

RESPONSE EFFECTS IN SURVEY MEASUREMENTS OF NET WORTH

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NOTE: This effort is dedicated to the memory of Robert Ferber, who contributed so much to the evaluation and improvement of net worth data and to advances in survey methodology in many fields.

Response effects in surveys may be defined as any of a variety of factors arising between an interviewer and a respondent which result in or contribute to deviations from so-called "true" answers. Such factors include misunderstandings, lack of knowledge, memory difficulties, reluctance to reply, or deliberate misstatements to cite the more common elements. There is probably no survey topic more subject to such aberrations than the measurement of personal wealth or net worth. In some aspects of net worth, for example, survey-based estimates characteristically amount to half or less of aggregates derived from reasonably reliable institutional sources.

The causes of disparities of this magnitude are manifold and vary according to the net worth category being examined. In their definitive work on response effects, Sudman and Bradburn cite as the principal culprits a combination of memory-related problems and the sensitive and perceived threatening nature of this type of inquiry [24]. The findings of Ferber and his associates in their extensive evaluations of net worth data had earlier reached a similar conclusion [8,9,10]. The remainder of this presentation will be devoted to an examination of the scope and nature of response effects in the net worth sector and a discussion of some possible means of ameliorating this problem.

Magnitude of Response Effects

Because of their cost and complexity, and the generally cool receptivity of the public to such inquiries, studies of wealth and net worth are among the less frequent of our survey undertakings. Limited data have been attempted in the periodic U.S. consumer expenditure surveys conducted to update the Consumer Price Index. A series of more specifically directed savings surveys were fielded in the U.K in the early fifties [6]. Annual collection of such data was carried out in the fifties in the FRB-sponsored surveys of consumer finances conducted by the University of Michigan [7]. A landmark survey was carried out in 1963 by the Bureau of the Census for FRB [20] and a somewhat similar one in Canada in 1970 [23]. The most recent effort in this country was the net worth inquiry included in the 1979 Income Survey Development Panel (ISDP), an experimental panel survey conducted in preparation for the now defunct, or at least postponed, Department of Health and Human Services Survey of Income and Program Participation (SIPP) [27].

Although the concepts and techniques used in these various inquiries differed to at least some degree, the results are disappointingly similar. Table 1 presents the overall findings for the more recent studies. These are expressed in terms of the ratio of the survey-based aggregates for specific net worth components to independent, usually institutional-based, estimates. The in-

dependent data for the U.S. studies represent, in the main, adaptations by Ruggles of the FRB Flow-of-Funds aggregates for financial data and various specialized techniques for other components [22]. The Canadian data are also mostly derived from comparable sources in that country [4].

While the independent estimates cannot, of course, be regarded as sacrosanct, the conclusion is rather inescapable that the survey data, for financial components at least, are quite far off the mark. Even if we cannot say, with certainty, whether the surveys are capturing 40, 50, or 60 percent of the true aggregate values, it is clear they are subject to deficiencies of a very serious nature. The ratios vary too much to ascertain which of the financial sectors are most affected by negative response effects, i.e., downward biases. The surprisingly high ratio for stocks and mutual funds in the 1979 ISDP survey should not be taken too literally, as it appears to be a fortuitous consequence of the imputation process for missing values, to be discussed later.

The rather startling ratios for home value are the result of a clash between two quite distinct methods, both subject to a good deal of variation. The survey method, as explained later, is based on the respondents' estimates of what their homes would sell for on the current market. The "independent" estimates are not based on institutional or other records but derive from the "perpetual inventory" method used for valuation of durable goods [16] but of somewhat dubious validity for the housing sector. A possibly favorable indicator for the survey method is the close correspondence between the survey estimates of home mortgage indebtedness and the institutionally-based independent aggregates for that component. In a sector where valuation is especially difficult, on the other hand, the reasonably close agreement for equity in business or farm enterprises may signify the weakness in the independent estimates more than the quality of the survey-based data.

Nonresponse Effects

Survey respondents have various means of indicating their displeasure with a particular inquiry, but especially through noncooperation. Refusals to participate at all are, of course, a feature of almost all surveys. These can vary from only a small percentage of respondents as found, for example, in many of the Census Bureau's household surveys to 50 percent or more as experienced in various private undertakings of an uncertain nature and auspices [2]. Generally speaking, complete refusals are not necessarily associated with the content of a survey, since respondents are not usually fully informed in advance of the details of the inquiry. Nevertheless, complete nonresponse of any substantial

TABLE 1

RATIO OF SURVEY-BASED AGGREGATES TO INDEPENDENT AGGREGATES OF NET WORTH:
VARIOUS SURVEYS, 1958 - 1979

(Data expressed as percent of independent aggregates)

Net Worth Component	1979 ISDP- SIPP Survey	1970 Canadian Survey of Consumer Finances	1963 FRB Survey of Financial Characteristics	1958 SRC-Michigan Consumer Finances Survey
<u>Financial Assets</u>				
Checking accounts and cash	31	48 ¹	34 ³	69
Government Savings Bonds	33	65	57	42
Other interest-bearing items (savings accounts, bonds except savings bonds, certificates of deposit, money market funds, loans to others)	49	38 ²	54	46 ⁴
Stocks and mutual funds	72	20	60	26
<u>Other Assets</u>				
Value of own homes	140	NA	143	NA
Equity in businesses and farms (including rental property)	79	82	67	NA
<u>Liabilities</u>				
Home mortgages	90	110	89	97
Consumer credit	65	45	55	41

Sources: Independent estimates for U.S. from Ruggles and Ruggles, 1981; for Canada, from Davies, 1979. Survey Data for 1979 from Pearl et al, 1982; for 1970, from Davies, 1979; for 1963, from Projector and Weiss, 1963; for 1958, from Ferber, 1966.

¹Cash only

²Includes checking accounts

³Checking accounts only

⁴Savings accounts only

magnitude--and this would include cases which could not be contacted as well as refusals--will likely bias almost any type of inquiry. Although the evidence is not conclusive, evaluation studies based on interviews with samples drawn from the records of institutional sources such as savings banks--and where the actual individual holdings may, therefore, be ascertained--indicate that complete nonrespondents in a net worth inquiry have generally larger assets than those cooperating in the survey [8].

Refusal or failure to reply to specific survey questions, after agreeing to be interviewed, is more clearly related to the subject of the inquiry. In the case of wealth and net worth studies, failure to report the amount of a specific holding, after admitting possession of that holding, can be a serious nonresponse problem. Evaluation studies, again based on samples drawn from institutional records, clearly indicate that nonreporters of the size of their balances have substantially larger than average holdings [8].

The magnitude of nonreporting with respect to the size of holdings is not always known for prior studies. Data from the 1979 ISDP-SIPP survey, however, reveal some rather startling and discouraging numbers. The proportion admitting ownership of assets or debts but not reporting balances or values, ranged from about a fifth for savings accounts and own homes, to a third to a half for real property other than homes, and three-fifths or more for stocks, bonds, and money market instruments [19]. An earlier dry run of the survey in 1978 also revealed large amounts of nonreporting of this kind, but only about two-thirds as much, on the average. In contrast, a University of Michigan survey of credit use in 1977, which also contained a number of net worth questions, experienced much lower levels of nonreporting of amounts [5]. Many survey practitioners have reported growing resistance from respondents in recent years, particularly in sensitive inquiries. The 1979 survey was especially lengthy and complex, and it is possible that interviewers were not pressing very hard for answers by the time they reached the net worth questions. Although not necessarily a justification for this failure, asset valuations are extremely difficult even under the best of circumstances, and excessive pressure on respondents to make estimates, which is sometimes done to minimize nonreporting, can often produce data of dubious quality.

Nonreporting of amounts can, of course, reflect lack of knowledge and inability or unwillingness to consult records, as well as refusal to reply. Although an effort was made in the 1979 survey to distinguish between refusals and other nonreporters, the distinctions are probably spurious, since a polite way of refusing is to allege lack of knowledge. There are also other means of avoiding disclosure without an outright refusal. A number of respondents in the survey, for example, cited savings account balances of 1, 2, or 5 dollars which, under the circumstances, seemed clearly to be deliberate misstatements. Others reported amounts rounded to the nearest hundred or thousand, which could be reasonable approximations in some instances but a subtle form of noncooperation in others.

Where nonreporting is a matter of lack of

knowledge, there are some means of reducing the problem and these will be discussed in a later section. We will address here the more difficult and intransigent problem of overt or disguised noncooperation. A number of techniques have been employed in an attempt to overcome or at least moderate the tendency. One of the possibilities is the so-called panel approach, whereby the same respondents are contacted periodically over time and asked for essentially the same information (in part, to measure changes). Ferber's studies utilizing panels indicated a considerable reduction in the proportion failing to report amounts between the first and fifth interview with the panel, which was attributed largely to growing acceptance by respondents of the survey purposes and auspices [8]. Refusals to participate in the survey at all increase, however, as the panel ages, offsetting some but not all of the gains made otherwise.¹

Another technique is to avoid asking questions on especially sensitive subjects such as net worth at the outset of an inquiry. In a panel study, this could mean delaying inclusion of such subjects until the second or later interview. In a one-time survey, the more sensitive items are placed in the middle or latter part of the questionnaire, on the assumption that respondents will be more likely to cooperate after some warm-up. Concrete evidence is lacking on the efficacy of these procedures for net worth questions, but experience with a variety of other sensitive subjects appear to confirm their usefulness.

The use of the so-called "sealed envelope" technique represents still another manoeuvre in this field. Instead of a direct answer, respondents are given the option of secreting sensitive information in a sealed envelope which may either be given to the interviewer in that form or mailed to the survey headquarters. Although results are mixed, the Census Bureau has achieved improved cooperation in income reporting by this means. Perhaps the most valuable device of all would be some means of increasing the motivation of respondents to cooperate in the undertaking, a matter which is addressed later in this report.

The overall effect of all of the techniques which have been attempted has fallen far short of resolving the problem, so that we may anticipate a considerable residue of missing net worth values even under the best of circumstances. Some form of imputation for these is, therefore, necessary in order to achieve reasonably usable survey results. Imputation, of course, carries certain risks that a survey organization privy to all of the details is in a better position to resolve the matter than a user faced with a sizable proportion of "unknown" cases. There are a number of approaches to imputation, from essentially doing nothing (that is, basing the results on only the complete cases) to some very sophisticated manipulations, which are assessed in various reports by the University of Michigan under a recent ISDP-SIPP contract (e.g., [14]).

There are two general approaches, however, which have been pursued in most undertakings of this kind. The first is the so-called "hot deck" procedure whereby values are supplied for missing cases by means of a random selection of values from among reporting respondents with the same demographic and/or socioeconomic characteristics.

The net effect is that nonreporters end up with about the same distribution of values as reporters with similar traits. The second approach is the so-called "regression" technique. Based on those reporting the information, a series of regression formulae are derived with the value for a given category (e.g., amount of savings) as the dependent variable and a series of demographic, socioeconomic, and other characteristics as the independent variables. Values for missing cases are then obtained from the appropriate equations by inserting the characteristics of the nonreporters. In order to avoid assigning identical values to each missing case in a given category, a random "error" value is often added to or subtracted from the calculated amount.

Where missing values are excessive, as indicated for the 1979 ISDP-SIPP panel, imputation can have rather striking effects. A hot-deck procedure was used in that instance, with household income and age of household head as the main classifiers. The average holding was substantially greater after imputation--especially for such categories as corporate stocks (almost double) and certificates of deposit and similar instruments (up by two-thirds)--as compared to the averages for the original reporters as a whole, mainly reflecting the fact that nonreporters were concentrated in income and age groups with larger than average portfolios.

Misunderstandings

Life is, of course, full of misunderstandings and there is no reason for surveys to be exempt from this problem. Numerous factors can contribute to misunderstandings, including the behavior of the interviewer, the intelligence and attention span of the respondent, the circumstances of the interview, and other intangibles. The evidence which exists is that the more controlled and prescribed is the task of the interviewer, and the less flexibility which is allowed in asking questions, the lower will be the response effects from this source [24].

The nature and quality of the questionnaire and other survey instruments, however, are undoubtedly the most important elements in avoiding misunderstandings. Conversion of a set of complex concepts into a usable series of survey questions is an extremely difficult undertaking; as in any translation from one language into another, something is frequently lost in the process. Although there are a number of guidelines on questionnaire design and construction, this process is still more of an art than a science and it is often difficult to assess the validity of one approach as opposed to another in the absence of, or even despite, extensive pre-testing. One element which has been fairly well established is that more detailed questions, within reason, are likely to elicit more accurate answers than summary questions on the same topic. For example, asking about different types of savings accounts, those in the names of children, etc., not only jogs the memory of respondents but improves the understanding of what is meant by the term. Avoidance of unduly lengthy and complex questions and abstruse language are almost obviously essentials in this regard.

Confusion among different kinds of holdings is another aspect of misunderstanding. It has been

found repeatedly in the income field, for example, that respondents have difficulty distinguishing among different types of welfare payments (AFDC, general assistance, SSI, etc.) or between Social Security pensions or disability payments and SSI. Detailed probing, even to the extent of asking about the color of checks received, has been used in an effort to overcome this difficulty. In the net worth sector, several respondents in the 1979 ISDP reported the holding of some hundreds of thousands of dollars in the unlikely form of U.S. savings bonds or regular savings accounts. Most likely, these represented other forms of Government securities or longer-term savings certificates, and this might have been ascertained if more probing had been specified.

Lack of Knowledge

Possibly aside from cooperation, lack of knowledge is the principal cause of response effects (as well as nonresponse) in net worth surveys. One issue which always arises in this context is the choice of the appropriate respondent within a household. The conventional wisdom is that a self-respondent (a person reporting only for him or her self) is almost invariably a superior fount of knowledge than a proxy respondent, or other person, reporting for that individual. Locating each person for interviewing purposes is, of course, more costly than accepting a single available respondent for an entire household. Another option is to use a single respondent but the one who is most knowledgeable on the subject in question, in our case, financial matters. Since the husband or male household head may qualify for this distinction, and is usually more difficult to find at home or contact than other members, additional cost will likely be entailed also in this instance. Somewhat surprisingly, the evidence in various fields does not strongly support the increased expenditure involved in the use of self-respondents in all instances. Sudman-Bradburn found comparatively little differences in the consequences of using self vs. proxy respondents in a variety of survey situations. Mixed results were found in the case of asset ownership rates in the 1979 ISDP-SIPP survey [12]. Nevertheless, since the logic is still there, it would be preferable to use self-respondents to the extent that excessive cost is not entailed, for example, by interviewing individually each adult who is present and available at the time of contact and to use proxy respondents only for absent members and young children.

There are some crucial sectors in the net worth spectrum where lack of knowledge has little relationship to the choice of respondent but is an almost endemic feature. These include value of homes, automobiles, and other durables and equity in business enterprises, private pension plans, and insurance. For these, specialized techniques, some of which have never been attempted on any significant scale, are required. The major possibilities are described below for each sector.

a. Value of homes--The value of a home has usually been defined as its current market value less any indebtedness. The conventional proce-

ture is to ask respondents what they believe the property would sell for on the current market. (Indebtedness is asked about separately.) In some instances, where there have been recent sales of similar units in a neighborhood, the respondent may be able to supply a reasonably accurate estimate of value. In other instances, where houses are relatively old and turnover has been slow, there is a likelihood that value may be underestimated because the effects of inflation may not be fully taken into account. In contrast, in dynamic areas where turnover has been rapid, expectations of increased value may be overly optimistic, without taking account of changed circumstances such as excessive mortgage financing rates. Although this simple approach appears to provide reasonably consistent results from survey to survey on an overall basis [11], the validity of individual reports is at least questionable.

Various other techniques have been suggested for measuring home value. One is to use the value assessed for property tax purposes. Of course, the standards vary from place to place and assessments are not always up to date. However, there appears to be a greater tendency now to review these more currently in the light of market conditions. One drawback, if the householder does not possess the information, is the cost of locating and consulting assessment records.

Another even more costly approach is to use professional appraisers to assess the value of homes. Some limited experience indicates considerable variability in the estimates of different appraisers for the same property, so that this approach also has its hazards [25]. Whatever the case, its cost precludes its use on any wide scale.

A final possibility is the use of regression techniques, based on the characteristics of the housing unit and its environment, to estimate value. The equations could be developed on the basis of sales values and characteristics of recently sold homes. Alternatively, the appraised or assessed values of various selected samples, in relation to their characteristics, could be used for this purpose. In any event, considerable research would be required before any of these alternative approaches could reasonably be substituted for the present direct method.

b. Value of automobiles--Next to their homes, automobiles probably represent the most valuable tangible possession of most families. A consistent and reasonably valid approach is possible for automobiles because of the existence of the "Blue Book," a standard trade manual used by dealers and insurance companies in judging the value of used cars of various makes and vintages. The approach now being used in net worth and similar surveys is to obtain from the respondent the make and model year and other relevant characteristics of each owned automobile, and to assign value at the data processing stage on the basis of the "Blue Book" information. Although the condition of a car could affect its real resale value, the failure to reflect this element is probably minor in relation to other estimation problems.

c. Value of other durables--Unfortunately, no "Blue Book" exists for appliances, furniture, and other household durables, in view of the almost limitless variety of items of this kind. As might be expected, most respondents have no reasonable basis on which to estimate the market value of their possessions of this kind, perhaps aside from those acquired very recently. A small feasibility study associated with the ISDP-SIPP program indicated one possible way of approaching this problem [18]. The approach attempted to simulate the procedure used by insurance companies in compensating clients for losses arising from theft or destruction.

The insurance company approach is, first, to estimate the current cost of purchasing the item in new form. This cost is then depreciated to a current value by taking into account the age of the insured item. In determining current purchase cost, insurance companies consult available trade manuals and may even contact various manufacturers and dealers. This would be a very costly and time-consuming process in a large-scale survey. Instead, in the feasibility study, the procedure was to obtain the original cost and year of acquisition (and whether acquired new or used) of the major appliances and furnishings owned by the household. The current purchase cost of a new item was then estimated by applying to the original cost the relative change in the official price indexes for that class of products over the period from the year of purchase to the current date.

In their discounting for depreciation, insurance companies generally use adaptations of certain vintage depreciation schedules for durable items issued some years ago by the IRS for guidance in tax return preparation. More useful would be life tables for durable products, such as those developed from special studies by the Department of Agriculture, but limited to selected items [21]. In the feasibility study, the Agriculture indexes were used where available in depreciating value and the IRS-insurance company tables for the remainder.

Generally speaking, the results of the feasibility study were promising in terms of the possibility of using a similar technique in net worth surveys, although more extended experimentation to refine the method was clearly desirable. The essential information in terms of product descriptions, original cost, and year of acquisition were reported in the great majority of instances. Also, although the responses would not be directly validated, the patterns appeared logical and derived valuation levels were in the same ballpark, at least, as measures based on the "perpetual inventory" method used for aggregate national data [16].

d. Equity in pension plans--Perhaps the fastest growing, and least well documented, asset category is the equity people have in private pension plans. Although some may have a general notion of the type of pension they might receive at retirement age, few if any can even approximate the value of the pensions they have already earned. This is the principal reason this category is usually disregarded or covered only superficially in net worth surveys.

One possible approach to this problem is pre-

licated on a relatively unknown provision in the Employment Retirement Income Security Act of 1974 (ERISA), whereby each participant in a private pension plan--and nearly all are now covered by the law--is entitled to obtain from his/her employer, on request, an annual accounting of the pension earned to date. The issue is too complex to discuss in detail in a general paper of this kind, but a possibility for a net worth survey would be to ask respondents with private pension plans to request and obtain from their employers the current status and balance in their accounts or, alternatively, to authorize the survey organization to obtain the information on their behalf.

A more modest approach would be to tap employer records on only an experimental or sub-sampled basis, but to use the information to develop regression equations with pension value as the dependent variable and various characteristics of the plan and the employee (such as age, earnings level, years of coverage, and contributory status) as the independent variables. These equations could then be used to estimate pension equity of the basis of the more collectable information on plan and employee characteristics that might be obtained in surveys. An experimental study along these lines was in the final stages of planning a couple of years ago, but was sidetracked because it appeared to conflict with a large-scale survey for a Presidential commission, which however failed to address the issue of equity.

e. Equity in life insurance--As for pension plans, studies have shown that people have virtually no knowledge of the equity they possess in their life insurance, and this sector has also been neglected in most net worth inquiries. The concept generally in use for this category is the cash surrender value of policies. Much of the insurance issued nowadays is term insurance, which has no cash surrender value. However, many persons have difficulty in specifying the type of insurance they have, which obviously adds to the difficulty.

One approach which has been considered is similar, in some respects, to that just described for other items. Respondents would be asked for certain essential details about their policies, such as type, face value, date of issuance, and the like. Equity would then be derived either via regression techniques or by consulting industry manuals containing formula for estimation of cash surrender value based on these criteria.

The crucial issue is how accurately respondents can both identify all of their policies and report the necessary characteristics. A small experimental study, associated with the ISDP-SIPP program, in which the samples were drawn mainly from insurance company records, explored this matter using various data collection alternatives [13]. The results were affected by various matching problems and can best be described as inconclusive. However, this still appears to be the most promising approach and more experimentation should be directed toward this end.

f. Equity in business enterprises--There is some question as to the most appropriate basis

for determining equity in a business enterprise. As for homes, one possibility is the estimated market value, if placed on sale, less outstanding debts. Other candidates include book value, replacement cost of assets, or value based on projected income streams. Perhaps the choice would depend as much on pragmatism as conceptual merit. A book-value approach runs into a rather sensitive reporting issue, whereas estimating asset replacement cost or market value may stumble on the basis of lack of knowledge.

A proposed experiment, also associated with ISDP-SIPP, would have explored several of these possibilities. A sample of businesses which recently changed hands would have been utilized so that sale or market value could be ascertained with reasonable accuracy. A comparison would then have been made with book value and some of the other options to the extent obtainable. Also, the development of regression equations relating sale or book value to various characteristics of the enterprise would have been attempted. The experiment was cancelled because of budgetary stringencies, but some such research is clearly needed before much progress can be expected in this sector.

Memory Difficulties

It is not possible to differentiate clearly between such elements as misunderstandings, lack of knowledge, and memory difficulties, but these are not exactly the same things. In many surveys entailing retrospective data, memory problems abound as events recede in time. This is not the typical problem in net worth surveys, since the inquiry usually relates to holdings as of the present time or at least a rather recent date. In this sector, the memory difficulties derive from the need to recall all of the holdings of the survey unit and, especially, the size of each holding.

Careful questionnaire construction, with sufficient probing and the use of memory aids of various kinds, should do much to reduce this problem. Nearly all practitioners have found, in addition, that inducing respondents to consult records can achieve major gains in the completeness and accuracy of reporting. In an experiment in the ISDP-SIPP program, respondents were mailed a trial balance sheet on assets and liabilities, which they were asked to complete in advance of the interviewer's visit. Although not many complied with this request, it was believed--and this was confirmed by comments by interviewers--that at least they had given advance thought to the matter. More commonly, respondents are encouraged to consult available records in reporting the amount of holdings. Again, success in securing such cooperation is mixed, but there is little question that more reliable answers, less rounding, etc., are achieved by this means.

Respondent Motivation

It may be rather obvious that if respondents can be highly motivated to cooperate in a survey, many if not most of the problems we have been discussing would dissolve. The issue, of course, is how to achieve this millennium. One standard approach is to send prospective respondents advance letters attempting to convince them of the importance and authenticity (and confiden-

tiality) of the impending survey. There are no clearcut indications of the effectiveness of this procedure for net worth surveys; in fact, there is concern that advance mention of the subject could be counterproductive. However, Census Bureau experience in its many household surveys indicates that interviewers are more readily welcomed in households receiving such missives, even if respondents have not thoroughly read or absorbed them.

Once arrived, interviewers of course have to be prepared to provide a reasonably logical and succinct explanation for their appearance. Although there may be exceptions, observations indicate that this does not seem to be the strong point of even skilled and experienced interviewers. More training and practice might improve this aspect, but there is no clear evidence that the introduction is a crucial element in respondent motivation. The general demeanor and deportment of the interviewer throughout the exercise could be a much more important factor.

The Survey Research Center of the University of Michigan has developed some highly imaginative approaches aimed at promoting respondent motivation [17]. One of these is establishment, at the outset, of a simple but signed "commitment" between the interviewer and the respondent, whereby the former pledges absolute confidentiality in exchange for the latter's promise to respond as accurately and completely as possible. Another is to preface certain crucial questions with some advance instructions and clarifications to promote understanding. Still another is a "feedback" approach whereby respondents are asked, for example, to think things over a little more carefully if a reply appears to be hasty or ill-considered, or given verbal encouragement from time to time if apparently replying carefully and well. There is no known instance of application of these specific techniques in a net worth inquiry, but an experimental study containing some sensitive health topics revealed a clear increase in reporting of sensitive information with the use of a combination of these procedures [17]. Various studies have been made of the possible use of proffered gifts or even cash offerings in promoting respondent motivation. In the net worth field, Ferber reported mixed results [8]. Cash offers appeared to boomerang. However, small gifts and especially a surprise gift given just prior to a planned interview seemed to promote compliance. It would be interesting to see the joint effect of a signed commitment and a gift incentive offered on that contingency.

Deliberate Misstatement

Most practitioners have found that the more salient a subject is to respondents, the more likely they are to supply the information and the smaller will be the response effects [24]. There is little question that the financial resources and property people possess is a rather salient matter. In this case, however, there is a conflict with an obverse principle, to wit, that subjects which are highly sensitive in nature and which are or appear to be threatening to respondents will result in especially large response effects. Unfortunately, the latter thesis is clearly the dominant element in our present

instance.

There are a variety of reasons why people regard net worth inquiries as especially sensitive or threatening. On the one hand, there is often resentment about what appears to be an invasion of privacy. On the other, some are embarrassed by the possible disclosure either of lack of resources--especially if living in apparently affluent circumstances--or possession of exceptional holdings, if living rather modestly. Those receiving public assistance are naturally concerned that reporting of any significant holdings could affect their eligibility. Wealthy individuals may feel their personal safety or security could be threatened by full disclosure of their possessions or that they could thereby come under closer scrutiny by tax authorities.

As indicated earlier, respondents sometimes react to these concerns by outright refusal to participate or by more subtle means, such as claiming ignorance of their holdings or reporting nominal or spurious amounts. Ferber and associates have found, however, that the principal response effect is denial by respondents that they possess particular holdings. In a series of validation surveys of persons known to possess savings accounts, for example, something like a quarter to a third failed to report such a holding in the inquiry [8]. The same pattern was found for other net worth components. In general, the size of holdings for nonreporters, as revealed by the records, was somewhat lower than the average for all cases combined.

Some of the nonreporting could undoubtedly be attributed to lack of knowledge or memory difficulties, but deliberate misreporting stands out as a likely major cause. It is interesting, in these studies, that, for those reporting their savings accounts, the balances they reported deviated only slightly, on the average, from the information in the records of the savings institutions from which the samples were drawn; individual variations, however, were substantial but largely offsetting in nature.

Most of the effort devoted to improvement of survey data over the years has been directed at elimination or control of inadvertent reporting errors arising because of misunderstandings, lack of knowledge, or memory difficulties. These include such means as improved questionnaire design, better interviewing and data collection techniques, more careful training and control of interviewers, and the like. Although some of those steps should also assist in reducing deliberate misreporting, that problem has received relatively little direct attention. Yet, it is clear from the absence of any significant progress in the improvement of net worth data over the years that respondent resistance and intentional misreporting must lie at the core of the problem.

Various techniques have been developed and utilized in connection with data collection in sensitive areas but these have been applied only minimally, if at all, in the case of net worth and other financial data. Perhaps the best known approach is the so-called "randomized response" technique [26]. In this method, respondents are given various sets of two questions which can be answered "yes" or "no," one an innocuous type

(e.g., "Does your birthday fall in the first half of the year?"), the other a sensitive one (e.g., "Have you murdered your wife recently?"). Using some random technique (e.g., tossing a coin) the respondent, out of view of the interviewer, determines which one to answer and does so accordingly without disclosing the question that was selected. From an aggregation of such responses, it is possible mathematically to estimate the approximate proportions of "yes" and "no" answers to the sensitive question. This approach has obvious limitations since, without knowledge of who answered the sensitive question, it is not possible to continue with important supplementary inquiries (such as, how and when was the murder committed.) Nevertheless, since, as indicated, a key problem in net worth studies is denial of ownership, randomized response could theoretically be used to obtain better measures of ownership rates of specific assets and liabilities and, if the samples are sufficiently large, this could be done for various demographic and socioeconomic groups in the population. The derived measures might then be used to develop ratio estimates for improvement of detailed survey data obtained through conventional questioning.

A more flexible technique which has been used primarily in studies of delinquency and crime is the so-called "card sorting" procedure. Instead of being asked direct questions on sensitive topics, the respondent is given a set of cards on which are printed various items (e.g., in our case, these could inquire into possession of various assets and liabilities interspersed with various innocuous items such as owning a TV set or a camera). While the interviewer is apparently engrossed in other matters, the respondent places each card in a "yes" or "no" box (or other set of answer boxes). A common follow-up is for the interviewer, at the conclusion of the sorting exercise, to take the cards placed in the "no" box and, together with some standardized motivational conversation, to ask the respondent to reconsider and re-sort those cards a second time. For some psychological or other reason, the technique appears to soften considerably the impact of sensitive subjects. Crime-related studies, using this approach, have achieved some rather striking, although reasonable, levels of self-reporting of deviant behavior [1]. One advantage over the randomized response technique is that the identity of the reporter is known, so that the necessary follow-up questions may be asked and a complete micro-record may be assembled.

The use of the panel approach, with successive waves of questioning over time, has been found useful in reducing response effects in the net worth field. Various of the Ferber studies cited earlier indicate a considerable reduction in the extent of nonreporting of known holdings in subsequent periods of interviewing of the panel, as respondents gained more familiarity with and confidence in the survey mechanism. The impact could possibly be heightened by delaying the inclusion of the more sensitive net worth inquiries until the second or later waves.

Various other approaches could also be helpful in diminishing the misreporting problem. Blair and associates found that the use of more detailed wording and colloquial expression

improved reporting in such sensitive areas as drinking and sex [3]. The motivational approaches described earlier, as developed by Michigan, possibly in tandem with some tender of gifts, are clearly directed at the concealment problem. More emphasis on confidentiality through such means as sealed envelopes, self-enumeration, and maintenance of diaries, as opposed to direct interviews, etc., could play a significant role also.

Of course, various combinations are possible and, in fact, could be necessary in order to achieve an adequate breakthrough. For example, the interview could start with some of the Michigan motivational techniques, especially the "commitment" part. The identification of holdings could then be attempted through the "card sorting" procedure. The question on size of holdings could employ some of the other techniques, such as improved wording, the Michigan "feedback" procedure, and the "sealed envelope" option. Randomized response might be attempted at the end for selected holdings as a control device. If built into a panel setting, the gains might be cumulative.

Summary

Adverse response effects are a feature of almost all surveys but appear to be especially prevalent in a complex and sensitive field such as wealth and net worth. Part of the problem derives from inadvertent reporting errors due to misunderstandings, lack of knowledge, memory difficulties, or absence of interest or motivation on the part of respondents. However, another major factor is reluctance to participate and deliberate misreporting arising as a result of the sensitive and perceived threatening nature of inquiries in this field.

The inadvertent reporting errors can likely be moderated by such means as improved questionnaire design and formulation, selection of appropriate respondents, better training and control of interviewers, and efforts to increase respondent motivation. In certain sectors, however--such as value of homes and other durables and equities in pension plans or businesses--it may not be reasonable to expect respondents to supply reliable answers even under the best of circumstances. Specialized techniques possibly including regression formula and imputation of data from other sources appear to be necessary in these instances.

Overcoming respondent resistance and deliberate misreporting may be an even taller order. In spite of its obvious importance, this problem has been accorded inadequate attention in survey development, in general, and especially in the net worth sector. Various techniques exist for dealing with sensitive subjects, such as randomized response, card sorting, panel designs, improved questioning, motivational devices, and others which, alone or in combination, offer some promise of making inroads into this formidable problem.

FOOTNOTES

¹The 1979 ISDP-SIPP also utilized a panel, but questions on size of holdings were not asked each

time and the inquiry covered a wide range of other information.

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