (evidence of background noise and activities) may need to reschedule an interview.

Third, interviewers should be taught to notice and adapt to subtle cues of agreement, reluctance, and refusal in initial telephone interactions. In studying taped telephone introductions, researchers observed

that less-successful interviewers often missed or ignored subtle, perceptible signs of reluctance from respondents who ultimately refused.^{17,19,20,25,26} Refusers were more likely to express hesitation for a second or more, issue long delays to pre-interview questions (e.g., telephone number verification) or show early resistance to completing the interview by answering questions in formats different from that requested. For example, they might answer “Yes, this is a residence,” instead of verifying their telephone number. The tone and pace of answers, such as a suspicious tone or hesitation when answering, also offer evidence of reluctance.^{17,19} In recent qualitative work, Hoover and Shuttles¹⁹ found that interviewers with cooperation rates above 70% derived cues from the initial “hello” such as mood, gender, relative age, and so on.²⁷ For example, if the respondent sounded sleepy, the interviewer might tailor their first interaction to use a lower, quieter voice. Evidence from another study also showed that cooperation was sensitive to the tone, inflection, and pace with which the interviewer introduced herself or himself and the survey.¹⁸

To improve interviewers’ ability to detect and respond to subtle cues over the telephone, refusal-aversion training should mimic features of the RDD mode. In classroom exercises, role-playing respondents would exhibit some combination of these behaviors: interruptions; subtle signs of reluctance such as pauses, hesitation, and answers that do not meet the interviewer’s objectives; evaluative tones or comments; vague cues, such as ums, ahs, and silence; escalating emotions; interdependent conversational turns of varying length to signal increased or decreased interest; abrupt, unannounced switching of respondents during the introduction; and long pauses before the initial hello to mimic the delay caused by automated dialing systems used in some telephone centers. To best mimic production conditions, final interactive exercises should be done via telephone.

Fourth, because respondents have more difficulty identifying the caller and their purpose over the telephone, interviewers should be given extra practice in addressing concerns about legitimacy, privacy, and confidentiality. Respondents often mistake survey calls for telemarketing solicitations. Although the survey introduction explains a different purpose, other features may convey the more familiar message of a telemarketer: the caller is a stranger; the call is unexpected; background noise from a call center may be apparent; the caller takes a long, complex, and scripted conversational turn; and the caller ignores the respondent’s concerns, which violates their expectations about ordinary telephone introductions. Lengthier, elaborate introductions cannot solve this problem,²² but in line with the “conversational” literature, simply repeating or elaborating on the affiliation of the survey

sponsor would indirectly address and contradict the “telemarketer” misnomer.

Ultimately, survey interviewers should not sound like telemarketers in what they say and how they say it. Toward this goal, refusal-aversion training promotes responsive conversational interactions motivated by an understanding of the social purpose of conversation. In studying the impact of the telephone on conversation, Hopper²⁴ suggested that there are certain conversational behaviors an interviewer may control (beyond tone and inflection) to improve the quality of initial interactions: (1) using shorter turns to promote conversational interaction, (2) paying attention to the rhythm of early interactions and mirroring them, (3) working through early problems rather than assuming the first diagnosis of a problem is correct, and (4) if stumped, keeping the conversation going by asking an open question, and encouraging the respondent to further elaborate on his or her concerns. These are all accounted for in the tailoring and maintaining interaction protocols of most refusal-aversion training.

Training that helps interviewers address hidden, changing, and complex concerns should improve their success in dealing with “cold calls” while still respecting the respondent’s ultimate autonomy to make decisions about survey participation. Studies of initial telephone interactions suggest that good interviewers can prepare for and identify subtle cues about reluctance in RDD surveys, and use them to produce tailored responses. These skills require only slight modifications to existing refusal-aversion training programs. Because interviewers may initially have difficulty distinguishing between the adaptive skills needed to gain cooperation and the prescriptive skills needed to conduct an interview,² trainers must take care to clearly demonstrate when each type of behavior is appropriate.

Considerations for Refusal-Aversion Training in RDD Studies on Sensitive Topics

Topic sensitivity is an important and complex issue in telephone surveys. If interviewers believe that a topic (e.g., alcohol abuse, intimate partner violence, suicidal ideation) is too personal and, in turn, directly or indirectly convey their own reluctance when administering the survey, the quality of the data collection may be compromised. Interviewers’ attitudes about a survey and their expectations about success in the interview have been shown to affect three key measures of quality: the overall unit response rate, the item response rate, and response accuracy.^{7,27,28}

Because refusal-aversion training generally addresses unit response, it focuses on factors that affect initial considerations of the survey request. Survey-specific training usually addresses concerns that respondents may have about specific questionnaire items because

they are more likely to occur during the actual interview. This may be less true in sensitive topic surveys because the content is described in consent protocols and survey introductions. Respondents’ concerns could be heightened at a time when they are deciding to participate, which would affect unit response. Therefore, refusal-aversion training for surveys should incorporate examples of respondent concerns about sensitive questions or modules. In this way, interviewers’ attitudes and behaviors that affect their ability to gain participation can be identified, monitored, and addressed.

Attitudes that affect data collection should be identified in all phases of interviewer development: recruitment, selection, training and monitoring. Because interviewers’ attitudes and expectations do affect participation rates,^{6,7} training should ensure that interviewers become more comfortable with the survey topic. Educating interviewers about what to expect can reduce the stress of recruiting for and conducting such surveys. For example, respondents in “affected” households (households that have some experience with the survey topic) and “unaffected” households may have concerns that differ in surprising ways. Affected households may be eager to participate for personal or altruistic reasons such as having someone to talk to or helping others who have had similar experiences. On the other hand, individuals from unaffected households may share interviewers’ concerns and express reluctance about the survey.

When possible, interviewers should be provided with objective information about respondents’ reactions in past surveys to demonstrate the ease with which a sensitive topic survey can be administered. For example, the frequency and timing of interview terminations and question-specific refusal rates from prior surveys can indicate relative sensitivity and respondent willingness to answer the questions. Black et al.²⁹ found that questions related to income, race, and ethnicity in RDD telephone surveys had much higher question-specific refusal rates (up to 15%) than did questions related to forced sex (0.3%). In a survey covering a wide range of injury-related issues (22 detailed modules included questions on falls, helmet use, dog bites, family violence, sexual violence, suicidal ideation, and others), termination rates were similar across all topics, with the highest termination rate related to the module about falls among the elderly (0.4%). Sharing these performance statistics should temper interviewer concerns and raise their expectations about gaining cooperation.

In refusal-aversion training for sensitive topic surveys, trainers must help interviewers balance the need to gain participation with understanding the current situation of a respondent. This may be easier to impart for studies in which an entire study population is at risk, but more difficult in general population studies where at-risk respondents are rare and occur at random. In

these studies, interviewers must stay alert to subtle cues about respondents' availability, safety, and privacy by ensuring that the interview takes place at an appropriate time and place. To practice this situation in training, trainers should randomly interject cases where a "respondent" is compromised, such as a case where an adult is shouting in the background or when a respondent seems to be especially nervous or troubled.

The World Health Organization has issued specific guidelines for research on intimate partner violence (IPV) that address the safety of respondent and interviewer, the protection of confidentiality; and the use of proper study designs to minimize distress and under-reporting.³⁰ Well-designed studies meet these requirements by implementing appropriate procedures, offering extensive and specialized training for interviewers, offering referral services to respondents, and providing short-term support for respondents and interviewers, as needed.

As discussed previously, informed consent scripts can influence response rates in surveys of sensitive issues because they make scripted introductions even more complex, dense, and difficult to administer and understand. Thus, informed consent may be best served by first satisfying a respondent's expectations for an ordinary telephone introduction. Recent literature regarding ethical and safe collection of research data on IPV offers many reasons for obtaining informed consent in a graduated manner.³⁰ In addition to safety and ethical considerations, it would allow time for the interviewer to build rapport and to gain the participant's trust. This may be the best context in which to ask for consent. If it is requested while a respondent is distracted, overwhelmed by the introduction, or still uncertain about the caller, it is unclear whether these dense scripts serve their informing purpose.

In practice, graduated consent could mean that some features of standard introductions and informed consent are postponed to help interviewers isolate and assess respondents' initial needs and concerns. For example, a basic level of consent could be required to verify the sample unit information and select a respondent, questions common to RDD survey introductions. A more comprehensive consent protocol that relates to the survey's purpose and specific topics would follow.

Consent obtained through rapport and trust should also reduce under-reporting of sensitive behaviors and minimize nonparticipation from posing yes-no permission questions prematurely. Yes-no questions are still needed; it is a matter of when and where. They should be used to assure respondent safety and ultimately to obtain informed consent.

General limitations of the RDD survey mode, however, suggest the explicit yes-no informed consent question should be asked where it is most relevant, not within the survey introduction, sampling and respondent selection sequence but just prior to the series of

sensitive questions. Safety and ethical concerns could be addressed in one question, for example, "The next questions are about physical violence. Are you in a safe place to answer these questions?" Careful studies of these methods are essential to assuring the collection of valid data and the well being of respondents.

It is important for interviewers to understand that victims have the capacity to and are best equipped to evaluate their personal safety.^{32,33} Nonetheless, refusal-aversion training should provide examples to help interviewers identify when respondents may be in jeopardy. Defining and practicing a protocol for dealing with potentially unsafe situations would reduce anxiety resulting from these concerns. It would also demonstrate institutional support for the interviewer and in turn "their" respondents, of whom interviewers are often protective anyway. Part of how interviewers cope with difficult cases can be mitigated through topic training, but support services may also be needed during call shifts. In surveys about violence and suicidal behavior, interviewers themselves may be vulnerable. Listening to respondents' experiences can be more distressing than managers and interviewers can anticipate.³⁴ The first signs of this may be apparent in refusal-aversion training, but weekly meetings may be needed to monitor interviewer "burnout" arising from such interviews. The refusal-aversion process and response rates will be served to the extent interviewers are prepared and receive support for difficult cases in sensitive topic surveys.

Conclusion

Respondents react in fairly predictable ways to the initial request to participate in a telephone survey because telephone conversations are common experiences. Most listen to an interviewer's entire introduction.³⁵ Other respondents immediately agree to be interviewed, ask questions, express concerns, hesitate, or simply hang up. Refusal-aversion training accommodates both systematic (reasoned) and heuristic (reflexive) processes by which a respondent may react to the initial request because it incorporates the concepts of tailoring and maintaining interaction. These concepts derive from the theory that an introduction is a series of interdependent events in which the interviewer has the unique purpose of engaging cooperation on behalf of a public health or policy need. Some refusal-aversion training that departs from these tenets has not shown response rate improvements. Further research, therefore, should test which implementations serve what purposes within a study's resources. Cost-benefit analysis is needed to demonstrate how much response rates would need to rise to justify the outlay of additional training resources. Research might show, however, that the survey process and informed consent are better served by preparing interviewers for the dynamic nature of initial interactions through realistic, theory-

driven and experimentally tested refusal-aversion training methods.

The most immediate need of research on teaching interviewers to avoid refusals is to understand how to maintain training success while adapting it to various surveys, organizational environments, and resource constraints. To further inform and improve these methods, new efforts to capture contact history information can provide data about successive attempts to gain cooperation from a sample household, a richer understanding of shifting respondent concerns, their accessibility, and successful interviewer strategies to engage cooperation. Such data would be particularly useful in informing institutional review boards about how interviewers and respondents perceive and respond to sensitive topic surveys.

Future research should address the comparative performance of dense, scripted introductions versus conversational, graduated consent techniques, how well each serves their informing purpose, and how well interviewers are able to assess and balance risks to the respondent against achieving the highest participation rates possible. Qualitative research can identify which pieces of these introductions meet their intended objectives. For example, researchers might find that stating the affiliation of a well-known and respected sponsor is sufficient and supersedes many other concerns about content, legitimacy, and privacy. Research that helps interviewers' meet the conversational demands of their first interactions with telephone respondents would serve several data-quality and informed-consent goals, including improving interviewers' ability to address the initial concerns of a respondent called at random, reducing interviewer and respondent anxiety about sensitive questions, assuring survey organizations that informed consent is understood, properly assessing a respondent's safety to participate, and monitoring factors that affect the overall quality of participation and the data provided.³¹

We gratefully acknowledge the U.S. Census Bureau's support of this work in the form of Eileen M. O'Brien's time and the helpful comments offered by Frauke Kreuter (Joint Program in Survey Methodology, University of Maryland), and Ashley Landreth and Yuling Pan (U.S. Census Bureau).

This information is distributed solely for the purpose of pre-dissemination peer review under applicable information quality guidelines. It has not been formally disseminated by the Centers for Disease Control and Prevention/Agency for Toxic Substances and Disease Registry. It does not represent and should not be construed to represent any agency determination or policy.

The findings and conclusions in this report are those of the authors and do not necessarily represent the views of the U.S. Census Bureau or Centers for Disease Control and Prevention.

No financial conflict of interest was reported by the authors of this paper.

References

1. DeMaio T. Refusals: who, where and why? *Public Opinion Q* 1980;44:223-33.
2. Groves R, Cialdini R, Couper M. Understanding the decision to participate in a survey. *Public Opinion Q* 1992;56:475-95.
3. Groves R, Couper M. *Nonresponse in household interview surveys*. New York: John Wiley, 1998.
4. Hox J, de Leeuw E. The influence of interviewer's attitude and behavior on household survey nonresponse: an international comparison. In: Groves R, Dillman D, Eltinge J, Little R, eds. *Survey nonresponse*. New York: Wiley, 2002:103-34.
5. Couper M, Groves R. The role of the interviewer in survey participation. *Survey Methodol* 1992;18:263-77.
6. Stevens J, Bailar B. The relationship between various interviewer characteristics and the collection of income data. In: 1976 Proceedings of the Social Statistics Section. Alexandria VA: American Statistical Association, 1976:785-90.
7. Singer E, Frankel M, Glassman M. The effect of interviewer characteristics and expectations on response. *Public Opinion Q* 1983;47:68-83.
8. Miller-Steiger D, Groves R. *Interviewer training techniques: current practice within survey organizations*. Ann Arbor MI: Survey Research Center, 1997.
9. Morton-Williams J, Young P. Obtaining the survey interview—an analysis of tape-recorded doorstep introductions. *J Market Res Society* 1987;29:35-54.
10. Morton-Williams J. *Interviewer approaches*. Aldershot, England: Dartmouth Publishing Company, 1993.
11. Groves R, McGonagle K. A theory-guided interviewer training protocol regarding survey participation. *J Official Stat* 2001;17:249-65.
12. O'Brien E, Mayer T, Groves R, O'Neill G. Interviewer refusal-aversion training to increase survey participation. In: 2002 Proceedings of the Survey Research Methods Section. Alexandria VA: American Statistical Association, 2002 (CD-ROM).
13. McGonaghy M, Carey S. What happens after ART? Results of two experiments designed to improve response rates at the Office of National Statistics, UK. Paper presented at the 60th Conference of the American Association of Public Opinion Research, Miami FL, May 12-15, 2005.
14. Mayer T, O'Brien E. Interviewer refusal-aversion training to increase survey participation. In: 2001 Proceedings of the American Statistical Association, Survey Research Methods Section. Alexandria VA: American Statistical Association, 2001 (CD-ROM).
15. Shuttles C, Welch J, Hoover J, Lavrakas P. The development and experimental testing of an innovative approach to training telephone interviewers to avoid refusals. Paper presented at the 59th Annual American Association for Public Opinion Research Conference, St. Petersburg FL, May 2002.
16. Cantor D, Allen B, Schneider S, Hagerty-Heller T, Yuan A. Testing an automated refusal avoidance training methodology. Paper presented at the 57th Annual American Association for Public Opinion Research Conference, Phoenix AZ, May 2004.
17. Maynard D, Schaeffer N. Opening and closing the gate: the work of optimism in recruiting survey respondents. In: Maynard D, Houtkoop-Steenstra H, Schaeffer N, van der Zouwen J, eds. *Standardization and tacit knowledge: interaction and practice in the survey interview*. New York: Wiley, 2002:179-204.
18. Miller P, Cannell C. A study of experimental techniques for telephone interviewing. *Public Opinion Q* 1982;46:250-69.
19. Hoover J, Shuttles C. The evolution and expansion of ART. Paper presented at the Annual Respondent Cooperation Workshop of the Council of Marketing and Opinion Researchers, Washington DC, September 2005.
20. Snijders G, Hox J, de Leeuw E. Interviewers' tactics for fighting survey nonresponse. *J Official Stat* 1999;15:185-98.
21. Couper M. Survey introductions and data quality. *Public Opinion Q* 1997;61:317-38.
22. O'Neil M, Groves R, Cannell C. Telephone interview introductions and refusal rates: experiments in increasing respondent cooperation. In: 1979 Proceedings of the Section on Survey Research Methods. Alexandria VA: American Statistical Association, 1979:252-5.
23. Houtkoop-Steenstra H, van den Bergh H. Effects of introductions in large scale-telephone survey interviews. In: Maynard D, Houtkoop-Steenstra H, Schaeffer N, van der Zouwen J, eds. *Standardization and tacit*

- knowledge: interaction and practice in the survey interview. New York: Wiley, 2002:205–18.
24. Hopper R. Telephone conversation. Bloomington: Indiana University Press, 1992.
 25. Dijkstra W, Smit J. Persuading reluctant respondents in telephone surveys. In: Groves RM, Dillman D, Eltinge J, Little R, eds. *Survey nonresponse*. New York: Wiley, 2002:121–34.
 26. Couper M, Groves R. Introductory interactions in telephone surveys and nonresponse. In: Maynard D, Houtkoop-Steenstra H, Schaeffer N, van der Zouwen J. *Standardization and tacit knowledge: interaction and practice in the survey interview*. New York: Wiley, 2002:161–77.
 27. Fowler F, Mangione T. *Standardized survey interviewing: minimizing interviewer-related error*. Newbury Park CA: Sage Publications, 1990.
 28. Moore M. Asking single women about their children: the Census Bureau's experience. In: 1976 Proceedings of the Social Statistics Section. Alexandria VA: American Statistical Association, 1976:619–23.
 29. Black M, Kresnow MJ, Simon T, Arias I, Shelley G. Telephone survey respondents' reactions to questions regarding interpersonal violence. *Violence Victims* 2006;21:445–59.
 30. World Health Organization. *Putting women's safety first: ethical and safety recommendations for research on domestic violence against women*. Geneva: Global Programme on Evidence for Health Policy, World Health Organization, 1999.
 31. Sullivan CM, Cain D. Ethical and safety considerations when obtaining information from or about battered women for research purposes. *J Interpersonal Violence* 2004, 19:603–18.
 32. Gondolf EW, Heckert DA. Determinants of women's perceptions of risk in battering relationships. *Violence Victims* 2003;18:371–86.
 33. Weisz A, Tolman RM, Saunders DG. Assessing the risk of severe domestic violence: the importance of survivor's predictions. *J Interpersonal Violence* 2000;15:75–90.
 34. Ellsberg M, Heise L, Pena R, Agurto S, Winkvist A. Researching domestic violence against women: methodological and ethical considerations. *Stud Fam Plann* 2001;32:1–16.
 35. Maynard D, Schaeffer N. Keeping the gate: declinations of the request to participate in a telephone survey interview. *Sociolog Methods Res* 1997;26:34–79.