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Reducing Income Nonresponse in a Topic-Based Interview¹

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Abstract: Previous research has demonstrated the considerable benefits of a "topic-based" interview structure for demographic surveys employing a household respondent (Moore and Moyer, 1998a, 1998b). As distinct from traditional person-based interviewing, which completes all questions about person 1, then recycles through the questions for person 2, and etc. for person 3 and all other household members, the topic-based approach is organized by topic: "Has John ever been divorced?" "How about Mary?" "And Tom...?" etc. Moore and Moyer (op cit) report that this structure increases interview efficiency, is preferred by both interviewers and respondents, reduces unit nonresponse, and in general reduces item nonresponse – with income items the notable exception. Loomis (1999) identifies the elevated tendency of topic-based interview respondents to produce blanket refusals for all income questions for all household members as the mechanism for the increase in income item nonresponse. This paper describes an experimental attempt to reduce item nonresponse to income questions in a topic-based interview, using a very brief statement immediately preceding the income questions to try to overcome respondents' reluctance to report by (a) acknowledging that such reluctance is not uncommon; (b) suggesting a cause of the reluctance (unfamiliarity) that avoids suggesting privacy concerns to those not troubled by them; and (c) emphasizing the valid, important, non-personal, statistical (i.e., nonthreatening) uses of the data. We find that use of this statement eliminates the income item nonresponse disadvantage for the topic-based interview treatment – and in some cases even reverses the effect. We also find positive opinions among interviewers about the topic-based design in general, and the introductory income statement in particular.

Keywords: questionnaire design; item nonresponse; persuasion; motivation; privacy

1. OVERVIEW

The "Background" section begins with a description of a "topic-based" interview structure, and summarizes the research evidence which has demonstrated its considerable benefits as compared to a more traditional "person-based" design. We also summarize research results concerning the primary disadvantage of the topic-based approach – its tendency to elicit more nonresponse to

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questions about income – and the suspected response mechanism underlying this phenomenon. We next go on to describe the general nature of our experimental intervention, designed to bring under better control income item nonresponse in a topic-based interview.

In section 3, "Research Design," we briefly describe the Census Bureau's Questionnaire Design Experimental Research Survey (QDERS) 2000 project which served as the vehicle for the present research. We present the essential design features of the QDERS project as a whole, but focus primarily on the design details of the person-based/topic-based income item nonresponse experiment and the specific nature of our experimental intervention. In this section we also present basic outcome measures from the implementation of the QDERS 2000 survey – response rates, completed interviews, etc.

Section 4 summarizes the key results of the experiment. We find clear evidence of a positive impact of the experimental treatment, such that across all nine income questions (concerning eight specific income categories plus a total income question) there are no instances of significantly greater nonresponse for the topic-based interview format. In fact, there is evidence of not only the elimination of the topic-based format's disadvantage but the *reversal* of that disadvantage. In all, seven of the nine observed nonresponse differences favor the topic-based approach, including three differences which are statistically significant. We also summarize in this section the results of a debriefing questionnaire administered to QDERS interviewers, which indicate an overwhelming preference for the topic-based approach, both in general and with regard to asking the income questions specifically. Interviewers also expressed positive sentiments concerning their comfort with the experimental intervention, and its perceived positive impact on respondents.

Finally, in section 5, we summarize our results and offer some thoughts as to their implications for additional research and for the design of household demographic survey questionnaires.

2. BACKGROUND

Previous research has demonstrated the considerable benefits of a "topic-based" interview structure for demographic surveys employing a household respondent (e.g., Moore and Moyer, 1998a, 1998b). As distinct from traditional person-based interviewing, which completes all questions about person 1 before asking questions about person 2 (and similarly for other household members), the topic-based approach is organized by topic: "Has John ever been divorced?" "How about Mary?" "And Tom ...?" etc. (Moore, 1996). Note that one benefit of the topic-based format is that it requires a full reading of the question text in its entirety only once, and generally needs only very brief probes to elicit responses for persons 2, 3, 4, etc. Another is its greater ability to register information volunteered about all household members – e.g., "No, none of us is Hispanic." See Moore (1996) and Fuchs (2000).

Moore and Moyer (1998a, 1998b) report that the topic-based structure increases interview efficiency, is preferred by both interviewers and respondents, reduces unit nonresponse, and in

general reduces item nonresponse; Couper et al. (1997) find similarly positive results. More recently, Fuchs (2000) has reported on research showing clear efficiency gains with the topic-based format, and, by implication, gains in terms of closer adherence to conversational norms, greater flexibility, and greater satisfaction among both interviewers and respondents.

A noteworthy exception to the generally positive outcomes reported with the topic-based format has to do with item nonresponse for income items. Moore and Moyer's (1998a) results show that, contrary to the general trend in item nonresponse rates, which tends to favor the topic-based approach, item nonresponse rates for income items administered in a topic-based format tend to exceed the comparable rates for a person-based interview. Moore and Moyer compared item nonresponse differences in a person-based/topic-based computer-assisted telephone interviewing (CATI) experiment among all items with "non-trivial" nonresponse levels (arbitrarily defined as 2% or greater), of which there were 43. Among those items they found 29 significant (at the $p < .10$ level or greater) interview treatment differences in nonresponse, 24 of which favored the topic-based design – i.e., the topic-based design produced significantly lower item nonresponse. However, none of the lower topic-based item nonresponse rates involved an income item, and, in fact, two of the five significant reversals of the general trend involved key income items. For both a "wage/salary income from an employer" item, and a total income item, nonresponse on a topic-based instrument significantly exceeded the comparable rate obtained with a person-based form. (See Moore and Moyer, 1998a, table 24.)

Loomis (1999) conducted additional research on the Moore and Moyer data. This research identified the likely mechanism for the increase in income item nonresponse: an elevated tendency of topic-based interview respondents to produce blanket refusals for all income amount questions for all household members. Loomis offers some speculation about possible explanations for the relative lack of success of the topic-based design at overcoming respondents' reluctance to provide income reports. Among the various possibilities, the leading contender derives from the most obvious feature of the topic-based format, which is the concentration of all of the income questions in one section of the interview. As Loomis notes, refusing to answer a survey question is a social act which to some extent violates conventions of politeness and cooperation; once those thresholds are overcome – once the "ice is broken" – subsequent refusals may be easier to express:

"Because the topic-based interview asks income questions sequentially, a refusal for the first household member might make the subsequent questions on income for other household members vulnerable to nonresponse as well. In contrast, it might be more difficult for a person-based respondent to refuse for multiple household members, because at several separate points in the interview, he or she would have to defy the norm of cooperation" (Loomis, 1999, p. 9).

This served as our primary model of the cause of the topic-based interview's greater susceptibility to refusal nonresponse for income items. We sought an intervention which would reduce the likelihood of an initial refusal to the income questions in a topic-based interview. To that end,

we developed a brief introductory statement, to be inserted immediately before the income series, which attempted to overcome respondents' reluctance to answer income questions. We focused on three goals: (a) acknowledging that such reluctance is not uncommon; (b) suggesting a relatively benign source of any felt reluctance (unfamiliarity), thus avoiding overt mention of privacy issues and reducing the likelihood of inadvertently raising privacy concerns among those not initially troubled by them; and (c) emphasizing the valid, important, non-personal, statistical (i.e., nonthreatening) uses of the data – i.e., the sorts factors which previous research (e.g., Gerber, Crowley, and Trencher, 1999) have found to be important "legitimizers" of requests for sensitive information. The final format of the introduction was as follows:

“The next questions are about income. We know that people aren't used to talking about their income but we ask these questions to get an OVERALL statistical picture of your community and the nation, NOT to find out about you personally.”

The remainder of this paper describes the design and results of an experiment which used this brief statement in an attempt to reduce item nonresponse to income questions in a topic-based interview. We begin in the next section with a description of the research design.

3. RESEARCH DESIGN

3.1 QDERS Design

The topic-based income reporting experiment was embedded in the Census Bureau's Questionnaire Design Experimental Research Survey (QDERS) conducted in August and September of 2000. QDERS is a research vehicle developed by Census Bureau staff for the purpose of conducting methodological research. The QDERS 2000 interview was conducted by telephone from the Census Bureau's Hagerstown, MD, telephone interviewing facility, using random-digit-dialing (RDD) sampling procedures (covering the continental United States), and a CATI instrument. The QDERS interview lasted approximately 15 minutes; one adult member of the interviewed household served as the household respondent. The interview staff consisted of 24 experienced telephone interviewers, split randomly into two groups. Interviews were conducted over a 4-week period. For the first two-week session, one group of interviewers was trained on and administered only person-based interviews, while the other group was trained on and administered only topic-based interviews. At the two week mark interviewers switched questionnaire formats. Interviewing on the first half of the sample stopped, a new, independent half-sample was released, interviewers were re-trained on the other interview format, and they administered that type of interview exclusively for the remainder of the interview period.

In all, interviewers completed interviews in 1,862 QDERS households, through which data were collected on 3,703 adults (age 15+). The 1,862 interviews represents a response rate of 42-52%.²

²Response rate calculations follow the guidelines of the American Association for Public Opinion Research (AAPOR, 2000). The lower estimate (42%) includes in the denominator all

Response, nonresponse, and refusal rate differences between the two instrument treatments were trivial and non-significant.

3.2 Other QDERS Experiments

QDERS 2000 was an omnibus-type survey covering a variety of topic areas. Incorporated into the QDERS interview were several other questionnaire design experiments in addition to the one that is the focus of this paper, including health insurance coverage (question ordering), household telephone expenses (question ordering), transportation (question wording, instrument structure), environmental issues (response scale formatting), and residential finance (question ordering) – see Rothgeb et al. (2000a and 2000b) for details regarding these other experiments. The other experiments were not crossed with the topic-based income reporting experiment. That is, respondents who were administered the topic-based question format for the income questions (which were the last questions in the survey) had received version "A" of the health insurance, telephone, transportation, environmental, and residential finance questions; those who received the person-based income questions (also last in the question sequence) had received version "B" of those questions. We note the possible confounding effects of these other QDERS experiments, but in fact we doubt strongly that the generally subtle differences they interposed into the questionnaire contexts for the person-based and topic-based interviews would have any impact on the results of the income reporting experiment.

QDERS 2000 also included an experiment whose primary focus was the evaluation of a special interviewer training program designed to help interviewers avoid initial refusals to participate in the QDERS survey. One-third of the QDERS interviewers received this special "refusal aversion" training at the initial training session; one-third received this training mid-way through the interview period; and one-third received no special training. The experimental training also touched briefly on avoiding refusals to income questions specifically. (See Mayer and O'Brien, 2001, for details concerning the QDERS 2000 refusal training experiment.) The training experiment was fully crossed with the person-based/topic-based income reporting experiment of primary interest here. Since it was applied equivalently to both treatment groups, we assume its impact on the outcome measures associated with the income reporting experiment can safely be ignored.

3.3 Design of the Person-Based and Topic-Based Interviews

The income items of relevance to this research were positioned at the end of the QDERS 2000 interview. Because the entire interview building up to the income questions was focused on

cases of unknown eligibility (i.e., never-contacted cases whose status as working residential telephone numbers is uncertain), which corresponds to definition "RR2" in the AAPOR guidelines. The higher estimate (52%) excludes such uncertain cases, in correspondence with definition "RR6." Both estimates include in the numerator 54 cases designated as "sufficient partial" interviews, as well as the 1,808 which were fully completed.

household-level information, and thus not open to person-based/topic-based instrument design manipulation, we inserted a brief series of demographic items – marital status, Hispanic origin, race, educational attainment, the presence of any work-limiting health conditions, and service in the armed forces – in front of the income questions. This permitted the person-based/topic-based format to be applied to these items as well, and thus to a reasonable portion of the interview as a whole. In the person-based design, all of these demographic items, and the income items that followed, were first administered about person 1, after which the questionnaire returned to the "top" of the demographic series and asked those questions and the income questions about person 2, and so on through the household roster. In contrast, the topic-based instrument asked marital status about person 1, person 2, person 3, etc., and similarly through the rest of the demographic series and the income items. Note that in both interview conditions, the demographic questions and the income questions were only asked of adults (age 15+).

Income items were administered as follows: Did [NAME] receive any income from [source] during the past 12 months? [if yes:] How much did [NAME] receive in [source] income during the past 12 months? As noted above, in the person-based interview format, the entire string of income items was first administered concerning person 1; then, after proceeding through person 2's demographic items, the entire income series was administered about person 2, and so on through the appropriate people on the household roster. In the topic-based format, each demographic question was administered in turn about all adult household members,³ followed by the income introduction, and then the income source and amount items. In the income series, the "any income from [source-1]" question was administered about persons 1, 2, 3, etc., and then the "how much" followup was administered to persons 1, 2, 3, etc., depending on the array of people for whom there was a "yes" response to the "source-1" question. Next were questions about "source-2/income from source-2," "source-3/income from source-3," etc. through all 9 income source types. (See Rothgeb et al, 2000a and 2000b, for more details.)

Note that the income introduction appeared only in the topic-based interview format. This design decision was guided by the primary goal of the research, which was to seek a solution to the single compelling weakness yet observed of the topic-based format relative to a person-based format: income item nonresponse. If that weakness can be neutralized, and neutralized with an easy-to-implement repair procedure (so went the rationale), then the other demonstrated advantages of the topic-based format should render the person-based/topic-based design choice an easy one for methodologists to make.

4. RESULTS

We restrict our analysis sample to all interviewed "adults" (age 15+) in households comprised of at least two adults. As noted above, QDERS procedures called for the administration of the

³E.g., "Is [NAME-1] now married, widowed, divorced, separated, or never married?" "How about [NAME-2]...?" "And [NAME-3]...?" "Is [NAME-1] Spanish, Hispanic, or Latino?" "How about [NAME-2]...?" "And [NAME-3]...?" etc.

income questions only to adults. The restriction of the analysis sample to persons in multiple-adult households is justified – and even necessary – because in one-adult households all design differences between a person-based and a topic-based survey instrument disappear. For the purposes of the present analyses, then, our effective number of interviewed households is 1,307, among which data were collected for 3,154 adults.⁴

4.1 Overall Nonresponse to Income Amount Items

To evaluate the intervention in the topic-based instrument we first compared overall item nonresponse rates for each of the survey's 9 income amount items across the two instrument treatments in the QDERS experiment. For these overall nonresponse rates, the denominator consists of all persons for whom a "yes" response was registered regarding that particular income source, and the numerator includes both types of nonresponse, "don't know's" as well as refusals. We summarize these results in Table 1. Table 1 also presents the results of additional analyses of instrument treatment differences in the likelihood that an interviewed person would display *any* nonresponse to *any* of the 9 income amount items, and similarly that he or she would nonrespond to *all* relevant income amount items. It is very clear from the Table 1 results that, with the addition of the introductory statement, the topic-based interview format no longer suffers any item nonresponse disadvantage compared to the person-based approach. Of the 9 individual comparisons, the 7 largest differences (in absolute value) are all in the direction of *less* nonresponse for the topic-based treatment. According to the Wilcoxon signed rank test (Snedecor and Cochran, 1967), this preponderance of largest differences in one direction is itself indicative that the null hypothesis should be rejected ($p < .05$), and justifies the conclusion that the topic-based interview format, with the introductory statement, was less subject to income item nonresponse than the person-based format. The three individual item differences that are statistically significant (wage/salary income, "welfare" income, and total income), and the significant differences for "any" nonresponse and for "all" nonresponse, lend further support to the conclusion that the addition of the introductory statement eliminated the disadvantage of the topic-based format, and may even have reversed it.

4.2 Refusals to Income Amount Items

Despite the apparent elimination (if not reversal) of the item nonresponse problem in general, since Loomis' (1999) analyses had implicated refusal nonresponse as the agent primarily responsible for the topic-based format's elevated item nonresponse, we also decided to examine the QDERS data with regard to refusal nonresponse specifically. Not surprisingly, given the overall income item nonresponse results, we find little evidence of any remaining refusal nonresponse problem for the topic-based design relative to the person-based design; see Table 2. The refusal results for the individual income items are certainly less dramatic than we saw in

⁴In fact, the effective number of cases available for analysis of the income nonresponse experiment is less than this figure – 3,043, to be precise – due to substantially incomplete data for 111 adults in otherwise interviewed, multi-adult households.

Table 1 with regard to overall nonresponse. The signs of the observed differences, while still primarily in the direction of *less* refusal nonresponse for the topic-based treatment, are less consistent, and there are no significant differences in the direction of a lower refusal rate in the topic-based treatment, and even one significant difference (for Social Security income amounts) which rekindles the initial nonresponse concerns about the topic-based format.⁵ But among the summary measures there is no evidence that persons interviewed with the topic-based instrument were more likely to refuse any of the items, or all of the items, or that respondents to the topic-based form were more likely to offer a blanket refusal for all items for all household members. On the whole, the results summarized in Table 2 suggest that the intervention introduced into the topic-based interview was generally successful in erasing what had been an advantage for the person-based format in terms of refusal nonresponse.

4.3 Differences in Demographic Characteristics, and their Influence on the Results

Within the analysis sample, a comparison of demographic characteristics across the two treatment groups indicates no difference in the average number of adults per household (2.4 for both treatments) or in the distribution of the number of adults ($\chi^2=1.67$, 4 df, n.s.), and no significant differences for most other characteristics (age, armed forces service, disability, Hispanic origin, marital status, or sex). Two other variables, however – education and race – were distributed unevenly across the two treatments; these differences are summarized in Table 3.

As Table 3 makes clear, even though the distributions of these characteristics differ significantly across the two instrument treatments, the difference between treatments in any particular category is never large in an absolute sense – never exceeding a few percentage points. Nevertheless, differences between treatments on these characteristics could, conceivably, be associated with the effects the experiment was designed to measure, and thus could affect our conclusions about the ability of our intervention to improve topic-based income amount reporting. To investigate this possibility, we simply conducted separate analyses of the overall nonresponse results by interview treatment for each of the education and race subgroups. These analyses (not shown) suggest that the basic outcome is robust. That is, for all four education subgroups, the predominant difference across the 9 income types is in the direction of reduced nonresponse for the topic-based treatment relative to the person-based; and 3 of the 4 individual comparisons which show a significant treatment effect are in this direction. The same general trend of the observed differences – less nonresponse for the topic-based interview – also holds

⁵Note that the overall nonresponse rates for Social Security amounts differed only trivially by questionnaire treatment (see Table 1). Thus, for this income source the topic-based and person-based designs differed only in the *form* of nonresponse experienced, not in the overall extent of the nonresponse. As noted above, compared to person-based interviews, the topic-based format produced significantly more refusal nonresponse; but, correspondingly, it produced significantly less “don’t know” nonresponse (data not shown).

consistently across all three race subgroups, and here all 3 of the significant individual comparisons mirror this trend.

We are reasonably confident, therefore, that the observed nonresponse improvement brought about by our simple intervention in the topic-based design is not an artifact of the sample differences on these two demographic characteristics.

4.4 Interviewers' Evaluations

Our final evaluation measures draw on QDERS interviewers' experiences and opinions, both about the topic-based design in general and our specific intervention to reduce income item nonresponse. Regardless of any potential benefits of a questionnaire design "improvement," such an improvement is unlikely to prove effective if interviewers resist it or perceive it negatively. This certainly does not seem to be a problem with the topic-based design. A debriefing questionnaire was administered to all QDERS interviewers at the end of the interviewing period, after they had experienced both instrument types. As shown in Table 4, interviewers overwhelmingly preferred the topic-based design to the person-based design for all four hypothetical interviewing situations we asked them about – interviewing reluctant respondents, interviewing in "large" households, and interviewing in both rich households and poor. They also overwhelmingly favored the QDERS topic-based instrument for asking income questions specifically. As noted earlier, Moore and Moyer (1998a, 1998b) obtained similarly positive assessments from the interviewers who participated in their initial research concerning the topic-based format.

With regard to the income introduction in the topic-based QDERS interview, interviewers' generally favorable reactions were evident almost immediately, when they first encountered the statement during initial training. More than one interviewer expressed the opinion that the introduction was "just what we need," and that they should always have simple and effective "ammunition" like this to help them persuade respondents to cooperate. More quantitative data from the debriefing questionnaire, summarized in Table 4, support this anecdotal evidence. Interviewers reported that they "felt comfortable" reading the introduction to respondents ("strongly agree" + "agree" = 92%), that respondents in general "reacted positively" to the introduction ("strongly agree" + "agree" = 83%), and that their perception was that the introduction "helped persuade respondents" to answer the income questions ("strongly agree" + "agree" = 74%).⁶

⁶It is certainly possible that there was some "spill-over" of the income introduction to the person-based treatment, at least among interviewers who conducted person-based interviews in the second half of the QDERS field period. That is, interviewers may have employed a similar type of unscripted introduction on their own to help convert reluctant person-based respondents. Use of such an introduction is not quite as convenient with a person-based format, where the income questions are not concentrated but are spread throughout the interview. Nevertheless, such a spill-over would tend to dampen any treatment differences. We have some evidence that

5. SUMMARY AND CONCLUSIONS

We are encouraged by the results of the QDERS experiment. Our basic findings suggest that, with the addition of a very brief and simple introductory statement, a topic-based interview need not suffer greater nonresponse to income amount items than an interview conducted in a person-based format. In fact, the evidence from this experiment suggests that such an introduction may actually result in not just equivalent nonresponse, but *reduced* nonresponse relative to the person-based design. This is potentially an important outcome. A low-cost solution to the income item nonresponse problem would eliminate a major barrier to wider implementation of the topic-based format, and would allow the many other benefits that seem to accompany topic-based interviewing – greater efficiency, happier interviewers and respondents, reduced unit nonresponse, and reduced (non-income) item nonresponse – to be realized more widely. Of course, if such a solution were to not just eliminate the income nonresponse disadvantage of the topic-based format, but to reverse it, so much the better.

We find it interesting to note that what initially appears in Loomis' (1999) work as a disadvantage or weakness of the topic-based design – the concentration of all questions on a single topic together in one section of a survey interview, especially when those questions deal with potentially difficult or sensitive matters, thus increasing the odds of blanket nonresponse – may in fact represent a strength. The very fact of their concentration affords an opportunity to offer respondents, at a single point in the interview, explanations and encouragement. In a person-based interview, in contrast, there is no single target point for such explanations and encouragement – they are multiple and spread throughout the interview. Thus, relative to the person-based design, the topic-based format offers more efficient and more concentrated opportunities for similar interventions aimed at reducing nonresponse in any survey content area with an elevated level of nonresponse.

Our encouragement over the apparent success of the present experiment does not blind us to the limitations of the QDERS research, which necessitate the exercise of some caution in interpreting the results. One obvious problem is the very low (by Census Bureau standards, at any rate) QDERS response rate. The fact that only about half of eligible households chose to respond to the survey may mean that the pool of respondents was heavily weighted toward the most docile and cooperative. It is possible that more vigorous efforts to gain the cooperation of people with some reluctance to participate in the survey – QDERS employed only the most minimal refusal conversion procedures, and offered no external incentives to interviewers to achieve high response rates – might have brought into the interview many more people for whom maintaining cooperation throughout the interview would have proved substantially more challenging to interviewers. Such people may have displayed greater immunity to the charms of the income introduction, thus reducing its impact. This is, of course, speculation; the point is that minimal

this was not an important problem – separate analyses by interviewer group (not shown) reveal no differences in the general outcome of the experiment among those who administered the topic-based instrument first versus those who first administered the person-based instrument.

nonresponse would render such speculation largely irrelevant, but unfortunately the QDERS nonresponse rate fell far short of "minimal."

A more fundamental limitation of the QDERS design also affects the conclusions that can be drawn concerning the effectiveness of the income introduction. Budget and other resource restrictions limited us to only two instrument treatments in our experiment, the person-based format and the topic-based format with the income introduction. The absence of a "standard," unenhanced topic-based treatment, without the introductory statement, would have strengthened the research considerably, by allowing us to confirm (presumably) the basic person-based/topic-based income nonresponse difference, and to separate out with confidence the impact of the added statement. As it is, we can reasonably assume that the statement effectively eliminated the topic-based instrument's nonresponse disadvantage, but the absence of internal baseline information means we cannot rule out competing explanations.

Future research into the topic-based design, and in particular its impact on income nonresponse, would do well to address these limitations. Such research should also pay some attention to the possibility that Social Security income might still suffer elevated refusal nonresponse in a topic-based interview even with the added introduction. Is this a finding that stands up to replication? And if so, what is it about this income type, or about the characteristics (elderly, presumably) or concerns of those most likely to be called on to report it that renders it particularly prone to refusal nonresponse in the face of a topic-based question format? And are there other measures that a topic-based questionnaire can adopt in order to remain a viable instrument for measuring Social Security income?

On the other hand, no research is ever perfect. The current study, despite its flaws and the questions it leaves unanswered, provides reasonable evidence that one problem with the topic-based format can be overcome – and perhaps even turned into an advantage – with a simple design modification. If so, then it may be time to focus on other, more important questions about topic-based interviewing which have yet to be sufficiently addressed by research. For example, Loomis (1999) has shown that interview "break-offs" produce very different patterns of missing data in the topic-based and person-based formats. Missing data following an interview break-off in a person-based interview tends to take the form of virtually complete data about some household members and virtually completely missing data for others. In a topic-based interview, in contrast, break-off-related missingness most often takes away a "chunk" of information (and generally the same chunk) about all household members, leaving all persons with some complete data and some data holes. Research needs to address the impact of this different pattern of nonresponse on edit/imputation systems, and, ultimately, the quality of the estimates produced by the survey. And, an even more fundamental question: What effects does a topic-based format have on survey data quality? Moore and Moyer's (1998a, 1998b) results suggest that, relative to the person-based format, the topic-based design is quality neutral, but a thorough and rigorous assessment has yet to be done.

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Table 1: Overall Nonresponse to Income Amount Items, by Income Type and Interview Format

<i>Income Type</i>	<i>% Nonresponse to Income Amount Question</i> (n = number of persons reporting each income source, for whom an income amount question was asked)		<i>Significance Test</i> (χ^2)	
	Person-Based (no intro to income Qs)	Topic-Based (with intro to income Qs)		
Wage/Salary	19.4 (n = 973)	>>	14.1 (n = 993)	$\chi^2 = 10.0$ p<.005
Self-Employment	27.3 (n = 139)	(>)	22.5 (n = 138)	n.s.
Interest/Dividends	32.4 (n = 405)	(>)	29.3 (n = 437)	n.s.
Social Security	24.6 (n = 232)	(<)	24.9 (n = 245)	n.s.
SSI	16.0 (n = 25)	(>)	4.4 (n = 23)	n.s.
"Welfare"	12.1 (n = 33)	>>	0 (n = 25)	Fisher's exact p<.10
Pension/Retirement	26.8 (n = 123)	(>)	25.0 (n = 140)	n.s.
Other	15.3 (n = 85)	(<)	15.4 (n = 78)	n.s.
Total Income	18.3 (n = 1513)	>>	15.2 (n = 1530)	$\chi^2 = 5.2$ p<.05
% with D/R nonresponse to ANY income amount item	25.0 (n = 1513)	>>	20.9 (n = 1530)	$\chi^2 = 7.3$ p<.01
% with D/R nonresponse to ALL income amount items	16.3 (n = 1513)	>>	12.8 (n = 1530)	$\chi^2 = 7.6$ p<.01

Table 2: Refusal Nonresponse to Income Amount Items, by Income Type and Interview Format

<i>Income Type</i>	<i>% Refusal Nonresponse to Income Amount Question</i> (same n's as Table 1, except where noted)		<i>Significance Test</i> (χ^2)	
	Person-Based (no intro to income Qs)	Topic-Based (with intro to income Qs)		
Wage/Salary	8.4	(>)	6.6	n.s.
Self-Employment	11.5	(>)	5.8	n.s.
Interest/Dividends	10.1	(<)	10.3	n.s.
Social Security	10.8	<<	17.1	$\chi^2=7.5$ p<.05
SSI	8.0	(>)	0	n.s.
"Welfare"	0		0	n.s.
Pension/Retirement	8.9	(<)	12.9	n.s.
Other	5.9	(>)	5.1	n.s.
Total Income	8.5	(>)	7.7	n.s.
% who refused <i>ANY</i> income amount item	9.3		9.3	n.s.
% who refused <i>ALL</i> income amount items	7.2	(>)	6.3	n.s.
"whole hh income refusal" (% of hhs in which all income amount items were refused)	5.6 (n = 629)	(>)	5.2 (n = 640)	n.s.

Table 3: Differences in Demographic Characteristics by Interview Format (analysis sample cases only)

<i>Demographic Variable</i>	<i>% of Analysis Sample Cases with the Given Characteristic</i>		<i>Significance Test</i>
	Person-Based (no intro to income Qs)	Topic-Based (with intro to income Qs)	
EDUCATION (n = 3,008)	100%	100%	$\chi^2=11.0$ 3df, p<.05
less than high school	14.8%	<< 17.5%	t=1.96, p<.10
high school graduate	31.6	>> 28.2	t=2.07, p<.05
some college	24.7	<< 28.0	t=2.05, p<.05
BS/BA or beyond	28.8	26.4	n.s.
<hr/>			
RACE (n = 3,044)	100%	100%	$\chi^2=9.9$ 2df, p<.01
white	81.5%	>> 77.9%	t=2.50, p<.05
black	7.9	<< 11.2	t=3.08, p<.01
other	10.6	10.9	n.s.

Notes: (1) The QDERS interview permitted multiple race reporting. For purposes of this analysis, those whose race was reported as white only are categorized as “white;” the “black” category includes those who included black as any of the races they reported; all others are categorized as “other.” (2) n’s indicate the number of analysis sample cases with non-missing data for the characteristic of interest.

Table 4: QDERS Interviewer Debriefing Questionnaire Results

<i>Debriefing Questionnaire Item</i>	<i>I'ers' Responses</i>
<p>The income questions were asked differently in the test and control versions of QDERS. In the <i>test</i> version, you read the whole question for the first person, and then asked "How about (you/name)?" for other people in the household. In the <i>control</i> version, you asked all the questions for person 1, then all the questions for person 2, and so on.</p>	
<p>1. Which instrument version did you prefer to use ...</p>	
<p>a) ... with respondents who were reluctant to answer the income questions? (n = 22)</p>	<p>% "test" 91 % "control" % "no preference" 9</p>
<p>b) ... in "large" households with 3 or more adults? (n = 22)</p>	<p>% "test" 96 % "control" 5 % "no preference"</p>
<p>c) ... in high income households? (n = 22)</p>	<p>% "test" 77 % "control" % "no preference" 23</p>
<p>d) ... in low income households? (n = 22)</p>	<p>% "test" 73 % "control" 9 % "no preference" 18</p>
<p>e) Overall, did you prefer the test version or the control version for asking the income questions? [Note: response options did not include "no preference"] (n = 23)</p>	<p>% "test" 96 % "control" 4</p>
<p>2. The test version of the survey included the following introduction to the income questions: <i>"The next questions are about income. We know that people aren't used to talking about their income but we ask these questions to get an OVERALL statistical picture of your community and the nation, NOT to find out about you personally."</i></p> <p>Please indicate your level of agreement with the following statements.....</p>	
<p>a) I felt comfortable reading this introduction. (n = 23)</p>	<p>% strongly agree 70 % agree 22 % (neutral, neither) 9 % disagree % strongly disagree</p>
<p>b) Respondents reacted positively to the introduction. (n = 23)</p>	<p>% strongly agree 26 % agree 57 % (neutral, neither) 13 % disagree 4 % strongly disagree</p>
<p>c) The introduction helped persuade respondents to cooperate with the income questions. (n = 23)</p>	<p>% strongly agree 26 % agree 48 % (neutral, neither) 26 % disagree % strongly disagree</p>